

## Capacity declaration Amsterdam Airport Schiphol; winter 2011/2012

### Available number of slots

The number of slots available for landing and take-off operations during the winter season 2011/2012 (October 30, 2011 through March 24, 2012) is specified in the table below. The numbers as specified in this table are applicable to Commercial Aviation only. For the winter season, local time equals UTC + 1 hour.

*Available number of slots; winter season 2011/2012  
(October 30, 2011 through March 24, 2012)*

Total number of departure and arrival slots	Maximum number of departure slots in bracket 21:40 – 05:59 UTC	Maximum number of arrival slots in bracket 22:00 – 06:19 UTC
180,000	3,250	7,800

**Note:**

It is allowed to re-allocate in the bracket 21:40 – 04:59 UTC departure slots that were historically allocated in the bracket 05:00 – 05:59 UTC. However, it is not allowed to re-allocate in the bracket 05:00 – 05:59 UTC departure slots that were historically allocated in the bracket 21:40 – 04:59 UTC.

### Distribution of aircraft movements over a twenty-four hours period

For the purpose of this declaration, a distinction is made between departure peaks, arrival peaks, fire breaks, off-peak, early morning and night. This distinction is based on local time and on the operational runway capacity, as will be defined further in this declaration. Fire breaks are a strategic measure for punctuality and reliability purposes, which are intended to create some margin in the planning to be able to cope with operational disturbances.

The following definitions apply:

- Peak:** 06:00 - 20:19 UTC (07:00 - 21:19 LT)
- Off-peak:** 20:20 - 21:59 UTC (21:20 - 22:59 LT)
- Night:** 22:00 - 04:59 UTC (23:00 - 05:59 LT)
- Early morning:** 05:00 - 05:59 UTC (06:00 - 06:59 LT)
- Fire break:** A single 20 or 30 minutes block immediately following a departure peak as well as immediately preceding an arrival peak, thus separating that particular arrival peak from the preceding departure peak. The duration of the fire breaks should be 20 minutes, except for the first fire break of each day which should have 30 minutes duration.

## Operational runway capacity

For slot allocation purposes, the operational runway capacity for the winter season 2011/2012 has been determined as follows:

Arrival peaks:	106 IFR movements per hour (three 20 minutes blocks), with a maximum of 68 arrivals and 38 departures. The movements should be evenly distributed over the 20 minutes blocks.
Departure peaks:	110 IFR movements per hour (three 20 minutes blocks), with a maximum of 74 departures and 36 arrivals. The movements should be evenly distributed over the 20 minutes blocks.
Off-peak:	75 IFR movements per hour, with a maximum of 35 arrivals and 40 departures.
Night:	49 IFR movements per hour, with a maximum of 24 arrivals and 25 departures.
Early morning:	55 IFR movements per hour, with a maximum of 25 arrivals and 30 departures.

For slot allocation purposes, an operational runway capacity of 12 arrivals and 13 departures per 20 minutes should be assumed during each 20 minutes fire break (18 arrivals and 20 departures for the 30 minutes fire break).

Coordination will in principle be based on static clock hours and during the period 07:00 – 23:00 LT on 20 minutes intervals, except for the 30 minutes fire break and the adjacent time bracket. In view of expected cancellations, the number of allocated slots for any 20 minutes interval may exceed the specified operational runway capacity by 2 movements, however, the maximum number of arrivals and departures should not be exceeded on a historical basis.

## Additional requirements and conditions

1. Arrival and departure peaks should not overlap.
2. To facilitate a smooth handling of traffic, fire breaks should be planned between all transitions from departure to arrival peak. In the 20 minutes blocks where fire breaks should be planned (or 30 minutes block for the first fire break of the day) and have not yet been completely realized, new slots should not be allocated. In addition, cancelled slots should not be re-allocated in these blocks until the required fire breaks are fully incorporated.

## Supplemental information

In addition to the capacity limitations, aircraft operators should take into account that the operating restrictions as specified below are effective at Amsterdam Airport Schiphol.

### Operating restrictions based on certificated noise levels

1. Aircraft which are certificated in accordance with the noise standards of ICAO Annex 16 Chapter 2:
  - Take-off and landing is not allowed.
2. Aircraft which are certificated in accordance with the noise standards of ICAO Annex 16 Chapter 3, for which the margin of the sum of the three certification noise levels, relative to the sum of the three applicable ICAO Annex 16 Chapter 3 certification noise limits, is not more than 5 EPNdB:
  - New operations are not allowed.
  - For aircraft equipped with engines with bypass ratio  $\leq 3$ , take-off and landing is not allowed between 18:00 and 07:59 hr. local time (17:00 – 06:59 UTC for winter season).
  - For aircraft equipped with engines with bypass ratio  $> 3$ , it is not allowed to plan take-offs between 23:00 and 06:59 hr. local time (22:00 – 05:59 UTC for winter season).
3. Aircraft which are certificated in accordance with the noise standards of ICAO Annex 16 Chapter 3, for which the margin of the sum of the three certification noise levels, relative to the sum of the three applicable ICAO Annex 16 Chapter 3 certification noise limits, is more than 5 EPNdB:
  - No restrictions.

It is noted that, if required for noise control purposes, the operating restrictions as specified above may be amended.

### P-RNAV / RNAV-1 requirement for arrivals between 23:00 and 06:30 hr. local time

A P-RNAV / RNAV-1 approval is required for arrivals between 23:00 and 06:30 hr. local time (22:00 – 05:30 UTC for winter season).

#### Note:

The Netherlands requires operational RNAV 1 (P-RNAV) approval for all IFR flights at all times to and from Schiphol per 15 November 2012.

In exceptional cases an exemption with a maximum validity of one year may be granted on request to operators that are unable to meet this operational RNAV 1 (P-RNAV) approval in time due to reasons beyond their control. More information will be announced to operators per AIC.

## Preferred aircraft types

In view of severe noise-related capacity constraints for the night and early morning periods, as well as the need to minimize noise impact on the environment, it is of essential importance that noise of each aircraft movement during night and early morning is as low as possible. Aircraft operators are therefore urged to use the quietest possible aircraft types for night and early morning flights. In addition, in respect of legal limits on aircraft emissions, it is of the utmost importance that aircraft operators use the cleanest possible aircraft for all operations at Amsterdam Airport Schiphol.

It is noted that Amsterdam Airport Schiphol has adopted and will continue to develop a policy to further encourage the use of quieter (and cleaner) aircraft, for instance through its airport charges system which includes reductions and surcharges based on certification noise levels.

## Capacity declaration Amsterdam Airport Schiphol; winter 2011/2012

### Available number of slots

The number of slots available for landing and take-off operations during the winter season 2011/2012 (October 30, 2011 through March 24, 2012) is specified in the table below. The numbers as specified in this table are applicable to Commercial Aviation only. For the winter season, local time equals UTC + 1 hour.

*Available number of slots; winter season 2011/2012  
(October 30, 2011 through March 24, 2012)*

Total number of departure and arrival slots	Maximum number of departure slots in bracket 21:40 – 05:59 UTC	Maximum number of arrival slots in bracket 22:00 – 06:19 UTC
180,000	3,250	7,800

**Note:**

It is allowed to re-allocate in the bracket 21:40 – 04:59 UTC departure slots that were historically allocated in the bracket 05:00 – 05:59 UTC. However, it is not allowed to re-allocate in the bracket 05:00 – 05:59 UTC departure slots that were historically allocated in the bracket 21:40 – 04:59 UTC.

### Distribution of aircraft movements over a twenty-four hours period

For the purpose of this declaration, a distinction is made between departure peaks, arrival peaks, fire breaks, off-peak, early morning and night. This distinction is based on local time and on the operational runway capacity, as will be defined further in this declaration. Fire breaks are a strategic measure for punctuality and reliability purposes, which are intended to create some margin in the planning to be able to cope with operational disturbances.

The following definitions apply:

- Peak:** 06:00 - 20:19 UTC (07:00 - 21:19 LT)
- Off-peak:** 20:20 - 21:59 UTC (21:20 - 22:59 LT)
- Night:** 22:00 - 04:59 UTC (23:00 - 05:59 LT)
- Early morning:** 05:00 - 05:59 UTC (06:00 - 06:59 LT)
- Fire break:** A single 20 or 30 minutes block immediately following a departure peak as well as immediately preceding an arrival peak, thus separating that particular arrival peak from the preceding departure peak. The duration of the fire breaks should be 20 minutes, except for the first fire break of each day which should have 30 minutes duration.



## Operational runway capacity

For slot allocation purposes, the operational runway capacity for the winter season 2011/2012 has been determined as follows:

Arrival peaks:	106 IFR movements per hour (three 20 minutes blocks), with a maximum of 68 arrivals and 38 departures. The movements should be evenly distributed over the 20 minutes blocks.
Departure peaks:	110 IFR movements per hour (three 20 minutes blocks), with a maximum of 74 departures and 36 arrivals. The movements should be evenly distributed over the 20 minutes blocks.
Off-peak:	75 IFR movements per hour, with a maximum of 35 arrivals and 40 departures.
Night:	49 IFR movements per hour, with a maximum of 24 arrivals and 25 departures.
Early morning:	55 IFR movements per hour, with a maximum of 25 arrivals and 30 departures.

For slot allocation purposes, an operational runway capacity of 12 arrivals and 13 departures per 20 minutes should be assumed during each 20 minutes fire break (18 arrivals and 20 departures for the 30 minutes fire break).

Coordination will in principle be based on static clock hours and during the period 07:00 – 23:00 LT on 20 minutes intervals, except for the 30 minutes fire break and the adjacent time bracket. In view of expected cancellations, the number of allocated slots for any 20 minutes interval may exceed the specified operational runway capacity by 2 movements, however, the maximum number of arrivals and departures should not be exceeded on a historical basis.

## Additional requirements and conditions

1. Arrival and departure peaks should not overlap.
2. To facilitate a smooth handling of traffic, fire breaks should be planned between all transitions from departure to arrival peak. In the 20 minutes blocks where fire breaks should be planned (or 30 minutes block for the first fire break of the day) and have not yet been completely realized, new slots should not be allocated. In addition, cancelled slots should not be re-allocated in these blocks until the required fire breaks are fully incorporated.

## Supplemental information

In addition to the capacity limitations, aircraft operators should take into account that the operating restrictions as specified below are effective at Amsterdam Airport Schiphol.

### Operating restrictions based on certificated noise levels

1. Aircraft which are certificated in accordance with the noise standards of ICAO Annex 16 Chapter 2:
  - Take-off and landing is not allowed.
2. Aircraft which are certificated in accordance with the noise standards of ICAO Annex 16 Chapter 3, for which the margin of the sum of the three certification noise levels, relative to the sum of the three applicable ICAO Annex 16 Chapter 3 certification noise limits, is not more than 5 EPNdB:
  - New operations are not allowed.
  - For aircraft equipped with engines with bypass ratio  $\leq 3$ , take-off and landing is not allowed between 18:00 and 07:59 hr. local time (17:00 – 06:59 UTC for winter season).
  - For aircraft equipped with engines with bypass ratio  $> 3$ , it is not allowed to plan take-offs between 23:00 and 06:59 hr. local time (22:00 – 05:59 UTC for winter season).
3. Aircraft which are certificated in accordance with the noise standards of ICAO Annex 16 Chapter 3, for which the margin of the sum of the three certification noise levels, relative to the sum of the three applicable ICAO Annex 16 Chapter 3 certification noise limits, is more than 5 EPNdB:
  - No restrictions.

It is noted that, if required for noise control purposes, the operating restrictions as specified above may be amended.

### P-RNAV / RNAV-1 requirement for arrivals between 23:00 and 06:30 hr. local time

A P-RNAV / RNAV-1 approval is required for arrivals between 23:00 and 06:30 hr. local time (22:00 – 05:30 UTC for winter season).

#### Note:

The Netherlands requires operational RNAV 1 (P-RNAV) approval for all IFR flights at all times to and from Schiphol per 15 November 2012.

In exceptional cases an exemption with a maximum validity of one year may be granted on request to operators that are unable to meet this operational RNAV 1 (P-RNAV) approval in time due to reasons beyond their control. More information will be announced to operators per AIC.

## Preferred aircraft types

In view of severe noise-related capacity constraints for the night and early morning periods, as well as the need to minimize noise impact on the environment, it is of essential importance that noise of each aircraft movement during night and early morning is as low as possible. Aircraft operators are therefore urged to use the quietest possible aircraft types for night and early morning flights. In addition, in respect of legal limits on aircraft emissions, it is of the utmost importance that aircraft operators use the cleanest possible aircraft for all operations at Amsterdam Airport Schiphol.

It is noted that Amsterdam Airport Schiphol has adopted and will continue to develop a policy to further encourage the use of quieter (and cleaner) aircraft, for instance through its airport charges system which includes reductions and surcharges based on certification noise levels.

## Capacity declaration Amsterdam Airport Schiphol; summer 2012

### Available number of slots

The number of slots available for landing and take-off operations during the summer season 2012 (March 25, 2012 through October 27, 2012) is specified in the table below. The numbers as specified in this table are applicable to Commercial Aviation only. For the summer season, local time equals UTC + 2 hours.

*Available number of slots; summer season 2012  
(March 25, 2012 through October 27, 2012)*

Total number of departure and arrival slots	Maximum number of departure slots in bracket 20:40 – 04:59 UTC	Maximum number of arrival slots in bracket 21:00 – 05:19 UTC
285,000	8,980	14,590

**Note:**

It is allowed to re-allocate in the bracket 20:40 – 03:59 UTC departure slots that were historically allocated in the bracket 04:00 – 04:59 UTC. However, it is not allowed to re-allocate in the bracket 04:00 – 04:59 UTC departure slots that were historically allocated in the bracket 20:40 – 03:59 UTC.

### Distribution of aircraft movements over a twenty-four hours period

For the purpose of this declaration, a distinction is made between departure peaks, arrival peaks, fire breaks, off-peak, early morning and night. This distinction is based on local time and on the operational runway capacity, as will be defined further in this declaration. Fire breaks are a strategic measure for punctuality and reliability purposes, which are intended to create some margin in the planning to be able to cope with operational disturbances.

The following definitions apply:

- Peak: 05:00 - 19:19 UTC (07:00 - 21:19 LT)
- Off-peak: 19:20 - 20:59 UTC (21:20 - 22:59 LT)
- Night: 21:00 - 03:59 UTC (23:00 - 05:59 LT)
- Early morning: 04:00 - 04:59 UTC (06:00 - 06:59 LT)
- Fire break: A single 20 or 30 minutes block immediately following a departure peak as well as immediately preceding an arrival peak, thus separating that particular arrival peak from the preceding departure peak. The duration of the fire breaks should be 20 minutes, except for the first fire break of each day which should have 30 minutes duration.



## Operational runway capacity

For slot allocation purposes, the operational runway capacity for the summer season 2012 has been determined as follows:

Arrival peaks:	106 IFR movements per hour (three 20 minutes blocks), with a maximum of 68 arrivals and 38 departures. The movements should be evenly distributed over the 20 minutes blocks.
Departure peaks:	110 IFR movements per hour (three 20 minutes blocks), with a maximum of 74 departures and 36 arrivals. The movements should be evenly distributed over the 20 minutes blocks.
Off-peak:	75 IFR movements per hour, with a maximum of 35 arrivals and 40 departures.
Night:	49 IFR movements per hour, with a maximum of 24 arrivals and 25 departures.
Early morning:	55 IFR movements per hour, with a maximum of 25 arrivals and 30 departures.

For slot allocation purposes, an operational runway capacity of 12 arrivals and 13 departures per 20 minutes should be assumed during each 20 minutes fire break (18 arrivals and 20 departures for the 30 minutes fire break).

Coordination will in principle be based on static clock hours and during the period 07:00 – 23:00 LT on 20 minutes intervals, except for the 30 minutes fire break and the adjacent time bracket. In view of expected cancellations, the number of allocated slots for any 20 minutes interval may exceed the specified operational runway capacity by 2 movements, however, the maximum number of arrivals and departures should not be exceeded on a historical basis.

## Additional requirements and conditions

1. This declaration for summer 2012 is based on an assumed number of 180,000 movements during the winter season 2011/2012 (October 30, 2011 through March 24, 2012), in accordance with the capacity declaration for winter 2011/2012. A possible higher or lower number of used slots in said period should be subtracted from, respectively added to the 285,000 slots available for summer 2012. Likewise, if for winter 2011/2012 less night and/or early morning slots have been used than the maximum numbers as specified in the capacity declaration for winter 2011/2012, these unused slots can be added to the pool of night and early morning slots for summer 2012. However, such additional night and early morning slots originating from winter 2011/2012 should be allocated in summer 2012 on a non-historic basis only.  
It is noted that for the purpose of the above provision, night and early morning slots imply departure slots in the bracket 22:40 – 06:59 LT (winter 21:40 – 05:59 UTC; summer 20:40 – 04:59 UTC) and arrival slots in the bracket 23:00 – 07:19 LT (winter 22:00 – 06:19 UTC; summer 21:00 – 05:19 UTC).
2. Arrival and departure peaks should not overlap.
3. To facilitate a smooth handling of traffic, fire breaks should be planned between all transitions from departure to arrival peak. In the 20 minutes blocks where fire breaks should be planned (or 30 minutes block for the first fire break of the day) and have not yet been completely realized, new slots should not be allocated. In addition, cancelled slots should not be re-allocated in these blocks until the required fire breaks are fully incorporated.



## Supplemental information

In addition to the capacity limitations, aircraft operators should take into account that the operating restrictions as specified below are effective at Amsterdam Airport Schiphol.

### Operating restrictions based on certificated noise levels

1. Aircraft which are certificated in accordance with the noise standards of ICAO Annex 16 Chapter 2:
  - Take-off and landing is not allowed.
2. Aircraft which are certificated in accordance with the noise standards of ICAO Annex 16 Chapter 3, for which the margin of the sum of the three certification noise levels, relative to the sum of the three applicable ICAO Annex 16 Chapter 3 certification noise limits, is not more than 5 EPNdB:
  - New operations are not allowed.
  - For aircraft equipped with engines with bypass ratio  $\leq 3$ , take-off and landing is not allowed between 18:00 and 07:59 hr. local time (16:00 – 05:59 UTC for summer season).
  - For aircraft equipped with engines with bypass ratio  $> 3$ , it is not allowed to plan take-offs between 23:00 and 06:59 hr. local time (21:00 – 04:59 UTC for summer season).
3. Aircraft which are certificated in accordance with the noise standards of ICAO Annex 16 Chapter 3, for which the margin of the sum of the three certification noise levels, relative to the sum of the three applicable ICAO Annex 16 Chapter 3 certification noise limits, is more than 5 EPNdB:
  - No restrictions.

It is noted that, if required for noise control purposes, the operating restrictions as specified above may be amended.

### P-RNAV / RNAV-1 requirement for arrivals between 23:00 and 06:30 hr. local time

A P-RNAV / RNAV-1 approval is required for arrivals between 23:00 and 06:30 hr. local time (21:00 – 04:30 UTC for summer season).

#### Note:

The Netherlands requires operational RNAV 1 (P-RNAV) approval for all IFR flights at all times to and from Schiphol per 15 November 2012.

In exceptional cases an exemption with a maximum validity of one year may be granted on request to operators that are unable to meet this operational RNAV 1 (P-RNAV) approval in time due to reasons beyond their control. More information will be announced to operators per AIC.

## Preferred aircraft types

In view of severe noise-related capacity constraints for the night and early morning periods, as well as the need to minimize noise impact on the environment, it is of essential importance that noise of each aircraft movement during night and early morning is as low as possible. Aircraft operators are therefore urged to use the quietest possible aircraft types for night and early morning flights. In addition, in respect of legal limits on aircraft emissions, it is of the utmost importance that aircraft operators use the cleanest possible aircraft for all operations at Amsterdam Airport Schiphol.

It is noted that Amsterdam Airport Schiphol has adopted and will continue to develop a policy to further encourage the use of quieter (and cleaner) aircraft, for instance through its airport charges system which includes reductions and surcharges based on certification noise levels.

## Capacity declaration Amsterdam Airport Schiphol; winter 2012/2013

### Available number of slots

The number of slots available for landing and take-off operations during the winter season 2012/2013 (October 28, 2012 through March 30, 2013) is specified in the table below. The numbers as specified in this table are applicable to Commercial Aviation only. For the winter season, local time equals UTC + 1 hour.

*Available number of slots; winter season 2012/2013  
(October 28, 2012 through March 30, 2013)*

Total number of departure and arrival slots	Maximum number of departure slots in bracket 21:40 – 05:59 UTC	Maximum number of arrival slots in bracket 22:00 – 06:19 UTC
188,600	3,400	8,150

**Note:**

It is allowed to re-allocate in the bracket 21:40 – 04:59 UTC departure slots that were historically allocated in the bracket 05:00 – 05:59 UTC. However, it is not allowed to re-allocate in the bracket 05:00 – 05:59 UTC departure slots that were historically allocated in the bracket 21:40 – 04:59 UTC.

### Distribution of aircraft movements over a twenty-four hours period

For the purpose of this declaration, a distinction is made between departure peaks, arrival peaks, fire breaks, off-peak, early morning and night. This distinction is based on local time and on the operational runway capacity, as will be defined further in this declaration. Fire breaks are a strategic measure for punctuality and reliability purposes, which are intended to create some margin in the planning to be able to cope with operational disturbances.

The following definitions apply:

Peak:	06:00 - 20:19 UTC (07:00 - 21:19 LT)
Off-peak:	20:20 - 21:59 UTC (21:20 - 22:59 LT)
Night:	22:00 - 04:59 UTC (23:00 - 05:59 LT)
Early morning:	05:00 - 05:59 UTC (06:00 - 06:59 LT)
Fire break:	A single 20 or 30 minutes block immediately following a departure peak as well as immediately preceding an arrival peak, thus separating that particular arrival peak from the preceding departure peak. The duration of the fire breaks should be 20 minutes, except for the first fire break of each day which should have 30 minutes duration.

## Operational runway capacity

For slot allocation purposes, the operational runway capacity for the winter season 2012/2013 has been determined as follows:

Arrival peaks:	106 IFR movements per hour (three 20 minutes blocks), with a maximum of 68 arrivals and 38 departures. The movements should be evenly distributed over the 20 minutes blocks.
Departure peaks:	110 IFR movements per hour (three 20 minutes blocks), with a maximum of 74 departures and 36 arrivals. The movements should be evenly distributed over the 20 minutes blocks.
Off-peak:	75 IFR movements per hour, with a maximum of 35 arrivals and 40 departures.
Night:	49 IFR movements per hour, with a maximum of 24 arrivals and 25 departures.
Early morning:	55 IFR movements per hour, with a maximum of 25 arrivals and 30 departures.

For slot allocation purposes, an operational runway capacity of 12 arrivals and 13 departures per 20 minutes should be assumed during each 20 minutes fire break (18 arrivals and 20 departures for the 30 minutes fire break).

Coordination will in principle be based on static clock hours and during the period 07:00 – 23:00 LT on 20 minutes intervals, except for the 30 minutes fire break and the adjacent time bracket. In view of expected cancellations, the number of allocated slots for any 20 minutes interval may exceed the specified operational runway capacity by 2 movements, however, the maximum number of arrivals and departures should not be exceeded on a historical basis.

## Additional requirements and conditions

1. Arrival and departure peaks should not overlap.
2. To facilitate a smooth handling of traffic, fire breaks should be planned between all transitions from departure to arrival peak. In the 20 minutes blocks where fire breaks should be planned (or 30 minutes block for the first fire break of the day) and have not yet been completely realized, new slots should not be allocated. In addition, cancelled slots should not be re-allocated in these blocks until the required fire breaks are fully incorporated.

## Supplemental information

In addition to the capacity limitations, aircraft operators should take into account that the operating restrictions as specified below are effective at Amsterdam Airport Schiphol.

### Operating restrictions based on certificated noise levels

1. Aircraft which are certificated in accordance with the noise standards of ICAO Annex 16 Chapter 2:
  - Take-off and landing is not allowed.
2. Aircraft which are certificated in accordance with the noise standards of ICAO Annex 16 Chapter 3, for which the margin of the sum of the three certification noise levels, relative to the sum of the three applicable ICAO Annex 16 Chapter 3 certification noise limits, is not more than 5 EPNdB:
  - New operations are not allowed.
  - For aircraft equipped with engines with bypass ratio  $\leq 3$ , take-off and landing is not allowed between 18:00 and 07:59 hr. local time (17:00 – 06:59 UTC for winter season).
  - For aircraft equipped with engines with bypass ratio  $> 3$ , it is not allowed to plan take-offs between 23:00 and 06:59 hr. local time (22:00 – 05:59 UTC for winter season).
3. Aircraft which are certificated in accordance with the noise standards of ICAO Annex 16 Chapter 3, for which the margin of the sum of the three certification noise levels, relative to the sum of the three applicable ICAO Annex 16 Chapter 3 certification noise limits, is more than 5 EPNdB:
  - No restrictions.

It is noted that, if required for noise control purposes, the operating restrictions as specified above may be amended.

### RNAV 1 (P-RNAV) requirement for all flights to and from Schiphol

As from 15 November 2012 the Netherlands requires operational RNAV 1 (P-RNAV) approval for all IFR flights at all times to and from Schiphol.

In exceptional cases an exemption with a maximum validity of one year may be granted on request to operators that are unable to meet this operational RNAV 1 (P-RNAV) approval in time due to reasons beyond their control. More information will be announced to operators per AIC.

## Preferred aircraft types

In view of severe noise-related capacity constraints for the night and early morning periods, as well as the need to minimize noise impact on the environment, it is of essential importance that noise of each aircraft movement during night and early morning is as low as possible. Aircraft operators are therefore urged to use the quietest possible aircraft types for night and early morning flights. In addition, in respect of legal limits on aircraft emissions, it is of the utmost importance that aircraft operators use the cleanest possible aircraft for all operations at Amsterdam Airport Schiphol.

It is noted that Amsterdam Airport Schiphol has adopted and will continue to develop a policy to further encourage the use of quieter (and cleaner) aircraft, for instance through its airport charges system which includes reductions and surcharges based on certification noise levels.



## Capacity declaration Amsterdam Airport Schiphol; summer 2013

### Available number of slots

The number of slots available for landing and take-off operations during the summer season 2013 (March 31, 2013 through October 26, 2013) is specified in the table below. The numbers as specified in this table are applicable to Commercial Aviation only. For the summer season, local time equals UTC + 2 hours.

*Available number of slots; summer season 2013  
(March 31, 2013 through October 26, 2013)*

Total number of departure and arrival slots	Maximum number of departure slots in bracket 20:40 – 04:59 UTC	Maximum number of arrival slots in bracket 21:00 – 05:19 UTC
275,800	8,690	14,120

**Note:**

It is allowed to re-allocate in the bracket 20:40 – 03:59 UTC departure slots that were historically allocated in the bracket 04:00 – 04:59 UTC. However, it is not allowed to re-allocate in the bracket 04:00 – 04:59 UTC departure slots that were historically allocated in the bracket 20:40 – 03:59 UTC.

### Distribution of aircraft movements over a twenty-four hours period

For the purpose of this declaration, a distinction is made between departure peaks, arrival peaks, fire breaks, off-peak, early morning and night. This distinction is based on local time and on the operational runway capacity, as will be defined further in this declaration. Fire breaks are a strategic measure for punctuality and reliability purposes, which are intended to create some margin in the planning to be able to cope with operational disturbances.

The following definitions apply:

- Peak:** 05:00 - 19:19 UTC (07:00 - 21:19 LT)
- Off-peak:** 19:20 - 20:59 UTC (21:20 - 22:59 LT)
- Night:** 21:00 - 03:59 UTC (23:00 - 05:59 LT)
- Early morning:** 04:00 - 04:59 UTC (06:00 - 06:59 LT)
- Fire break:** A single 20 or 30 minutes block immediately following a departure peak as well as immediately preceding an arrival peak, thus separating that particular arrival peak from the preceding departure peak. The duration of the fire breaks should be 20 minutes, except for the first fire break of each day which should have 30 minutes duration.

## Operational runway capacity

For slot allocation purposes, the operational runway capacity for the summer season 2013 has been determined as follows:

Arrival peaks:	106 IFR movements per hour (three 20 minutes blocks), with a maximum of 68 arrivals and 38 departures. The movements should be evenly distributed over the 20 minutes blocks.
Departure peaks:	110 IFR movements per hour (three 20 minutes blocks), with a maximum of 74 departures and 36 arrivals. The movements should be evenly distributed over the 20 minutes blocks.
Off-peak:	75 IFR movements per hour, with a maximum of 35 arrivals and 40 departures.
Night:	49 IFR movements per hour, with a maximum of 24 arrivals and 25 departures.
Early morning:	55 IFR movements per hour, with a maximum of 25 arrivals and 30 departures.

For slot allocation purposes, an operational runway capacity of 12 arrivals and 13 departures per 20 minutes should be assumed during each 20 minutes fire break (18 arrivals and 20 departures for the 30 minutes fire break).

Coordination will in principle be based on static clock hours and during the period 07:00 – 23:00 LT on 20 minutes intervals, except for the 30 minutes fire break and the adjacent time bracket. In view of expected cancellations, the number of allocated slots for any 20 minutes interval may exceed the specified operational runway capacity by 2 movements, however, the maximum number of arrivals and departures should not be exceeded on a historical basis.

## Additional requirements and conditions

1. This declaration for summer 2013 is based on an assumed number of 188,600 movements during the winter season 2012/2013 (October 28, 2012 through March 30, 2013), in accordance with the capacity declaration for winter 2012/2013. A possible higher or lower number of used slots in said period should be subtracted from, respectively added to the 275,800 slots available for summer 2013. Likewise, if for winter 2012/2013 less night and/or early morning slots have been used than the maximum numbers as specified in the capacity declaration for winter 2012/2013, these unused slots can be added to the pool of night and early morning slots for summer 2013. However, such additional night and early morning slots originating from winter 2012/2013 should be allocated in summer 2013 on a non-historic basis only. It is noted that for the purpose of the above provision, night and early morning slots imply departure slots in the bracket 22:40 – 06:59 LT (winter 21:40 – 05:59 UTC; summer 20:40 – 04:59 UTC) and arrival slots in the bracket 23:00 – 07:19 LT (winter 22:00 – 06:19 UTC; summer 21:00 – 05:19 UTC).
2. Arrival and departure peaks should not overlap.
3. To facilitate a smooth handling of traffic, fire breaks should be planned between all transitions from departure to arrival peak. In the 20 minutes blocks where fire breaks should be planned (or 30 minutes block for the first fire break of the day) and have not yet been completely realized, new slots should not be allocated. In addition, cancelled slots should not be re-allocated in these blocks until the required fire breaks are fully incorporated.
4. Amsterdam Airport Schiphol is facing temporary additional environmental restrictions in order to compensate for delayed implementation of CDAs. Due to these temporary restrictions, the current maximum number of 32,000 night movements (as agreed as part of the agreed package deal at the "Tafel van Alders Schiphol"), is expected to be further reduced to a maximum of 29,000 night movements within a maximum of three years' time.

In order to achieve the down sizing of night movements, the slot coordinator shall not allocate new historic night slots, or re-allocate night slots that were returned to the slot pool (status start of next season), for the night<sup>1</sup> and early morning<sup>2</sup> periods. This means that when xxx historic night slots are returned in year 1, the capacity declaration for the equivalent season in year 2 will be the former declared capacity minus xxx. The system however does not provide a basis to down size the maximum amount of night movements further than 29,000 night movements, i.e. after the three years period the airline sector will be allowed to operate a maximum amount of 29,000 night movements.

The declared night capacity (totally 22,810 slots) as mentioned on page 1 under 'Available number of slots' will be reduced automatically as soon as / the moment that historic night slots are returned to the slot coordinator. Returned historic departure slots will be deducted from the maximum number of departure slots, returned historic arrival slots will be deducted from the maximum number of arrival slots.

Non-historic (night) slots are allocated in order to make optimal use of capacity. Due to the aforementioned reduction in three years time to 29,000 movements, non historic night slots - allocated at the slot return date - that are not operated in the current season, will not be reallocated in the next equivalent season.

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<sup>1</sup> Night: for definition see page 1 under 'Distribution of aircraft movements over a twenty-four hours period'.

<sup>2</sup> Early Morning: for definition see page 1 under 'Distribution of aircraft movements over a twenty-four hours period'.



## Supplemental information

In addition to the capacity limitations, aircraft operators should take into account that the operating restrictions as specified below are effective at Amsterdam Airport Schiphol.

### Operating restrictions based on certificated noise levels

1. Aircraft which are certificated in accordance with the noise standards of ICAO Annex 16 Chapter 2:
  - Take-off and landing is not allowed.
2. Aircraft which are certificated in accordance with the noise standards of ICAO Annex 16 Chapter 3, for which the margin of the sum of the three certification noise levels, relative to the sum of the three applicable ICAO Annex 16 Chapter 3 certification noise limits, is not more than 5 EPNdB:
  - New operations are not allowed.
  - For aircraft equipped with engines with bypass ratio  $\leq 3$ , take-off and landing is not allowed between 18:00 and 07:59 hr. local time (16:00 – 05:59 UTC for summer season).
  - For aircraft equipped with engines with bypass ratio  $> 3$ , it is not allowed to plan take-offs between 23:00 and 06:59 hr. local time (21:00 – 04:59 UTC for summer season).
3. Aircraft which are certificated in accordance with the noise standards of ICAO Annex 16 Chapter 3, for which the margin of the sum of the three certification noise levels, relative to the sum of the three applicable ICAO Annex 16 Chapter 3 certification noise limits, is more than 5 EPNdB:
  - No restrictions.

It is noted that, if required for noise control purposes, the operating restrictions as specified above may be amended.

### RNAV 1 (P-RNAV) requirement for all flights to and from Schiphol

As from 15 November 2012 the Netherlands requires operational RNAV 1 (P-RNAV) approval for all IFR flights at all times to and from Schiphol.

In exceptional cases an exemption with a maximum validity of one year may be granted on request to operators that are unable to meet this operational RNAV 1 (P-RNAV) approval in time due to reasons beyond their control. More information will be announced to operators per AIC.

## Preferred aircraft types

In view of severe noise-related capacity constraints for the night and early morning periods, as well as the need to minimize noise impact on the environment, it is of essential importance that noise of each aircraft movement during night and early morning is as low as possible. Aircraft operators are therefore urged to use the quietest possible aircraft types for night and early morning flights. In addition, in respect of legal limits on aircraft emissions, it is of the utmost importance that aircraft operators use the cleanest possible aircraft for all operations at Amsterdam Airport Schiphol.

It is noted that Amsterdam Airport Schiphol has adopted and will continue to develop a policy to further encourage the use of quieter (and cleaner) aircraft, for instance through its airport charges system which includes reductions and surcharges based on certification noise levels.



Mr. A.P.J.M. Rutten  
Executive Vice President & COO



Stichting Airport Coordination Netherlands  
For the attention of Ms C. Ditvoorst  
Evert van de Beekstraat 23  
1118 CL LUCHTHAVEN SCHIPHOL

Inspectie Leefomgeving en Transport	
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registrnr:	ILT-2013/18006
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Behandelaar:	ILT/IV/V
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Your letter of

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Schiphol,

May 6, 2013

**SUBJECT** Capacity declaration winter season 2013/2014

Dear Ms Ditvoorst,

Please find enclosed the capacity declaration for the winter season 2013/2014. We trust that you will allocate the slots for the next winter season to the airlines in accordance with the limitations and requirements as specified in this capacity declaration, taking into account the additional considerations as explained below. The enclosed capacity declaration is applicable to Commercial Aviation only. For the coordination of General Aviation separate procedures have been established.

In view of the tension between environmental impact, punctuality and capacity, the capacity declaration includes a number of guidelines which are intended to achieve a desirable and balanced distribution of aircraft movements over the 24 hours period. You are requested to allocate slots in accordance with these guidelines, as far as practically possible.

In the allocation of slots it has been common practice to take into consideration that a certain percentage of the operations for which a slot has been allocated, will eventually not be realized. This gives the possibility to accommodate requests of airlines as much as possible, without resulting in a realization that exceeds the limitations of the capacity declaration. You are requested to take expected cancellations into account in the allocation of slots for winter 2013/2014 and inform us of the results of the slot allocation process after the IATA Slots Conference.

Possible effects of experiments with operational measures to reduce noise annoyance have not been taken into account in the capacity declaration. It is assumed that, if necessary, Amsterdam Airport Schiphol will request the Ministry of Infrastructure and the Environment for appropriate arrangements to compensate possible effects of such experiments on the distribution of the noise load around the airport, in order to avoid adverse effects on the yearly capacity. It is also assumed that possible major maintenance of the runway system can be performed without affecting the yearly or hourly capacity. To this end, a request for exemption of legal noise limits or rules for the use of runways may be submitted by Amsterdam Airport Schiphol to the Ministry of Infrastructure and the Environment.

Due to the delayed implementation of Continuous Descent Approaches (CDAs), it was agreed at the 'Tafel van Alders Schiphol' that the aviation sector will take additional measures to compensate for the effects of this delay on the noise impact. One of these measures concerns a

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ABN-AMRO Bank NV nr 54.56 10.478 ABN-AMRO Bank NV nr 48.67.49.304 ING Bank nr 69.76.60.729

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Date

May 6, 2013

temporary limitation of the number of aircraft movements during the night and early morning to a maximum of 29,000 per year, which is to be achieved over a period of three years. The airlines represented in BARIN have agreed on the main principles of the way in which said limitation of the number of night and early morning movements is to be accomplished. In the enclosed capacity declaration a number of provisions is included to effectuate a reduction of the number of aircraft movements during the night and early morning. These provisions are essentially the same as those that were introduced in the capacity declaration for summer 2013. In addition, based on the actual use of historic slots, the number of slots available for the night and early morning were decreased by 125 as compared to the previous winter, in line with the agreed steps to achieve the required reduction.

The capacity declaration for winter 2013/2014 has been endorsed by the 'Operationeel Schiphol Overleg' (Operational Management Committee Schiphol), in accordance with the agreements as laid down in the 'Convenant Luchtvaartsector' (Covenant Aviation Sector) of 26 June 2003 and the 'Besluit Slotallocatie' (Decree Slot Allocation).

As agreed, SACN will communicate the capacity declaration and the resulting so-called runway graphs (or similar information) to the airlines through publication on its web site.

A copy of this letter will be sent to the Ministry of Infrastructure and the Environment, the 'Commissie Regionaal Overleg Luchthaven Schiphol' (Regional Consultation Committee Schiphol), LVNL (Air Traffic Control the Netherlands), the Schiphol Airline Operators Committee, the Board of Airline Representatives in the Netherlands, the airlines KLM, Martinair, Transavia, ArkeFly and Corendon Dutch Airlines, as well as the Coordination Committee Netherlands and the associated Scheduling and Slot Performance Committee.

5.1.2e

Yours sincerely, on behalf of the aviation sector  
SCHIPHOL

5.1.2e

Ad Rutten  
Executive Vice President & Chief Operations Officer

Enclosure: Capacity declaration Amsterdam Airport Schiphol; winter 2013/2014

Page number:

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Date:

May 6, 2013

Copies to:

- Members 'Operationeel Schiphol Overleg'
- Members 'E<sup>2</sup>MC'
- 'Commissie Regionaal Overleg luchthaven Schiphol'
- Ministry of Infrastructure and the Environment:
  - State Secretary – Ms W.J. Mansveld
  - Directorate-General for Mobility and Transport:

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- Human Environment and Transport Inspectorate:

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- LVNL:

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- SAOC: 5.1.2e

- BARIN: 5.1.2e

- KLM:

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- Martinair:

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- Transavia:

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- ArkeFly: 5.1.2e

- Corendon Dutch Airlines:

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- Coordination Committee Netherlands:

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- Scheduling and Slot Performance Committee:

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## Capacity declaration Amsterdam Airport Schiphol; winter 2013/2014

### Available number of slots

The number of slots available for landing and take-off operations during the winter season 2013/2014 (October 27, 2013 through March 29, 2014) is specified in the table below. The numbers as specified in this table are applicable to Commercial Aviation only. For the winter season, local time equals UTC + 1 hour.

*Available number of slots; winter season 2013/2014  
(October 27, 2013 through March 29, 2014)*

Total number of departure and arrival slots	Maximum number of departure slots in bracket 21:40 – 05:59 UTC	Maximum number of arrival slots in bracket 22:00 – 06:19 UTC
188,600	3,325	8,100

**Note:**

It is allowed to re-allocate in the bracket 21:40 – 04:59 UTC departure slots that were historically allocated in the bracket 05:00 – 05:59 UTC. However, it is not allowed to re-allocate in the bracket 05:00 – 05:59 UTC departure slots that were historically allocated in the bracket 21:40 – 04:59 UTC.

### Distribution of aircraft movements over a twenty-four hours period

For the purpose of this declaration, a distinction is made between departure peaks, arrival peaks, fire breaks, off-peak, early morning and night. This distinction is based on local time and on the operational runway capacity, as will be defined further in this declaration. Fire breaks are a strategic measure for punctuality and reliability purposes, which are intended to create some margin in the planning to be able to cope with operational disturbances.

The following definitions apply:

Peak:	06:00 – 20:19 UTC (07:00 – 21:19 LT)
Off-peak:	20:20 – 21:59 UTC (21:20 – 22:59 LT)
Night:	22:00 – 04:59 UTC (23:00 – 05:59 LT)
Early morning:	05:00 – 05:59 UTC (06:00 – 06:59 LT)
Fire break:	A single 20 or 30 minutes block immediately following a departure peak as well as immediately preceding an arrival peak, thus separating that particular arrival peak from the preceding departure peak. The duration of the fire breaks should be 20 minutes, except for the first fire break of each day which should have 30 minutes duration.



## Operational runway capacity

For slot allocation purposes, the operational runway capacity for the winter season 2012/2013 has been determined as follows:

Arrival peaks:	106 IFR movements per hour (three 20 minutes blocks), with a maximum of 68 arrivals and 38 departures. The movements should be evenly distributed over the 20 minutes blocks.
Departure peaks:	110 IFR movements per hour (three 20 minutes blocks), with a maximum of 74 departures and 36 arrivals. The movements should be evenly distributed over the 20 minutes blocks.
Off-peak:	75 IFR movements per hour, with a maximum of 35 arrivals and 40 departures.
Night:	49 IFR movements per hour, with a maximum of 24 arrivals and 25 departures.
Early morning:	55 IFR movements per hour, with a maximum of 25 arrivals and 30 departures.

For slot allocation purposes, an operational runway capacity of 12 arrivals and 13 departures per 20 minutes should be assumed during each 20 minutes fire break (18 arrivals and 20 departures for the 30 minutes fire break).

Coordination will in principle be based on static clock hours and during the period 07:00 – 23:00 LT on 20 minutes intervals, except for the 30 minutes fire break and the adjacent time bracket. In view of expected cancellations, the number of allocated slots for any 20 minutes interval may exceed the specified operational runway capacity by 2 movements, however, the maximum number of arrivals and departures should not be exceeded on a historical basis.

## Additional requirements and conditions

1. Arrival and departure peaks should not overlap.
2. To facilitate a smooth handling of traffic, fire breaks should be planned between all transitions from departure to arrival peak. In the 20 minutes blocks where fire breaks should be planned (or 30 minutes block for the first fire break of the day) and have not yet been completely realized, new slots should not be allocated. In addition, cancelled slots should not be re-allocated in these blocks until the required fire breaks are fully incorporated.
3. Amsterdam Airport Schiphol is facing temporary additional environmental restrictions in order to compensate for delayed implementation of CDAs. Due to these temporary restrictions, the current maximum number of 32,000 night movements (as agreed as part of the agreed package deal at the "Tafel van Alders Schiphol"), is expected to be further reduced to a maximum of 29,000 night movements within a maximum of three years' time.

In order to achieve the down sizing of night movements, the slot coordinator shall not allocate new historic night slots, or re-allocate night slots that were returned to the slot pool (status start of next season), for the night<sup>1</sup> and early morning<sup>2</sup> periods. This means that when xxx historic night slots are returned in year 1, the capacity declaration for the equivalent season in year 2 will be the former declared capacity minus xxx. The system however does not provide a basis to down size the maximum amount of night movements further than 29,000 night movements, i.e. after the three years period the airline sector will be allowed to operate a maximum amount of 29,000 night movements.

<sup>1</sup> Night: for definition see page 1 under 'Distribution of aircraft movements over a twenty-four hours period'.

<sup>2</sup> Early Morning: for definition see page 1 under 'Distribution of aircraft movements over a twenty-four hours period'.

The declared night capacity (totally 11,425 slots) as mentioned on page 1 under 'Available number of slots' will be reduced automatically as soon as / the moment that historic night slots are returned to the slot coordinator. Returned historic departure slots will be deducted from the maximum number of departure slots, returned historic arrival slots will be deducted from the maximum number of arrival slots.

Non-historic (night) slots are allocated in order to make optimal use of capacity. Due to the aforementioned reduction in three years time to 29,000 movements, non-historic night slots - allocated at the slot return date - that are not operated in the current season, will not be re-allocated in the next equivalent season.

## Supplemental information

In addition to the capacity limitations, aircraft operators should take into account that the operating restrictions as specified below are effective at Amsterdam Airport Schiphol.

### Operating restrictions based on certificated noise levels

1. Aircraft which are certificated in accordance with the noise standards of ICAO Annex 16 Chapter 2:
  - Take-off and landing is not allowed.
2. Aircraft which are certificated in accordance with the noise standards of ICAO Annex 16 Chapter 3, for which the margin of the sum of the three certification noise levels, relative to the sum of the three applicable ICAO Annex 16 Chapter 3 certification noise limits, is not more than 5 EPNdB:
  - New operations are not allowed.
  - For aircraft equipped with engines with bypass ratio  $\leq 3$ , take-off and landing is not allowed between 18:00 and 07:59 hr. local time (17:00 – 06:59 UTC for winter season).
  - For aircraft equipped with engines with bypass ratio  $> 3$ , it is not allowed to plan take-offs between 23:00 and 06:59 hr. local time (22:00 – 05:59 UTC for winter season).
3. Aircraft which are certificated in accordance with the noise standards of ICAO Annex 16 Chapter 3, for which the margin of the sum of the three certification noise levels, relative to the sum of the three applicable ICAO Annex 16 Chapter 3 certification noise limits, is more than 5 EPNdB:
  - No restrictions.

It is noted that, if required for noise control purposes, the operating restrictions as specified above may be amended.

### RNAV 1 (P-RNAV) requirement for all flights to and from Schiphol

As from 15 November 2012 the Netherlands requires operational RNAV 1 (P-RNAV) approval for all IFR flights at all times to and from Schiphol.

In exceptional cases a temporary exemption may be granted on request to operators that are unable to meet this operational RNAV 1 (P-RNAV) approval in time due to reasons beyond their control; this option is limited until 14 November 2013. More information can be found in AIC-A 02/11, 19 MAY 11.

## Preferred aircraft types

In view of severe noise-related capacity constraints for the night and early morning periods, as well as the need to minimize noise impact on the environment, it is of essential importance that noise of each aircraft movement during night and early morning is as low as possible. Aircraft operators are therefore urged to use the quietest possible aircraft types for night and early morning flights. In addition, in respect of legal limits on aircraft emissions, it is of the utmost importance that aircraft operators use the cleanest possible aircraft for all operations at Amsterdam Airport Schiphol.

It is noted that Amsterdam Airport Schiphol has adopted and will continue to develop a policy to further encourage the use of quieter (and cleaner) aircraft, for instance through its airport charges system which includes reductions and surcharges based on certification noise levels.



## Capacity declaration Amsterdam Airport Schiphol; summer 2014

### Available number of slots

The number of slots available for landing and take-off operations during the summer season 2014 (March 30, 2014 through October 25, 2014) is specified in the table below. The numbers as specified in this table are applicable to Commercial Aviation only. For the summer season, local time equals UTC + 2 hours.

*Available number of slots; summer season 2014  
(March 30, 2014 through October 25, 2014)*

Total number of departure and arrival slots	Maximum number of departure slots in bracket 20:40 – 04:59 UTC	Maximum number of arrival slots in bracket 21:00 – 05:19 UTC
275,800	8,580	14,100

**Note:**

It is allowed to re-allocate in the bracket 20:40 – 03:59 UTC departure slots that were historically allocated in the bracket 04:00 – 04:59 UTC. However, it is not allowed to re-allocate in the bracket 04:00 – 04:59 UTC departure slots that were historically allocated in the bracket 20:40 – 03:59 UTC.

### Distribution of aircraft movements over a twenty-four hours period

For the purpose of this declaration, a distinction is made between departure peaks, arrival peaks, fire breaks, off-peak, early morning and night. This distinction is based on local time and on the operational runway capacity, as will be defined further in this declaration. Fire breaks are a strategic measure for punctuality and reliability purposes, which are intended to create some margin in the planning to be able to cope with operational disturbances.

The following definitions apply:

- Peak: 05:00 - 19:19 UTC (07:00 - 21:19 LT)
- Off-peak: 19:20 - 20:59 UTC (21:20 - 22:59 LT)
- Night: 21:00 - 03:59 UTC (23:00 - 05:59 LT)
- Early morning: 04:00 - 04:59 UTC (06:00 - 06:59 LT)
- Fire break: A single 20 or 30 minutes block immediately following a departure peak as well as immediately preceding an arrival peak, thus separating that particular arrival peak from the preceding departure peak. The duration of the fire breaks should be 20 minutes, except for the first fire break of each day which should have 30 minutes duration.

## Operational runway capacity

For slot allocation purposes, the operational runway capacity for the summer season 2014 has been determined as follows:

Arrival peaks:	106 IFR movements per hour (three 20 minutes blocks), with a maximum of 68 arrivals and 38 departures. The movements should be evenly distributed over the 20 minutes blocks.
Departure peaks:	110 IFR movements per hour (three 20 minutes blocks), with a maximum of 74 departures and 36 arrivals. The movements should be evenly distributed over the 20 minutes blocks.
Off-peak:	75 IFR movements per hour, with a maximum of 35 arrivals and 40 departures.
Night:	49 IFR movements per hour, with a maximum of 24 arrivals and 25 departures.
Early morning:	55 IFR movements per hour, with a maximum of 25 arrivals and 30 departures.

For slot allocation purposes, an operational runway capacity of 12 arrivals and 13 departures per 20 minutes should be assumed during each 20 minutes fire break (18 arrivals and 20 departures for the 30 minutes fire break).

Coordination will in principle be based on static clock hours and during the period 07:00 – 23:00 LT on 20 minutes intervals, except for the 30 minutes fire break and the adjacent time bracket. In view of expected cancellations, the number of allocated slots for any 20 minutes interval may exceed the specified operational runway capacity by 2 movements, however, the maximum number of arrivals and departures should not be exceeded on a historical basis.

## Additional requirements and conditions

1. This declaration for summer 2014 is based on an assumed number of 188,600 movements during the winter season 2013/2014 (October 27, 2013 through March 29, 2014), in accordance with the capacity declaration for winter 2013/2014. A possible higher or lower number of used slots in said period should be subtracted from, respectively added to the 275,800 slots available for summer 2014. Likewise, if for winter 2013/2014 less night and/or early morning slots have been used than the maximum numbers as specified in the capacity declaration for winter 2013/2014, these unused slots can be added to the pool of night and early morning slots for summer 2014. However, such additional night and early morning slots originating from winter 2013/2014 should be allocated in summer 2014 on a non-historic basis only. It is noted that for the purpose of the above provision, night and early morning slots imply departure slots in the bracket 22:40 – 06:59 LT (winter 21:40 – 05:59 UTC; summer 20:40 – 04:59 UTC) and arrival slots in the bracket 23:00 – 07:19 LT (winter 22:00 – 06:19 UTC; summer 21:00 – 05:19 UTC).
2. Arrival and departure peaks should not overlap.
3. To facilitate a smooth handling of traffic, fire breaks should be planned between all transitions from departure to arrival peak. In the 20 minutes blocks where fire breaks should be planned (or 30 minutes block for the first fire break of the day) and have not yet been completely realized, new slots should not be allocated. In addition, cancelled slots should not be re-allocated in these blocks until the required fire breaks are fully incorporated.
4. Amsterdam Airport Schiphol is facing temporary additional environmental restrictions in order to compensate for delayed implementation of CDAs. Due to these temporary restrictions, the current maximum number of 32,000 night movements (as agreed as part of the agreed package deal at the "Tafel van Alders Schiphol"), is expected to be further reduced to a maximum of 29,000 night movements within a maximum of three years' time.

In order to achieve the down sizing of night movements, the slot coordinator shall not allocate new historic night slots, or re-allocate night slots that were returned to the slot pool (status start of next season), for the night<sup>1</sup> and early morning<sup>2</sup> periods. This means that when xxx historic night slots are returned in year 1, the capacity declaration for the equivalent season in year 2 will be the former declared capacity minus xxx. The system however does not provide a basis to down size the maximum amount of night movements further than 29,000 night movements, i.e. after the three years period the airline sector will be allowed to operate a maximum amount of 29,000 night movements.

The declared night capacity (totally 22,680 slots) as mentioned on page 1 under 'Available number of slots' will be reduced automatically as soon as / the moment that historic night slots are returned to the slot coordinator. Returned historic departure slots will be deducted from the maximum number of departure slots, returned historic arrival slots will be deducted from the maximum number of arrival slots.

Non-historic (night) slots are allocated in order to make optimal use of capacity. Due to the aforementioned reduction in three years time to 29,000 movements, non historic night slots - allocated at the slot return date - that are not operated in the current season, will not be reallocated in the next equivalent season.

<sup>1</sup> Night: for definition see page 1 under 'Distribution of aircraft movements over a twenty-four hours period'.

<sup>2</sup> Early Morning; for definition see page 1 under 'Distribution of aircraft movements over a twenty-four hours period'.



## Supplemental information

In addition to the capacity limitations, aircraft operators should take into account that the operating restrictions as specified below are effective at Amsterdam Airport Schiphol.

### Operating restrictions based on certificated noise levels

1. Aircraft which are certificated in accordance with the noise standards of ICAO Annex 16 Chapter 2:
  - Take-off and landing is not allowed
2. Aircraft which are certificated in accordance with the noise standards of ICAO Annex 16 Chapter 3, for which the margin of the sum of the three certification noise levels, relative to the sum of the three applicable ICAO Annex 16 Chapter 3 certification noise limits, is not more than 5 EPNdB:
  - New operations are not allowed.
  - For aircraft equipped with engines with bypass ratio  $\leq 3$ , take-off and landing is not allowed between 18:00 and 07:59 hr. local time (16:00 – 05:59 UTC for summer season),
  - For aircraft equipped with engines with bypass ratio  $> 3$ , it is not allowed to plan take-offs between 23:00 and 06:59 hr. local time (21:00 – 04:59 UTC for summer season).
3. Aircraft which are certificated in accordance with the noise standards of ICAO Annex 16 Chapter 3, for which the margin of the sum of the three certification noise levels, relative to the sum of the three applicable ICAO Annex 16 Chapter 3 certification noise limits, is more than 5 EPNdB:
  - No restrictions.

It is noted that, if required for noise control purposes, the operating restrictions as specified above may be amended.

### RNAV 1 (P-RNAV) requirement for all flights to and from Schiphol

As from 15 November 2012 the Netherlands requires operational RNAV 1 (P-RNAV) approval for all IFR flights at all times to and from Schiphol. More information can be found in AIC-A 02/11, 19 MAY 11.

## Preferred aircraft types

In view of severe noise-related capacity constraints for the night and early morning periods, as well as the need to minimize noise impact on the environment, it is of essential importance that noise of each aircraft movement during night and early morning is as low as possible. Aircraft operators are therefore urged to use the quietest possible aircraft types for night and early morning flights. In addition, in respect of legal limits on aircraft emissions, it is of the utmost importance that aircraft operators use the cleanest possible aircraft for all operations at Amsterdam Airport Schiphol.

It is noted that Amsterdam Airport Schiphol has adopted and will continue to develop a policy to further encourage the use of quieter (and cleaner) aircraft, for instance through its airport charges system which includes reductions and surcharges based on certification noise levels.

## Capacity declaration Amsterdam Airport Schiphol; winter 2014/2015

### Available number of slots

The number of slots available for landing and take-off operations during the winter season 2014/2015 (October 26, 2014 through March 28, 2015) is specified in the table below. For the winter season, local time equals UTC + 1 hour.

*Available number of slots; winter season 2014/2015  
(October 26, 2014 through March 28, 2015)*

Total number of departure and arrival slots	Maximum number of departure slots in bracket 21:40 – 05:59 UTC	Maximum number of arrival slots in bracket 22:00 – 06:19 UTC
188,600	3,320	8,080

**Note:**

It is allowed to re-allocate in the bracket 21:40 – 04:59 UTC departure slots that were historically allocated in the bracket 05:00 – 05:59 UTC. However, it is not allowed to re-allocate in the bracket 05:00 – 05:59 UTC departure slots that were historically allocated in the bracket 21:40 – 04:59 UTC.

### Distribution of aircraft movements over a twenty-four hours period

For the purpose of this declaration, a distinction is made between departure peaks, arrival peaks, fire breaks, off-peak, early morning and night. This distinction is based on local time and on the operational runway capacity, as will be defined further in this declaration. Fire breaks are a strategic measure for punctuality and reliability purposes, which are intended to create some margin in the planning to be able to cope with operational disturbances.

The following definitions apply:

- Peak: 06:00 - 20:19 UTC (07:00 - 21:19 LT)
- Off-peak: 20:20 - 21:59 UTC (21:20 - 22:59 LT)
- Night: 22:00 - 04:59 UTC (23:00 - 05:59 LT)
- Early morning: 05:00 - 05:59 UTC (06:00 - 06:59 LT)
- Fire break: A single 20 or 30 minutes block immediately following a departure peak as well as immediately preceding an arrival peak, thus separating that particular arrival peak from the preceding departure peak. The duration of the fire breaks should be 20 minutes, except for the first fire break of each day which should have 30 minutes duration.

## Operational runway capacity

For slot allocation purposes, the operational runway capacity for the winter season 2014/2015 has been determined as follows:

Arrival peaks:	106 IFR movements per hour (three 20 minutes blocks), with a maximum of 68 arrivals and 38 departures. The movements should be evenly distributed over the 20 minutes blocks.
Departure peaks:	110 IFR movements per hour (three 20 minutes blocks), with a maximum of 74 departures and 36 arrivals. The movements should be evenly distributed over the 20 minutes blocks.
Off-peak:	75 IFR movements per hour, with a maximum of 35 arrivals and 40 departures.
Night:	49 IFR movements per hour, with a maximum of 24 arrivals and 25 departures.
Early morning:	55 IFR movements per hour, with a maximum of 25 arrivals and 30 departures.

For slot allocation purposes, an operational runway capacity of 12 arrivals and 13 departures per 20 minutes should be assumed during each 20 minutes fire break (18 arrivals and 20 departures for the 30 minutes fire break).

Coordination will in principle be based on static clock hours and during the period 07:00 – 23:00 LT on 20 minutes intervals, except for the 30 minutes fire break and the adjacent time bracket. In view of expected cancellations, the number of allocated slots for any 20 minutes interval may exceed the specified operational runway capacity by 2 movements, however, the maximum number of arrivals and departures should not be exceeded on a historical basis.

## Additional requirements and conditions

1. Arrival and departure peaks should not overlap.
2. To facilitate a smooth handling of traffic, fire breaks should be planned between all transitions from departure to arrival peak. In the 20 minutes blocks where fire breaks should be planned (or 30 minutes block for the first fire break of the day) and have not yet been completely realized, new slots should not be allocated. In addition, cancelled slots should not be re-allocated in these blocks until the required fire breaks are fully incorporated.
3. Amsterdam Airport Schiphol is facing temporary additional environmental restrictions in order to compensate for delayed implementation of CDAs. Due to these temporary restrictions, the current maximum number of 32,000 night movements (as agreed as part of the agreed package deal at the "Tafel van Alders Schiphol"), is expected to be further reduced to a maximum of 29,000 night movements within a maximum of three years' time.

In order to achieve the down sizing of night movements, the slot coordinator shall not allocate new historic night slots, or re-allocate night slots that were returned to the slot pool (status start of next season), for the night<sup>1</sup> and early morning<sup>2</sup> periods. This means that when xxx historic night slots are returned in year 1, the capacity declaration for the equivalent season in year 2 will be the former declared capacity minus xxx. The system however does not provide a basis to down size the maximum amount of night movements further than 29,000 night movements, i.e. after the three years period the airline sector will be allowed to operate a maximum amount of 29,000 night movements.

<sup>1</sup> Night: for definition see page 1 under 'Distribution of aircraft movements over a twenty-four hours period'.

<sup>2</sup> Early Morning: for definition see page 1 under 'Distribution of aircraft movements over a twenty-four hours period'.



The declared night capacity (totally 11,400 slots) as mentioned on page 1 under 'Available number of slots' will be reduced automatically as soon as / the moment that historic night slots are returned to the slot coordinator. Returned historic departure slots will be deducted from the maximum number of departure slots, returned historic arrival slots will be deducted from the maximum number of arrival slots.

Non-historic (night) slots are allocated in order to make optimal use of capacity. Due to the aforementioned reduction in three years time to 29,000 movements, non-historic night slots - allocated at the slot return date - that are not operated in the current season, will not be re-allocated in the next equivalent season.

4. The number of night and early morning slots (departure slots in bracket 21:40 – 05:59 UTC and arrival slots in bracket 22:00 – 06:19 UTC) that is allocated on a non-historic basis shall, as long as the number of movements is not below 29,000 movements, at least not be higher than for the previous equivalent season.

## Supplemental information

In addition to the capacity limitations, aircraft operators should take into account that the operating restrictions as specified below are effective at Amsterdam Airport Schiphol.

### Operating restrictions based on certificated noise levels

1. Aircraft which are certificated in accordance with the noise standards of ICAO Annex 16 Chapter 2:
  - Take-off and landing is not allowed.
2. Aircraft which are certificated in accordance with the noise standards of ICAO Annex 16 Chapter 3, for which the margin of the sum of the three certification noise levels, relative to the sum of the three applicable ICAO Annex 16 Chapter 3 certification noise limits, is not more than 5 EPNdB:
  - New operations are not allowed.
  - For aircraft equipped with engines with bypass ratio  $\leq 3$ , take-off and landing is not allowed between 18:00 and 07:59 hr. local time (17:00 – 06:59 UTC for winter season).
  - For aircraft equipped with engines with bypass ratio  $> 3$ , it is not allowed to plan take-offs between 23:00 and 06:59 hr. local time (22:00 – 05:59 UTC for winter season).
3. Aircraft which are certificated in accordance with the noise standards of ICAO Annex 16 Chapter 3, for which the margin of the sum of the three certification noise levels, relative to the sum of the three applicable ICAO Annex 16 Chapter 3 certification noise limits, is more than 5 EPNdB:
  - No restrictions.

It is noted that, if required for noise control purposes, the operating restrictions as specified above may be amended.

### RNAV 1 (P-RNAV) requirement for all flights to and from Schiphol

As from 15 November 2012 the Netherlands requires operational RNAV 1 (P-RNAV) approval for all IFR flights at all times to and from Schiphol. More information can be found in AIC-A 02/11, 19 MAY 11.

## Preferred aircraft types

In view of severe noise-related capacity constraints for the night and early morning periods, as well as the need to minimize noise impact on the environment, it is of essential importance that noise of each aircraft movement during night and early morning is as low as possible. Aircraft operators are therefore urged to use the quietest possible aircraft types for night and early morning flights. In addition, in respect of legal limits on aircraft emissions, it is of the utmost importance that aircraft operators use the cleanest possible aircraft for all operations at Amsterdam Airport Schiphol.

It is noted that Amsterdam Airport Schiphol has adopted and will continue to develop a policy to further encourage the use of quieter (and cleaner) aircraft, for instance through its airport charges system which includes reductions and surcharges based on certification noise levels.



Postbus 7501, 1118 ZG Schiphol

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Port Betaald  
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Pays-Bas



GESCAND

21 MEI 2015



Ministerie van Infrastructuur en Milieu

5.1.2e

Postbus 20901  
2500 EX DEN HAAG



Drs. B.I. Otto  
Executive Vice President & COO



Stichting Airport Coordination Netherlands  
For the attention of Ms C. Ditvoorst  
Evert van de Beekstraat 23  
1118 CL LUCHTHAVEN SCHIPHOL

Direct connection

5.1.2e

Ref.no

019-2015-D CD

Enclosure

1

Handled by

Your letter of

Schiphol

May 8, 2015

Subject **Capacity declaration winter season 2015/2016**

Dear Ms Ditvoorst,

Please find enclosed the capacity declaration for the winter season 2015/2016. We trust that you will allocate the slots for the next winter season to the aircraft operators in accordance with the limitations and requirements as specified in this capacity declaration, taking into account the additional considerations as explained below. The enclosed capacity declaration is applicable to Commercial Aviation as well as General Aviation. For the coordination of General Aviation, a local rule was adopted on 25 April 2014 by the Coordination Committee Netherlands and approved by the Ministry of Infrastructure and the Environment on 1 July 2014.

In view of the tension between environmental impact, punctuality and capacity, the capacity declaration includes a number of guidelines which are intended to achieve a desirable and balanced distribution of aircraft movements over the 24 hours period. You are requested to allocate slots in accordance with these guidelines, as far as practically possible.

In the allocation of slots it has been common practice to take into consideration that a certain percentage of the operations for which a slot has been allocated, will eventually not be realized. This gives the possibility to accommodate requests of airlines as much as possible, without resulting in a realization that exceeds the limitations of the capacity declaration. You are requested to take expected cancellations into account in the allocation of slots for winter 2015/2016 and inform us of the results of the slot allocation process after the IATA Slots Conference.

Possible effects of experiments with operational measures to reduce noise annoyance have not been taken into account in the capacity declaration. It is assumed that, if necessary, Amsterdam Airport Schiphol will request the Ministry of Infrastructure and the Environment for appropriate arrangements to compensate possible effects of such experiments on the distribution of the noise load around the airport, in order to avoid adverse effects on the yearly capacity. It is also assumed that possible major maintenance of the runway system can be performed without affecting the yearly or hourly capacity. To this end, a request for exemption of legal noise limits or rules for the use of runways may be submitted by Amsterdam Airport Schiphol to the Ministry of Infrastructure and the Environment.

Schiphol Group P.O. Box 7501 1118 ZG Schiphol The Netherlands  
Telephone +31 (0)20 601 91 11 Schiphol Nederland BV Trade register number 34166584 Chamber of Commerce Amsterdam  
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BIC INGBNL2A IBAN NL03INGB069760729

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Date  
May 8, 2015

Due to the delayed implementation of Continuous Descent Approaches (CDAs), it was agreed at the 'Tafel van Alders Schiphol' that the aviation sector will take additional measures to compensate for the effects of this delay on the noise impact. One of these measures concerns a temporary limitation of the number of aircraft movements during the night and early morning to a maximum of 29,000 per year, which is to be achieved over a period of three years. The airlines represented in BARIN have agreed on the main principles of the way in which said limitation of the number of night and early morning movements is to be accomplished. In the enclosed capacity declaration a number of provisions are included to effectuate a reduction of the number of aircraft movements during the night and early morning.

The capacity declaration for winter 2015/2016 has been endorsed by the 'Operationeel Schiphol Overleg' (Operational Management Committee Schiphol), in accordance with the agreements as laid down in the 'Convenant Luchtvaartsector' (Covenant Aviation Sector) of 26 June 2003 and the 'Besluit Slotallocatie' (Decree Slot Allocation).

As agreed, SACN will communicate the capacity declaration and the resulting so-called runway graphs (or similar information) to the airlines through publication on its web site or its portal e-Airport slots.

A copy of this letter will be sent to the Ministry of Infrastructure and the Environment, the 'Omgevingsraad Schiphol' (Regional Consultation Committee Schiphol), LVNL (Air Traffic Control the Netherlands), the Schiphol Airline Operators Committee, the Board of Airline Representatives in the Netherlands, the airlines KLM, Martinair, Transavia, ArkeFly and Corendon Dutch Airlines, as well as the Coordination Committee Netherlands and the associated Scheduling and Slot Performance Committee.

Yours sincerely, on behalf of the aviation sector,  
SCHIPHOL GROUP

5.1.2e

Birgit Otto  
Executive Vice President & Chief Operations Officer

5.1.2e

Enclosure: Capacity declaration Amsterdam Airport Schiphol; winter 2015/2016

Page

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Date

May 8, 2015

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  - Directorate-General for Mobility and Transport:

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- Human Environment and Transport Inspectorate:

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- LVNL:

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- SAOC:

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- BARIN:

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- KLM:

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- Martinair:

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- Transavia:

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- ArkeFly:

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- Corendon Dutch Airlines:

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- easyJet

5.1.2e

- Coordination Committee Netherlands:

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- Scheduling and Slot Performance Committee:

5.1.2e



## Capacity declaration Amsterdam Airport Schiphol; winter 2015/2016

### Environmental capacity; available number of slots

The number of slots available for landing and take-off operations during the winter season 2015/2016 (October 25, 2015 through March 26, 2016) is specified in the table below. For the winter season, local time equals UTC + 1 hour.

*Available number of slots; winter season 2015/2016  
(October 25, 2015 through March 26, 2016)*

<b>Total number of departure and arrival slots</b>	<b>Maximum number of night departure slots</b>	<b>Maximum number of night departure and arrival slots</b>
188,600	3,320	11,400

In relation to above table the following definitions apply:

Night departure slot:	Departure slot in the bracket 21:40 – 05:59 UTC
Night arrival slot:	Arrival slot in the bracket 22:00 – 06:19 UTC
Night slot:	Either a night departure slot or a night arrival slot

### Distribution of aircraft movements over a twenty-four hours period

For the purpose of this declaration, a distinction is made between departure peaks, arrival peaks, fire breaks, off-peak, early morning and night. This distinction is based on local time and on the operational runway capacity, as will be defined further in this declaration. Fire breaks are a strategic measure for punctuality and reliability purposes, which are intended to create some margin in the planning to be able to cope with operational disturbances.

The following definitions apply for the purpose of this capacity declaration:

Peak:	06:00 - 20:39 UTC (07:00 - 21:39 LT)
Off-peak:	20:40 - 21:59 UTC (21:40 - 22:59 LT)
Night:	22:00 - 04:59 UTC (23:00 - 05:59 LT)
Early morning:	05:00 - 05:59 UTC (06:00 - 06:59 LT)
Fire break:	A single 20 or 30 minutes block immediately following a departure peak as well as immediately preceding an arrival peak, thus separating that particular arrival peak from the preceding departure peak. The duration of the fire breaks should be 20 minutes, except for the first fire break of each day which should have 30 minutes duration.

## Operational runway capacity

For slot allocation purposes, the operational runway capacity for the winter season 2015/2016 has been determined as follows:

Arrival peaks:	106 IFR movements per hour (three 20 minutes blocks), with a maximum of 68 arrivals and 38 departures. The movements should be evenly distributed over the 20 minutes blocks.
Departure peaks:	110 IFR movements per hour (three 20 minutes blocks), with a maximum of 74 departures and 36 arrivals. The movements should be evenly distributed over the 20 minutes blocks.
Off-peak:	75 IFR movements per hour, with a maximum of 35 arrivals and 40 departures.
Night:	49 IFR movements per hour, with a maximum of 24 arrivals and 25 departures.
Early morning:	55 IFR movements per hour, with a maximum of 25 arrivals and 30 departures.

For slot allocation purposes, an operational runway capacity of 12 arrivals and 13 departures per 20 minutes should be assumed during each 20 minutes fire break (18 arrivals and 20 departures for the 30 minutes fire break).

Coordination will in principle be based on static clock hours and during the period 06:00 – 23:00 LT on 20 minutes intervals, except for the 30 minutes fire break and the adjacent time bracket. In view of expected cancellations, the number of allocated slots for any 20 minutes interval may exceed the specified operational runway capacity by 2 movements, however, the maximum number of arrivals and departures should not be exceeded on a historical basis. Slots exceeding the specified operational runway capacity should not be allocated to General Aviation.

## Additional requirements and conditions

1. Arrival and departure peaks should not overlap.
2. To facilitate a smooth handling of traffic, fire breaks should be planned between all transitions from departure to arrival peak. In the 20 minutes blocks where fire breaks should be planned (or 30 minutes block for the first fire break of the day) and have not yet been completely realized, new slots should not be allocated. In addition, cancelled slots should not be re-allocated in these blocks until the required fire breaks are fully incorporated.
3. Amsterdam Airport Schiphol is facing temporary additional environmental restrictions in order to compensate for delayed implementation of CDAs. Due to these temporary restrictions, the current maximum number of 32,000 night movements (as agreed as part of the agreed package deal at the "Tafel van Alders Schiphol"), is expected to be further reduced to a maximum of 29,000 night movements within a maximum of three years' time.

In order to achieve the down sizing of night and early morning movements, the slot coordinator shall not allocate new historic night slots, or re-allocate night slots that were returned to the slot pool (status start of next season), for the night<sup>1</sup> and early morning<sup>2</sup> periods. This means that when xxx historic night slots are returned in year 1, the capacity declaration for the equivalent season in year 2 will be the former declared capacity minus xxx. The system however does not provide a basis to down size the maximum amount of night movements further than 29,000 night movements, i.e. after the three years period the airline sector will be allowed to operate a maximum amount of 29,000 night movements.

<sup>1</sup> Night: for definition see page 1 under 'Distribution of aircraft movements over a twenty-four hours period'.

<sup>2</sup> Early Morning: for definition see page 1 under 'Distribution of aircraft movements over a twenty-four hours period'.

The declared night capacity of totally 11,400 night slots as mentioned on page 1 under 'Environmental capacity; available number of slots' will be reduced automatically as soon as / the moment that historic night slots are returned to the slot coordinator.

Non-historic (night) slots are allocated in order to make optimal use of capacity. Due to the aforementioned reduction in three years time to 29,000 movements, non- historic night slots - allocated at the slot return date - that are not operated in the current season, will not be re-allocated in the next equivalent season.



## Supplemental information

In addition to the capacity limitations, aircraft operators should take into account that the operating restrictions as specified below are effective at Amsterdam Airport Schiphol.

### Operating restrictions based on certificated noise levels

1. Aircraft which are certificated in accordance with the noise standards of ICAO Annex 16 Chapter 2:
  - Take-off and landing is not allowed.
2. Aircraft which are certificated in accordance with the noise standards of ICAO Annex 16 Chapter 3, for which the margin of the sum of the three certification noise levels, relative to the sum of the three applicable ICAO Annex 16 Chapter 3 certification noise limits, is not more than 5 EPNdB:
  - New operations are not allowed.
  - For aircraft equipped with engines with bypass ratio  $\leq 3$ , take-off and landing is not allowed between 18:00 and 07:59 hr. local time (17:00 – 06:59 UTC for winter season).
  - For aircraft equipped with engines with bypass ratio  $> 3$ , it is not allowed to plan take-offs between 23:00 and 06:59 hr. local time (22:00 – 05:59 UTC for winter season).
3. Aircraft which are certificated in accordance with the noise standards of ICAO Annex 16 Chapter 3, for which the margin of the sum of the three certification noise levels, relative to the sum of the three applicable ICAO Annex 16 Chapter 3 certification noise limits, is more than 5 EPNdB:
  - No restrictions.

It is noted that, if required for noise control purposes, the operating restrictions as specified above may be amended.

### RNAV 1 (P-RNAV) requirement for all flights to and from Schiphol

The Netherlands requires operational RNAV 1 (P-RNAV) approval for all IFR flights at all times to and from Schiphol. More information can be found in AIC-A 02/11, 19 MAY 11.

## Preferred aircraft types

In view of severe noise-related capacity constraints for the night and early morning periods, as well as the need to minimize noise impact on the environment, it is of essential importance that noise of each aircraft movement during night and early morning is as low as possible. Aircraft operators are therefore urged to use the quietest possible aircraft types for night and early morning flights. In addition, in respect of legal limits on aircraft emissions, it is of the utmost importance that aircraft operators use the cleanest possible aircraft for all operations at Amsterdam Airport Schiphol.

It is noted that Amsterdam Airport Schiphol has adopted and will continue to develop a policy to further encourage the use of quieter (and cleaner) aircraft, for instance through its airport charges system which includes reductions and surcharges based on certification noise levels.

Drs. B.I. Otto  
Executive Vice President & COO



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Date  
October 6, 2015

Stichting Airport Coordination Netherlands  
For the attention of Ms C. Ditvoorst  
Evert van de Beekstraat 23  
1118 CL LUCHTHAVEN SCHIPHOL

ILT/Luchtvaart  
13  
10

Direct Connection  
5.1.2e

Ref.no.  
037-2015-D CD

Encl  
1

Handled By  
5.1.2e

Your letter of  
--

Schiphol,  
October 6, 2015

Betreft: **Capacity declaration summer season 2016**

Dear Ms Ditvoorst,

Please find enclosed the capacity declaration for the summer season 2016. We trust that you will allocate the slots for the next summer season to the aircraft operators in accordance with the limitations and requirements as specified in this capacity declaration. The enclosed capacity declaration is applicable to Commercial Aviation as well as General Aviation.

In the allocation of slots it has been common practice to take into consideration that a certain percentage of the operations for which a slot has been allocated, will eventually not be realized. This gives the possibility to accommodate requests of airlines as much as possible, without resulting in a realization that exceeds the limitations of the capacity declaration. You are requested to take expected cancellations into account in the allocation of slots for summer 2016 and inform us of the results of the slot allocation process after the IATA Slots Conference.

Due to the delayed implementation of Continuous Descent Approaches (CDAs), it was agreed at the 'Tafel van Alders Schiphol' that the aviation sector will take additional measures to compensate for the effects of this delay on the noise impact. One of these measures concerns a temporary limitation of the number of aircraft movements during the night and early morning to a maximum of 29,000 per year, which is to be achieved over a period of three years. The airlines represented in BARIN have agreed on the main principles of the way in which said limitation of the number of night and early morning movements is to be accomplished. In the enclosed capacity declaration a number of provisions is included to effectuate a reduction of the number of aircraft movements during the night and early morning.

The capacity declaration for summer 2016 has been endorsed by the 'Operationeel Schiphol Overleg' (Operational Management Committee Schiphol), in accordance with the agreements as laid down in the 'Convenant Luchtvaartsector' (Covenant Aviation Sector) of 26 June 2003 and the 'Besluit Slotallocatie' (Decree Slot Allocation).

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Date  
October 6, 2015

As agreed, SACN will communicate the capacity declaration and the resulting so-called runway graphs (or similar information) to the airlines through publication on its web site or its portal e-Airportslots.

A copy of this letter will be sent to the Ministry of Infrastructure and the Environment, the 'Omgevingsraad Schiphol' (Regional Consultation Committee Schiphol), LVNL (Air Traffic Control the Netherlands), the Schiphol Airline Operators Committee, the Board of Airline Representatives in the Netherlands, the airlines KLM, Martinair, Transavia, ArkeFly, Corendon Dutch Airlines and easyJet, as well as the Coordination Committee Netherlands and the associated Scheduling and Slot Performance Committee.

Yours sincerely, on behalf of the aviation sector  
SCHIPHOL GROUP

5.1.2e

Birgit Otto  
Executive Vice President & Chief Operations Officer

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Enclosure: Capacity declaration Amsterdam Airport Schiphol; summer 2016



Page number

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Date

October 6, 2015

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  - 5.1.2e

11

15-4

## Capacity declaration Amsterdam Airport Schiphol; summer 2016

### Environmental capacity; available number of slots

The number of slots available for landing and take-off operations during the summer season 2016 (March 27, 2016 through October 29, 2016, 31 weeks) is specified in the table below. For the summer season, local time equals UTC + 2 hours.

*Available number of slots; summer season 2016  
(March 27, 2016 through October 29, 2016)*

Total number of departure and arrival slots	Maximum number of night departure slots	Maximum number of night departure and arrival slots
300,000	8,866	23,436

In relation to above table the following definitions apply:

Night departure slot:	Departure slot in the bracket 20:40 – 04:59 UTC
Night arrival slot:	Arrival slot in the bracket 21:00 – 05:19 UTC
Night slot:	Either a night departure slot or a night arrival slot

### Nominal operational runway capacity

For slot allocation purposes, the operational runway capacity for the summer season 2016 has been determined as follows:

ATM mode	Possible within period from – to (UTC)	Nominal hourly capacity, rolling per 20 minutes		Nominal capacity per 20 minutes	
		IFR Arrivals	IFR Departures	IFR Arrivals	IFR Departures
Day; departure peak mode (S)	05:00 – 19:39	36	74	12	25
Day; arrival peak mode (L)	05:00 – 19:39	68	38	23	13
Day; off peak mode (O)	04:40 - 04:59	24	40	8	14
	05:00 - 20:59	36	40	12	14
Night mode (N)	21:00 - 03:59	24	25		
	04:00 - 04:39	24	30		

Each arrival peak mode period shall be separated from a preceding departure peak mode period by an off peak mode period. Between the first departure and arrival peak, the duration of this



off peak mode period should be at least 30 minutes. The duration of this off peak mode period between any other departure and arrival peak shall be at least 20 minutes.

Coordination will in principle be based on static clock hours and during the period 06:00 – 22:59 LT on 20 minutes intervals, except for the 30 minutes off peak period and the adjacent time bracket.

On an incidental basis and up to the discretion of the slot coordinator (for the purpose of e.g. situations of force majeure or to solve operational issues), the number of allocated slots for any 20 minutes interval may exceed the specified operational runway capacity by 1 movement, however, the maximum number of arrivals and departures should not be exceeded on a historical basis. In case the number of historic slots in a given bracket is larger than the above mentioned capacity, the current historic slots shall be respected. Slots exceeding the specified runway capacity should not be allocated to General Aviation.

## Additional requirements and conditions

1. This declaration for summer 2016 is based on an assumed number of 188,600 movements during the winter season 2015/2016 (October 25, 2015 through March 26, 2016, 22 weeks), in accordance with the capacity declaration for winter 2015/2016. A possible higher or lower number of used slots in said period should be subtracted from, respectively added to the 300,000 slots available for summer 2016. Likewise, if for winter 2015/2016 less night slots have been used than the maximum numbers as specified in the capacity declaration for winter 2015/2016, these unused slots can be added to the pool of night slots for summer 2016. However, such additional night slots originating from winter 2015/2016 should be allocated in summer 2016 on a non-historic basis only.

It is noted that for the purpose of the above provision, night slots imply departure slots in the bracket 22:40 – 06:59 LT (winter 21:40 – 05:59 UTC; summer 20:40 – 04:59 UTC) and arrival slots in the bracket 23:00 – 07:19 LT (winter 22:00 – 06:19 UTC; summer 21:00 – 05:19 UTC).

2. Arrival and departure peaks should not overlap.
3. Amsterdam Airport Schiphol is facing temporary additional environmental restrictions in order to compensate for delayed implementation of CDAs. Due to these temporary restrictions, the current maximum number of 32,000 night movements<sup>1</sup> as agreed as part of the agreed package deal at the "Tafel van Alders Schiphol", is expected to be further reduced to a maximum of 29,000 night movements within a maximum of three years' time

In order to achieve the down sizing of night movements, the slot coordinator shall not allocate new historic night slots, or re-allocate night slots that were returned to the slot pool (status start of next season)<sup>2</sup>. This means that when xxx historic night slots are returned in year 1, the capacity declaration for the equivalent season in year 2 will be the former declared capacity minus xxx night slots. The system however does not provide a basis to down size the maximum amount of night movements further than 29,000 night movements, i.e. after the three years period the airline sector will be allowed to operate a maximum amount of 29,000 night movements.

The declared night capacity of totally 23,436 slots as mentioned on page 1 under 'Environmental capacity; available number of slots' will be reduced automatically as soon as / the moment that historic night slots are returned to the slot coordinator.

Non-historic (night) slots are allocated in order to make optimal use of capacity. Due to the aforementioned reduction in three years time to 29,000 movements, non historic night slots - allocated at the slot return date - that are not operated in the current season, will not be reallocated in the next equivalent season.

<sup>1</sup> Night movement: Departure or arrival with a runway time in the bracket 23:00 - 06:59 Local Time.

<sup>2</sup> Night slot: See definition on page 1 below the table 'Available number of slots, summer season 2016'.

## Supplemental information

In addition to the capacity limitations, aircraft operators should take into account that the operating restrictions as specified below are effective at Amsterdam Airport Schiphol.

### Operating restrictions based on certificated noise levels

1. Aircraft which are certificated in accordance with the noise standards of ICAO Annex 16 Chapter 2:
  - Take-off and landing is not allowed.
2. Aircraft which are certificated in accordance with the noise standards of ICAO Annex 16 Chapter 3, for which the margin of the sum of the three certification noise levels, relative to the sum of the three applicable ICAO Annex 16 Chapter 3 certification noise limits, is not more than 5 EPNdB:
  - New operations are not allowed.
  - For aircraft equipped with engines with bypass ratio  $\leq 3$ , take-off and landing is not allowed between 18:00 and 07:59 hr. local time (16:00 – 05:59 UTC for summer season).
  - For aircraft equipped with engines with bypass ratio  $> 3$ , it is not allowed to plan take-offs between 23:00 and 06:59 hr. local time (21:00 – 04:59 UTC for summer season).
3. Aircraft which are certificated in accordance with the noise standards of ICAO Annex 16 Chapter 3, for which the margin of the sum of the three certification noise levels, relative to the sum of the three applicable ICAO Annex 16 Chapter 3 certification noise limits, is more than 5 EPNdB:
  - No restrictions.

It is noted that, if required for noise control purposes, the operating restrictions as specified above may be amended.

### RNAV 1 (P-RNAV) requirement for all flights to and from Schiphol

The Netherlands requires operational RNAV 1 (P-RNAV) approval for all IFR flights at all times to and from Schiphol. More information can be found in AIC-A 02/11, 19 MAY 11.

## Preferred aircraft types

In view of severe noise-related capacity constraints for the night and early morning periods, as well as the need to minimize noise impact on the environment, it is of essential importance that noise of each aircraft movement during night and early morning is as low as possible. Aircraft operators are therefore urged to use the quietest possible aircraft types for night and early morning flights. In addition, in respect of legal limits on aircraft emissions, it is of the utmost importance that aircraft operators use the cleanest possible aircraft for all operations at Amsterdam Airport Schiphol.

It is noted that Amsterdam Airport Schiphol has adopted and will continue to develop a policy to further encourage the use of quieter (and cleaner) aircraft, for instance through its airport charges system which includes reductions and surcharges based on certification noise levels.







Page number

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Date

October 4, 2016

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  - 5.1.2e
- Scheduling and Slot Performance Committee:
  - 5.1.2e

## Capacity declaration Amsterdam Airport Schiphol; summer 2017

### Environmental capacity; available number of slots for Commercial Aviation

The capacity and the number of slots available for landing and take-off operations of Commercial Aviation during the summer season 2017 (March 26, 2017 through October 28, 2017; 31 weeks) is specified in the table below. For the summer season, local time equals UTC + 2 hours.

*Capacity and available number of slots for Commercial Aviation operations;  
Summer season 2017 (March 26, 2017 through October 28, 2017; 31 weeks)*

	Total number of departures and arrivals	Number of night departures and arrivals
Capacity (movements)	313,740	23,219
Planning limit (slots)	313,740	23,219

In relation to above table the following definitions apply:

**Commercial Aviation:** Flights performed by an air carrier, providing scheduled flights, programmed charters or ad hoc flights which are open for individual bookings for passengers and/or freight and/or mail, including positioning flights which are directly linked to the operation of these flights.

**Night departure slot:** Departure slot in the period 22:40 – 06:59 LT (20:40 – 04:59 UTC)

**Night arrival slot:** Arrival slot in the period 23:00 – 07:19 LT (21:00 – 05:19 UTC)

**Night slot:** Either a night departure slot or a night arrival slot

**Night movement:** Departure or arrival with a runway time in the period 23:00 – 06:59 LT (21:00 – 04:59 UTC)

**Capacity:** Maximum number of aircraft movements/ night movements by Commercial Aviation.

**Planning limit:** Total number of slots available for allocation and eligible for historic precedence, provided that all applicable requirements are met, as determined by the slot coordinator.

## Nominal operational runway capacity

For slot allocation purposes for both Commercial and General Aviation, the operational runway capacity for the summer season 2017 has been determined as follows:

ATM mode <sup>1</sup>	Possible within period from – to (UTC)	Nominal hourly capacity		Nominal capacity per 20 minutes	
		IFR Arrivals	IFR Departures	IFR Arrivals	IFR Departures
Day; departure peak mode (S)	05:00 – 19:39	36	74	12	25
Day; arrival peak mode (L)	05:00 – 19:39	68	38	23	13
Day; off peak mode (O)	04:00 – 04:39	24	30	8	10
	04:40 – 04:59	24	40	8	14
	05:00 – 20:39	36	40	12	14
	20:40 – 20:59	36	25	12	9
Night mode (N)	21:00 – 03:59	24	25	8	9

### Additional requirements:

- Arrival and departure peak modes should not overlap.
- Each arrival peak mode period shall be separated from a preceding departure peak mode period by an off peak mode period. Between the first departure and arrival peak, the duration of this off peak mode period should be at least 30 minutes. The duration of this off peak mode period between any other departure and arrival peak shall be at least 20 minutes.
- Each departure and arrival peak mode shall have a minimal duration of 40 minutes, except for the first peak mode at 05:00 UTC, which has a minimum duration of 20 minutes.
- Coordination will be based on 20 minutes intervals.
- Slots should be requested and will be allocated per 5 minutes.
- The number of arrival slots of any ATM mode arrival peak may exceed the specified runway capacity by 1 movement during the first 60 minutes of that peak mode, however, the maximum number of arrivals and departures should not be exceeded on a historical basis. The time slots for which this additional 1 movement is available are:
  - 6:00 UTC - 6:55 UTC
  - 9:00 UTC - 9:35 UTC
  - 11:00 UTC - 11:55 UTC
  - 13:20 UTC - 14:15 UTC
  - 16:20 UTC - 17:15 UTC

<sup>1</sup> Departure peak mode: one runway is used for landings, two runways for take-offs. Day arrival and departure procedures are applied.

Arrival peak mode: two runways are used for landings, one runway for take-offs. Day arrival and departure procedures are applied.

Off peak mode: one runway is used for landings, one runway for take-offs. Day arrival and departure procedures are applied.

Night mode: one runway is used for landings, one runway for take-offs. Night arrival and departure procedures are applied.



In the bracket list, that forms integral part of this declaration, the number of available arrival and departure slots for any 20 minute interval will be noted. This capacity per 20 minute interval depends on the operational runway capacity for the different ATM modes and the agreed peak-and offpeak times for the day period and should meet the mentioned additional requirements. The bracket list for the twenty-four hours period, in accordance with the above table, is specified in Attachment 1.

The bracket list will be endorsed together with this capacity declaration.

## Additional requirements and conditions

1. This declaration for summer 2017 is based on an assumed number of 185,000 movements (Commercial Aviation only) during the winter season 2016/2017 (October 30, 2016 through March 25, 2017, 21 weeks), in accordance with the capacity declaration for winter 2016/2017. If the actual number of movements in said period is less than 185,000, the difference should be added to the capacity of 313,740 movements for summer 2017. Likewise, if for winter 2016/2017 the actual number of night movements is less than 10,735 (capacity declaration for winter 2016/2017), the difference should be added to the night capacity of 23,219 night movements for summer 2017. However, such additional capacity originating from winter 2016/2017 is available in summer 2017 for slot allocation on a non-historic basis only. Therefore it has no effect on the planning limits for summer 2017, as the planning limits are applicable to the numbers of slots that may become eligible for historic precedence.  
It is noted that for the purpose of the above provision, night slots imply departure slots in the bracket 22:40 – 06:59 LT (winter 21:40 – 05:59 UTC; summer 20:40 – 04:59 UTC) and arrival slots in the bracket 23:00 – 07:19 LT (winter 22:00 – 06:19 UTC; summer 21:00 – 05:19 UTC).
2. In view of the upcoming legally binding maximum of 32,000 night movements (excluding General Aviation) during an operational year (1 November through 31 October), the slot coordinator shall not allocate new historic night slots, or re-allocate night slots that were returned to the slot pool (status start of next season). This means that when xxx historic night slots are returned in year 1, the capacity declaration for the equivalent season in year 2 will be the former declared night planning limit minus xxx. The system however does not provide a basis to down size the maximum amount of night slots further than 32,000. The declared night planning limit of totally 23,219 night slots for Commercial Aviation, as mentioned on page 1 under 'Environmental capacity; available number of slots for Commercial Aviation', will be reduced automatically as soon as / the moment that historic night slots are returned to the slot coordinator.
3. The upcoming legally binding limits on the number of aircraft movements of 500,000 for the twenty-four hours period and 32,000 for the night period (excluding General Aviation) are considered as targets that should not be exceeded when releasing and allocating slots that are not eligible for historic precedence.
4. The upcoming legally binding limits on the number of aircraft movements of 500,000 for the twenty-four hours period and 32,000 for the night period (excluding General Aviation) are applicable to an operational year (1 November through 31 October). The number of aircraft movements actually operated as from 1 November 2016 will therefore be taken into account when determining the number of additional slots that may be released before or during Summer 2017 for allocation on a non-historic basis only (see last paragraph on page 1 under 'Environmental capacity; available number of slots for Commercial Aviation').

## Explanatory remarks

1. It is currently expected that the upcoming new legislation will formally be effective as from 1 November 2017. It is noted that operational year 2017 should be considered as part of a transition period. Procedures and policies, especially regarding night slots and night movements, may be revised for future capacity declarations.
2. According to the current planning, major maintenance of runway 06-24 will be performed in the period March – June 2017. During the maintenance period the runway will be out of service. The maintenance of runway 06-24 will have its impact on the sustainability of Schiphol's runway system, especially in conditions when the three north – south runways cannot be used due to strong wind from the west or east. If this situation occurs, the procedure for expected temporary severe capacity reduction may be invoked (see Aeronautical Information Publication, EHAM AD 2.20, Local Aerodrome Regulations, paragraph 1.3).
3. Some supplemental information which is relevant for operators planning operations at Amsterdam Airport Schiphol is provided in Attachment 2.

# Attachment 1: Bracket list Summer '17

Time from [UTC]	Time to [UTC]	# Arrivals	# Departures
0:00	0:15	8	8
0:20	0:35	8	9
0:40	0:55	8	8
1:00	1:15	8	8
1:20	1:35	8	9
1:40	1:55	8	8
2:00	2:15	8	8
2:20	2:35	8	9
2:40	2:55	8	8
3:00	3:15	8	8
3:20	3:35	8	9
3:40	3:55	8	8
4:00	4:15	8	10
4:20	4:35	8	10
4:40	4:55	8	14
5:00	5:15	12	25
5:20	5:45	18	20
5:50	5:55	11	6
6:00	6:15	23	13
6:20	6:35	23	13
6:40	6:55	22	12
7:00	7:15	23	13
7:20	7:35	12	25
7:40	7:55	12	25
8:00	8:15	12	25
8:20	8:35	12	25
8:40	8:55	12	14
9:00	9:15	23	13
9:20	9:35	23	13
9:40	9:55	12	25
10:00	10:15	12	25
10:20	10:35	12	25
10:40	10:55	12	14
11:00	11:15	23	13
11:20	11:35	22	12
11:40	11:55	23	13
12:00	12:15	12	24
12:20	12:35	12	25
12:40	12:55	12	25
13:00	13:15	12	14
13:20	13:35	23	13
13:40	13:55	23	13
14:00	14:15	23	13



14:20	14:35	12	25
14:40	14:55	12	25
15:00	15:15	12	24
15:20	15:35	12	25
15:40	15:55	12	25
16:00	16:15	12	14
16:20	16:35	23	13
16:40	16:55	23	13
17:00	17:15	22	12
17:20	17:35	23	13
17:40	17:55	23	13
18:00	18:15	12	25
18:20	18:35	12	25
18:40	18:55	12	24
19:00	19:15	12	25
19:20	19:35	12	25
19:40	19:55	12	14
20:00	20:15	12	14
20:20	20:35	12	14
20:40	20:55	12	9
21:00	21:15	8	8
21:20	21:35	8	9
21:40	21:55	8	8
22:00	22:15	8	8
22:20	22:35	8	9
22:40	22:55	8	8
23:00	23:15	8	8
23:20	23:35	8	9
23:40	23:55	8	8

This Bracketlist S'17 resembles the available slots per 20 minutes, in accordance with the underlying capacity declaration S'17 and the current distribution of historical slots. Alternations to the Bracketlist S'17 are possible, provided that it is in accordance with the declaration. The Bracketlist S'17 is part of the declaration. No changes to the bracketlist are possible after the endorsement of the final version of this capacity declaration, which will be at least seven days before the IATA Initial Submission Date.

## Attachment 2: Supplemental information

In addition to the capacity limitations, aircraft operators should take into account that the operating restrictions and requirements as specified below are effective at Amsterdam Airport Schiphol.

### Operating restrictions based on certificated noise levels

1. Aircraft which are certificated in accordance with the noise standards of ICAO Annex 16 Chapter 2:
  - Take-off and landing is not allowed.
2. Aircraft which are certificated in accordance with the noise standards of ICAO Annex 16 Chapter 3, for which the margin of the sum of the three certification noise levels, relative to the sum of the three applicable ICAO Annex 16 Chapter 3 certification noise limits, is not more than 5 EPNdB:
  - New operations are not allowed.
  - For aircraft equipped with engines with bypass ratio  $\leq 3$ , take-off and landing is not allowed between 18:00 and 07:59 hr. local time (16:00 – 05:59 UTC for summer season).
  - For aircraft equipped with engines with bypass ratio  $> 3$ , it is not allowed to plan take-offs between 23:00 and 06:59 hr. local time (21:00 – 04:59 UTC for summer season).
3. Aircraft which are certificated in accordance with the noise standards of ICAO Annex 16 Chapter 3, for which the margin of the sum of the three certification noise levels, relative to the sum of the three applicable ICAO Annex 16 Chapter 3 certification noise limits, is more than 5 EPNdB:
  - No restrictions.

It is noted that, if required for noise control purposes, the operating restrictions as specified above may be amended.

### RNAV 1 (P-RNAV) requirement for all flights to and from Schiphol

The Netherlands requires operational RNAV 1 (P-RNAV) approval for all IFR flights at all times to and from Schiphol. More information can be found in AIC-A 02/11, 19 MAY 11.

### Preferred aircraft types

In view of severe noise-related capacity constraints for the night and early morning periods, as well as the need to minimize noise impact on the environment, it is of essential importance that noise of each aircraft movement during night and early morning is as low as possible. Aircraft operators are therefore urged to use the quietest possible aircraft types for night and early morning flights. In addition, in respect of legal limits on aircraft emissions, it is of the utmost importance that aircraft operators use the cleanest possible aircraft for all operations at Amsterdam Airport Schiphol.

It is noted that Amsterdam Airport Schiphol has adopted and will continue to develop a policy to further encourage the use of quieter (and cleaner) aircraft, for instance through its airport charges system which includes reductions and surcharges based on certification noise levels.

## Capacity declaration Amsterdam Airport Schiphol; summer 2018

### Environmental capacity; available number of slots for Commercial Aviation

The number of slots available for landing and take-off operations of Commercial Aviation during the summer season 2018 (March 25, 2018 through October 27, 2018; 31 weeks) is specified in the table below. For the summer season, local time equals UTC + 2 hours.

*Available number of slots and movements for Commercial Aviation; summer season 2018  
(March 25, 2018 through October 27, 2018)*

	<b>Total number of departures and arrivals</b>	<b>Number of night departures and arrivals</b>
Movements	313,740	22,000
Planning limit (slots)	313,740	23,219

The following definitions apply:

Commercial Aviation:	Flights performed by an air carrier, providing scheduled flights, programmed charters or ad hoc flights which are open for individual bookings for passengers and/or freight and/or mail, including positioning flights which are directly linked to the operation of these flights.
General Aviation:	All aviation except commercial aviation. Including but not limited to business aviation, air taxi operations and technical flights.
Night departure slot:	Departure slot in the period 22:40 – 06:59 LT (20:40 – 04:59 UTC)
Night arrival slot:	Arrival slot in the period 23:00 – 07:19 LT (21:00 – 05:19 UTC)
Night slot:	Either a night departure slot or a night arrival slot
Night movement:	Departure or arrival with a runway time in the period 23:00 – 06:59 LT (21:00 – 04:59 UTC)
Planning limit:	Total number of slots available for allocation provided that all applicable requirements are met, as determined by the slot coordinator.

The numbers of slots and movements as specified in the above table are based on (i) the upcoming legally binding maximum of 500,000 aircraft movements in Commercial Aviation during an operational year (1st November through 31st October), of which no more than 32,000 are night movements and on the (ii) "Tijdelijke regeling van de Staatssecretaris van Infrastructuur en Milieu, van 8 mei 2017, nr. IENM/BSK-2017/107529, houdende vaststelling van vervangende grenswaarden voor de geluidbelasting in de handhavingspunten passend bij een maximum aantal vliegbewegingen handelsverkeer in de nacht van 32.000 voor het gebruiksjaar 2018 op de luchthaven Schiphol (Tijdelijke regeling volumeplafond nachtvluchten Schiphol)."



## Nominal operational runway capacity

For slot allocation purposes for both Commercial and General Aviation, the operational runway capacity for the summer season 2018 has been determined as follows:

ATM mode <sup>1</sup>	Possible within period from – to (UTC)	Nominal capacity per hour		Nominal capacity per 20 minutes	
		IFR Arrivals	IFR Departures	IFR Arrivals	IFR Departures
Day; departure peak mode (S)	05:00 – 19:39	36	74	12	25
Day; arrival peak mode (L)	05:00 – 19:39	68	38	23	13
Day; off peak mode (O)	04:00 - 04:39	24	30	8	10
	04:40 - 04:59	24	40	8	14
	05:00 - 20:39	36	40	12	14
	20:40 – 20:59	36	25	12	9
Night mode (N)	21:00 - 03:59	24	25	8	9

Coordination of runway capacity will be based on

- Constraints for 20 minutes periods, and
- For periods of equal ATM mode with a minimum duration of one hour – constraints on rolling hours, i.e. each 60 minute interval that occurs within that ATM mode, with a stepsize of 20 minutes, will have a constraint on capacity.

Additional requirements:

- Arrival and departure peak modes should not overlap.
- Each arrival peak mode period shall be separated from a preceding departure peak mode period by an off peak mode period. Between the first departure and arrival peak, the duration of this off peak mode period should be at least 30 minutes. The duration of this off peak mode period between any other departure and arrival peak shall be at least 20 minutes.
- Each departure and arrival peak mode shall have a minimal duration of 40 minutes, except for the first peak mode at 05:00 UTC, which has a minimal duration of 20 minutes.
- Slots should be requested and will be allocated per 5 minutes.

<sup>1</sup> Departure peak mode: one runway is used for landings, two runways for take-offs. Day arrival and departure procedures are applied.  
Arrival peak mode: two runways are used for landings, one runway for take-offs. Day arrival and departure procedures are applied.  
Off peak mode: one runway is used for landings, one runway for take-offs. Day arrival and departure procedures are applied.  
Night mode: one runway is used for landings, one runway for take-offs. Night arrival and departure procedures are applied.

- In the bracket list, that forms integral part of this declaration, the number of available arrival and departure slots for any 20 minute interval and per rolling hour is shown. This capacity depends on the operational runway capacity for the different ATM modes and the agreed peak- and off-peak times for the day period and should meet the mentioned additional requirements. The bracket list for the twenty-four hours period, in accordance with the above table, is specified in Attachment 1.

The bracket list will be endorsed together with this capacity declaration.

## Additional requirements and conditions

1. This declaration for summer 2018 is based on a total assumed number of 185,000 movements (Commercial Aviation only) during the winter season 2017/2018 (October 29, 2017 through March 24, 2018, 21 weeks), in accordance with the capacity declaration for winter 2017/2018. If the actual number of movements in said period is less than 185,000, Schiphol will decide, taking into account the input received from the OSO-parties in August 2017, whether the unused capacity will be added to the planning limit of 313,740 slots for summer 2018. The manner and to which degree unused capacity from winter 2017/2018 will be transferred will be determined by Schiphol in the third week of February 2018. The actual transfer, if any, will take place after the 24<sup>th</sup> of March 2018.

In relation to the transfer of night capacity, the following applies: The declaration for summer 2018 is based on a total number of 10,735 night slots (Commercial Aviation only) during winter 2017/2018 (October 29, 2017 through March 24, 2018, 21 weeks), in accordance with the capacity declaration for winter 2017/2018. If the number of night movements in said period is less than 10,000 movements, the difference will be added to the planning limit of 23,219 night slots for summer 2018.

2. Based on the legally binding noise limits "Lnight" in the legislation mentioned above, a target of 32,000 actual night movements (Commercial Aviation only) during the operational year 2018 should be taken into account for the allocation of night slots.
3. It is noted that for the purpose of the above provision, night slots imply departure slots in the bracket 22:40 – 06:59 LT (winter 21:40 – 05:59 UTC; summer 20:40 – 04:59 UTC) and arrival slots in the bracket 23:00 – 07:19 LT (winter 22:00 – 06:19 UTC; summer 21:00 – 05:19 UTC).

## Explanatory remarks

1. It is noted that operational year 2018 should be considered a transition period prior to adoption of the new legislation. Procedures and policies, especially regarding night slots and night movements, may be revised for future capacity declarations.
2. Some supplemental information which is relevant for operators planning operations at Amsterdam Airport Schiphol is provided in Attachment 2.

# Attachment 1: Bracket list summer 2018

Time from [UTC]	Time to [UTC]	# Arrivals	# Departures	# Rolling hour Arr	# Rolling hour Dep
0:00	0:15	8	9	-	-
0:20	0:35	8	9	-	-
0:40	0:55	8	9	24	25
1:00	1:15	8	9		
1:20	1:35	8	9		
1:40	1:55	8	9		
2:00	2:15	8	9		
2:20	2:35	8	9		
2:40	2:55	8	9		
3:00	3:15	8	9		
3:20	3:35	8	9		
3:40	3:55	8	9		
4:00	4:15	8	10	-	-
4:20	4:35	8	10	-	-
4:40	4:55	8	14	-	-
5:00	5:15	12	25	-	-
5:20	5:45	18	20	-	-
5:50	5:55	11	6	-	-
6:00	6:15	23	13	68	38
6:20	6:35	23	13		
6:40	6:55	23	13		
7:00	7:15	23	13		
7:20	7:35	12	25	36	74
7:40	7:55	12	25		
8:00	8:15	12	25		
8:20	8:35	12	25		
8:40	8:55	12	14	-	-
9:00	9:15	23	13	-	-
9:20	9:35	23	13	-	-
9:40	9:55	12	25	36	74
10:00	10:15	12	25		
10:20	10:35	12	25		
10:40	10:55	12	14	-	-
11:00	11:15	23	13	68	38
11:20	11:35	23	13		
11:40	11:55	23	13		



12:00	12:15	12	25	36	74
12:20	12:35	12	25		
12:40	12:55	12	25		
13:00	13:15	12	14	-	-
13:20	13:35	23	13	68	38
13:40	13:55	23	13		
14:00	14:15	23	13		
14:20	14:35	12	25	36	74
14:40	14:55	12	25		
15:00	15:15	12	25		
15:20	15:35	12	25		
15:40	15:55	12	25		
16:00	16:15	12	14	-	-
16:20	16:35	23	13	68	38
16:40	16:55	23	13		
17:00	17:15	23	13		
17:20	17:35	23	13		
17:40	17:55	23	13		
18:00	18:15	12	25	36	74
18:20	18:35	12	25		
18:40	18:55	12	25		
19:00	19:15	12	25		
19:20	19:35	12	25		
19:40	19:55	12	14	36	40
20:00	20:15	12	14		
20:20	20:35	12	14		
20:40	20:55	12	9	-	-
21:00	21:15	8	9	24	25
21:20	21:35	8	9		
21:40	21:55	8	9		
22:00	22:15	8	9		
22:20	22:35	8	9		
22:40	22:55	8	9		
23:00	23:15	8	9		
23:20	23:35	8	9	-	-
23:40	23:55	8	9	-	-

This bracket list summer 2018 resembles the available slots per 20 minutes and per rolling hour, in accordance with the underlying capacity declaration summer 2018 and the current distribution of historical slots. Alternations to the bracket list summer 2018 are possible, provided that it is in accordance with the declaration. The bracket list summer 2018 is part of the declaration. No changes to the bracket list are possible after the endorsement of the final version of this capacity declaration, which will be at least seven days before the IATA Initial Submission Date.

Note that due to technical limitations rolling hours containing the transition to the next day cannot be defined. Therefore only 20 minutes capacities are defined for 23:20-0:40 hours UTC.

## Attachment 2: Supplemental information

In addition to the capacity limitations, aircraft operators should take into account that the operating restrictions as specified below are effective at Amsterdam Airport Schiphol.

### Operating restrictions based on certificated noise levels

1. Aircraft which are certificated in accordance with the noise standards of ICAO Annex 16 Chapter 2:
  - Take-off and landing is not allowed.
2. Aircraft which are certificated in accordance with the noise standards of ICAO Annex 16 Chapter 3, for which the margin of the sum of the three certification noise levels, relative to the sum of the three applicable ICAO Annex 16 Chapter 3 certification noise limits, is not more than 5 EPNdB:
  - New operations are not allowed.
  - For aircraft equipped with engines with bypass ratio  $\leq 3$ , take-off and landing is not allowed between 18:00 and 07:59 hr. local time (16:00 – 05:59 UTC for summer season).
  - For aircraft equipped with engines with bypass ratio  $> 3$ , it is not allowed to plan take-offs between 23:00 and 06:59 hr. local time (21:00 – 04:59 UTC for summer season).
3. Aircraft which are certificated in accordance with the noise standards of ICAO Annex 16 Chapter 3, for which the margin of the sum of the three certification noise levels, relative to the sum of the three applicable ICAO Annex 16 Chapter 3 certification noise limits, is more than 5 EPNdB:
  - No restrictions.

It is noted that, if required for noise control purposes, the operating restrictions as specified above may be amended.

### RNAV 1 (P-RNAV) requirement for all flights to and from Schiphol

The Netherlands requires operational RNAV 1 (P-RNAV) approval for all IFR flights at all times to and from Schiphol. More information can be found in AIC-A 02/11, 19 MAY 11.

## Preferred aircraft types

In view of severe noise-related capacity constraints for the night and early morning periods, as well as the need to minimize noise impact on the environment, it is of essential importance that noise of each aircraft movement during night and early morning is as low as possible. Aircraft operators are therefore urged to use the quietest possible aircraft types for night and early morning flights. In addition, in respect of legal limits on aircraft emissions, it is of the utmost importance that aircraft operators use the cleanest possible aircraft for all operations at Amsterdam Airport Schiphol.

It is noted that Amsterdam Airport Schiphol has adopted and will continue to develop a policy to further encourage the use of quieter (and cleaner) aircraft, for instance through its airport charges system which includes reductions and surcharges based on certification noise levels.



Airport Coordination Netherlands  
For the attention of Mr H. Vreeburg  
Evert van de Beekstraat 23  
1118 CL LUCHTHAVEN SCHIPHOL

Drs. B.I. Otto  
Executive Vice President & COO

5.1.2e

4 July 2019  
BO.2019.010

Subject: Addendum capacity declaration summer season 2019

Dear Mr Vreeburg,

Please find enclosed the Addendum to the capacity declaration for the summer season 2019. The Addendum introduces Operational Limits and is intended to enable the full use of the available capacity, while minimizing the risk of exceeding the limits for the number of movements.

The Addendum was prepared following a request of three airlines that are members of the OSO (Operationeel Schiphol Overleg; Operational Management Committee Schiphol). The proposal was discussed in detail by the OSO and the airline members of OSO agreed on a procedure to return a proportional share of the additional slots that are allocated after the Addendum is issued, in the unlikely event that the limits on the number of movements are threatened to be exceeded (see attached agreement).

The proposal for the Addendum was submitted to the members of the Coordination Committee Netherlands for consultation. No objections or other remarks were raised by the members of the Coordination Committee Netherlands.

The upcoming legally binding maximum of 500,000 aircraft movements in Commercial Aviation during an operational year, of which no more than 32,000 are night movements, as well as the Schiphol Airport Traffic Decree establishing the limit of 32,000 night movements, are taken into account as constraints in this Addendum.

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A copy of this letter will be sent to the Ministry of Infrastructure and Water Management, ORS (Regional Consultation Committee Schiphol), LVNL (Air Traffic Control the Netherlands), SAOC (Schiphol Airline Operators Committee), BARIN (Board of Airline Representatives in the Netherlands), airlines KLM, Martinair, Transavia, TUIfly, Corendon Dutch Airlines and easyJet, as well as the Coordination Committee Netherlands.

5.1.2e

Yours sincerely,

5.1.2e

Executive Vice President & Chief Operations Officer

Enclosures:

- Addendum capacity declaration Amsterdam Airport Schiphol; summer 2019
- Agreement regarding additional slots allocated on basis of Addendum capacity declaration Summer 2019

Copies to:

- Members 'Operationeel Schiphol Overleg'
- 'Omgevingsraad Schiphol'
- Ministry of Infrastructure and the Environment:
  - Minister – Ms C. van Nieuwenhuizen
  - Directorate-General for Aviation and Maritime Affairs:
    - 5.1.2e
  - Human Environment and Transport Inspectorate:
    - 5.1.2e
- LVNI:
  - 5.1.2e
- SAOC:
  - 5.1.2e
- BARIN:
  - 5.1.2e
- KLM:
  - 5.1.2e
- Martinair:
  - 5.1.2e
- Transavia:
  - 5.1.2e
- TUIfly:
  - 5.1.2e
- Corendon Dutch Airlines:
  - 5.1.2e
- easyJet:
  - 5.1.2e
- Coordination Committee Netherlands:
  - 5.1.2e



## Agreement regarding additional slots allocated on basis of Addendum capacity declaration Summer 2019

### Introduction

This document specifies the details of the "lock on the door" agreement, when an excess of the 500K limit would be reached by the end of Operational Year 2019. This agreement was developed by the airline members of the OSO (Operationeel Schiphol Overleg; Operational Management Committee Schiphol) in relation to the proposed Addendum capacity declaration Summer 2019.

There are three facets that we must look at:

- 1) disclaimer
- 2) the order of magnitude of the possible exceeding
- 3) a distribution key from the lock on the door

#### 1) Disclaimer

After having given some thought to the mechanism that in an extreme case could lead to the 500K being exceeded, the following disclaimer seems appropriate:

As explained below, the only situation in which exceeding the 500K limit could occur in Operational Year 2019 is the deliberate flight of large quantities of No-Recs by one (or more) airlines at Schiphol. Assuming that this deliberate abuse is not carried out by OSO members, it is therefore a very undesirable situation that the OSO members must take responsibility for the deliberate violation of rules by parties that would cause large quantities of No-Recs at Schiphol and would therefore be the sole cause of exceeding of the 500K limit. Therefore the following story should always be preceded by first addressing the person who caused the extreme amount of No-Recs. If there is no hearing or no action to resolve the problem by that party / parties, the OSO members will take action and commit themselves to the "lock on the door" procedure below.

#### 2) The order of magnitude

Given the Operational Limit, the 500K limit can never be exceeded due to movements due to allocated slots for the seasons W18/19 and S19. This risk is 0 and is equal to the risk of being exceeded by allocated slots at the moment (i.e. prior to the introduction of the Operational Limit). This is because the original slot transfer from the PL has already been resolved at this time.

The only risk of exceeding it is an extreme amount of No-Recs (so movements without allocated slot). These No-Rec movements must be added on top of the PL and in the addendum situation on top of the Operational Limit. The 500K of movements is therefore the sum of "movements due to allocated slots (capped by the Operational Limit)" + "No-Recs".

An additional uncertainty representing a possible risk of exceeding the volume cap is the number of movements that will be realized during the first days of W19/20, which are part of the Operational Year 2019.

Within the category "movements due to allocated slots (capped by the Operational Limit)" there are two 'mitigating' factors:

- There are 1,311 slots for which there is room within the 500K, but which have never been declared within Operational Year 2019. They can therefore never be allocated and never lead to movements.
- 9W and WW slots have been part of the allocated slots for a long time (WW until 14 May) and still (9W), but have not led to movements or only limited movement (No-Ops). No-Ops slots are not returned to the slot pool and cannot be reallocated. In fact, they are seen as "passed" and as "no movement", but this combination is then no reason to reuse the lock itself within the PL or the Operational Limit.

For the No-Recs, therefore, at least 1,311 ++ slots are available on top of the PL (and the Operational Limit). At least 1,311 ++ No-Recs must therefore take place during S19 in order to come close to a risk of exceeding the 500K movement limit. The state as presented on 13 June 2019 in the OSO is +/- 200 No-Recs, the data quality of which still needs to be investigated.

By keeping a record of this progression on a monthly basis, we can timely track the order of magnitude of the potential issue and take action.

3) The distribution key of the lock on the door

By 'status' is meant: the total number of allocated slots in the slot portal per airline.

Determine the difference in allocated slots before and immediately after the activation of the Addendum and the introduction of the Operational Limit:

*Status at time before activation of Addendum*

*Status at time 3 days after issuance of Operational Limit* (3 days because this is the period within which offers from ACNL must be accepted).

We see the difference as the way in which the Operational Limit slots have been allocated per airline. The distribution of this in terms of percentage shows per airline to what extent it must contribute to the lock on the door.

*Calculation example for Airline X:* 303,619 AMS slots in total. Airline X = 500 slots = status at the time before activation of the Addendum

304,697 AMS slots in total. Airline X = 520 slots = status at time 3 days after issuance of Operational Limit (3 days because this is the period within which offers from ACNL must be accepted).

The required percentage reduction in movements by Airline X =  $20/1078 = 1.85\%$ .

Suppose that the exceeding of 500K by No-Recs increases to 100 movements, then this distribution key leads to a reduction in the number of movements by Airline X of:  $1.85\%$  of 100 = 1.85 movements, so rounded to 2 movements.

*Advantages of this option:*

A low number of slots will initially be allocated to a large number of airlines. With this, the solution for the lock on the door is distributed more evenly and more airlines are involved in the final application of the solution, but with a lower impact per airline.

*Disadvantages of this option:*

It is a snapshot early in the process. It may well be that later in the season the airline in question has already flown these flights and has nothing to reduce. It may also be the case that the airline has returned these slots to the pool, after which this slot has again been allocated to another airline that had a lower / no% in the distribution key 3 days after the Operational Limit was issued.

All in all, this option is the easiest solution to manage, with the greatest clarity of where the responsibilities lie at the earliest moment in the process. By keeping track of the No-Recs numbers monthly, we can keep the relevant parties well informed about the chance of having to activate the lock on the door scenario.

Should the total number of allocated slots fall back to the original Planning Limit during S19, it seems safe to say that the lock on the door can no longer be used in this way. After all, it was concluded at an earlier stage that the PL in the original capacity declaration gave no reason to set a lock on the door.



## Addendum capacity declaration Amsterdam Airport Schiphol; summer 2019

The capacity declaration for summer 2019 includes the following provisions (Additional requirements and conditions, item 1):

" 1. *This declaration for Summer 2019 is based on a total assumed number of 193,810 movements (Commercial Aviation only) during the winter season 2018/2019 (October 28, 2018 through March 30 2019, 22 weeks), in accordance with the capacity declaration for winter 2018/2019. The manner and to which degree unused capacity from winter 2018/2019 will be transferred will be estimated by Schiphol in the third week of February 2019 based on the following calculation:*

$UCW18 - (ACSS19 - PLS19)$

Where:

$UCW18$  = Unused Capacity of Winter '18/'19,

$ACSS19$  = Actual Coordinated Slots for Commercial Aviation for Summer '19, as determined in the third week of February 2019

$PLS19$  = Planning Limit of Summer '19 ( $\approx 303,619$ )

*The actual transfer, if any, will take place after the 30th of March 2019, and provided that the transfer will not lead to an increased number of historic rights.*

.."

It has been determined that following the abovementioned formula, no transfer of capacity from Winter 2018/2019 to Summer 2018 is possible, since the outcome of the formula is negative (-1,199). This was communicated to ACNL via a letter dated 4<sup>th</sup> April 2019 and also reported to the CCN during the 11<sup>th</sup> April 2019 meeting.

Nevertheless, there were 1,078 fewer commercial aircraft movements in winter 2018/2019 than the Planning Limit in the Capacity Declaration for winter season 2018/2019. This allows us to increase the maximum number of slots that can be allocated for the summer 2019 season by 1,078, whilst respecting the annual limit of 500,000 movements.

Therefore, ACNL is requested to increase the maximum number of slots that can be allocated for the summer 2019 season by 1,078. However, these slots can only be allocated under the condition that this does not lead to a further increase of historic rights beyond the planning limit for the summer 2019 season as stated in the capacity declaration.

Based on the above considerations, an Operational Limit is introduced in the capacity declaration Summer 2019. The text of the capacity declaration is therefore revised as follows.

- *In paragraph 1 the definition of the Operational Limit is added:*

**Operational Limit:** The total number of slots available for the applicable season after the HBD. The coordinator shall take into account the Operational Limit by: (i) (re)allocating slots up to this limit, and (ii) not (re)allocating slots as long as the total number of allocated slots surpasses this limit.



- Paragraph 2 is replaced by the new text below.

## 2. Environmental capacity; available number of slots for Commercial Aviation

The number of slots available for landing and take-off operations of Commercial Aviation during the summer season 2019 (March 31, 2019 through October 26, 2019; 30 weeks) is specified in the table below. For the summer season, local time equals UTC + 2 hours.

*Available number of slots and movements for Commercial Aviation; summer season 2019  
(March 31, 2019 through October 26, 2019)*

	<b>Total number of departures and arrivals</b>	<b>Number of night departures and arrivals</b>
Movements	304,697	22,274
Planning limit (slots)	303,619	22,470
Operational limit	304,697	22,274

The numbers of movements as specified in the above table define the environmental capacity and are based on (i) the upcoming legally binding maximum of 500,000 aircraft movements in Commercial Aviation during an operational year (1<sup>st</sup> November through 31<sup>st</sup> October) and (ii) the legally binding maximum of 32,000 night movements.

Airport Coordination Netherlands  
To the attention of Mr. H. Thomassen  
Evert van de Beekstraat 23  
1118 CL LUCHTHAVEN SCHIPHOL

**Capacity declaration summer  
season 2022: addendum 3**

Mr. Drs. H. L. Buis  
Executive Vice President & COO

5.1.2e

June 30, 2022  
HB.2022.006

Dear Mr. Thomassen,

Please find enclosed a third addendum to the capacity declaration of Amsterdam Airport Schiphol (AAS) which has been published by ACNL on September 30, 2021 for IATA Northern Summer 2022 (S22). This addendum includes a mandatory, temporary capacity reduction parameter applicable to all commercial passenger operations, in line with the WASB sector best practice ("*Managing temporary reductions of airport capacity*") of July 17<sup>th</sup>, 2020. This parameter limits the volume of departing seats per day and is necessary to ensure a safe operational environment and it is proportionate to serve that goal. We trust that you will allocate the capacity to the aircraft operators in accordance with the limitations and requirements as specified in the capacity declaration and related addenda.

As communicated in our previous addendum, the values for the second period, August 1, 2022, up to and including August 28, 2022, were estimated in first instance. Now, with this addendum, we declare the values of the mandatory 'Temporary Terminal Parameter' for this period. Also for August 2022 we unfortunately foresee capacity constraints which, from the viewpoint of public safety and operational integrity, force us to take additional measures to those already taken, since the demand for airport capacity amply exceeds what AAS has available. I therefore request ACNL to impose this mandatory capacity reduction for commercial passenger operations at AAS.

For more detailed reasons and context on this matter, I kindly refer to our earlier communications in previous addenda. However, I would like to stress again that this is an unprecedented situation, unfortunately forcing us to take these steps. The additional parameter is mandatory, providing ground to ACNL and coordinators worldwide for granting justified non-utilization of slots ("*force majeure*") to those operations that are cancelled and meet the prerequisites in this period.

We trust in the continuing cooperation with you and our airline partners, but nevertheless reserve the right to introduce additional parameters if necessary. The impact of these steps is evaluated continuously.

Yours sincerely,  
H. L. Buis

5.1.2e

Executive Vice President & COO  
ROYAL SCHIPHOL GROUP

*Enclosure: 3<sup>rd</sup> addendum capacity declaration Amsterdam Airport Schiphol; Summer 2022.*

### 3<sup>rd</sup> Addendum capacity declaration Amsterdam Airport Schiphol; IATA summer 2022

The capacity declaration for summer 2022 shall take the following additional provisions into account:

- A 'Temporary Terminal Parameter' applies to flight operations with service type codes J / C / G / S / Q / B / R / O / L.
- This 'Temporary Terminal Parameter' equals a limitation of the volume of departing seats per day in the period of August 1, 2022, up to and including August 28, 2022, expressed on basis of calendar days.

August 2022 (updated)							
Mon	Tue	Wed	Thu	Fri	Sat	Sun	week
1	2	3	4	5	6	7	31
110,000	109,000	107,500	110,000	114,500	100,000	109,500	
8	9	10	11	12	13	14	32
115,000	115,500	114,500	116,500	121,500	107,500	116,500	
15	16	17	18	19	20	21	33
119,000	119,000	117,000	119,500	124,000	111,000	120,000	
22	23	24	25	26	27	28	34
124,500	124,000	121,500	122,500	128,500	116,000	122,000	

Note 1: This parameter is designed as a temporary measure to deal with the current imbalance of the operational supply and demand that is a consequence of the recovery of the traffic figures after the Covid-19 pandemic. The parameter in this addendum is projected to end at August 28, 2022. The parameter is mandatory. Following the WASB sector best practice, this provides a ground to ACNL for granting '*justified non-utilization of slots*'. AAS will take all reasonable steps to provide sufficient capacity to facilitate airline demand after the period for which this parameter is designed.

Note 2: the 'Temporary Terminal Parameter' does not affect nor replace the declared Operational Limitations as stated in the capacity declaration of S22 and any of the subsequent addenda.



Airport Coordination Netherlands  
To the attention of Mr. H. Thomassen  
Evert van de Beekstraat 23  
1118 CL Schiphol

**Capacity declaration winter  
season 2022: addendum**

Mr. Drs. H. L. Buis  
Executive Vice President & COO

5.1.2e

29 september 2022  
HB.2022.021

Dear Mr. Thomassen,

Please find enclosed an addendum to the capacity declaration of Amsterdam Airport Schiphol (AAS) which has been published by ACNL on May 12, 2022 for IATA Northern Winter 2022 (W22). This addendum includes a mandatory temporary capacity parameter applicable to all commercial passenger operations, in line with the WASB sector best practice (*"Managing temporary reductions of airport capacity"*) of July 17<sup>th</sup>, 2020. This parameter limits the volume of departing seats per day and is necessary to ensure a safe operational environment and it is proportionate to serve that goal. We trust that you will allocate the capacity to the aircraft operators in accordance with the limitations and requirements as specified in the capacity declaration and related addenda.

This addendum furthermore implements a so-called 'Temporary Operational Limit', which is to be effective for the period October 30<sup>th</sup>, 2022 up and to including March 25<sup>th</sup>, 2023. This additional parameter will provide ACNL a ground not to re-allocate slots that were returned to the slot pool during this period, to commercial passenger slots.

For AAS, the operational impact of the recovery of traffic figures after the Covid-19 pandemic is unprecedented and exceptional. The crisis has severely affected the extent to which we can facilitate this recovery in operational terms. I hereby refer to the capacity declaration of W22 in which AAS has reserved the right to introduce additional measures to regulate operational capacity in-season in the event of exceptional circumstances, such as the situation at hand. For the oncoming months, we foresee capacity constraints which, from the viewpoint of public safety and operational integrity, force us to take additional measures, since the demand for airport capacity amply exceeds what AAS has available. Therefore, I request ACNL to impose a mandatory capacity reduction for commercial passenger operations at AAS.

This 'Temporary Terminal Parameter' shall be effective from October 30<sup>th</sup>, 2022 up to and including March 25<sup>th</sup>, 2023 and shall consist of 2 consecutive periods as defined in the addendum. This addendum only defines the values for the first period, up to and including January 31<sup>st</sup>. Currently, the values for the remaining calendar days are estimated and therefore indicative. The capacity limitation shall be set for each individual period and will be communicated with you by November 2022.

I would like to stress that this is an unprecedented situation, unfortunately forcing us to take these steps. The 'Temporary Terminal Parameter' is mandatory, providing ground to ACNL and coordinators worldwide for granting justified non-utilization of slots (*"force majeure"*) to those operations that are cancelled and meet the prerequisites in this period.

We trust in the continuing cooperation with you and our airline partners, but nevertheless reserve the right to introduce additional parameters if necessary. The impact of these steps is evaluated continuously.

Yours sincerely,

H. L. B.

5.1.2e

Executive Vice President & COO  
ROYAL SCHIPHOL GROUP

*Enclosure: addendum capacity declaration Amsterdam Airport Schiphol; IATA winter 2022*

## Addendum capacity declaration Amsterdam Airport Schiphol; IATA winter 2022

The capacity declaration for winter 2022 shall take the following additional provisions into account:

- A 'Temporary Terminal Parameter' applies to flight operations with service type codes J / C / G / S / Q / B / R / O / L.
- This 'Temporary Terminal Parameter' equals a limitation of the volume of departing seats per day in the period of October 30<sup>th</sup>, 2022, up to and including January 31<sup>st</sup>, 2023, expressed on basis of calendar days.

October-November-December 2022							
MO	TU	WE	TH	FR	SA	SU	week
						30 OCT	43
						80.000	
31 OCT	01 NOV	02 NOV	03 NOV	04 NOV	05 NOV	06 NOV	44
86.500	78.500	78.500	83.500	83.500	75.000	82.500	
07 NOV	08 NOV	09 NOV	10 NOV	11 NOV	12 NOV	13 NOV	45
85.000	79.000	79.000	84.500	84.500	75.000	83.000	
14 NOV	15 NOV	16 NOV	17 NOV	18 NOV	19 NOV	20 NOV	46
87.000	80.500	80.500	85.500	84.500	76.000	84.000	
21 NOV	22 NOV	23 NOV	24 NOV	25 NOV	26 NOV	27 NOV	47
89.500	83.000	82.500	89.500	89.500	80.000	88.000	
28 NOV	29 NOV	30 NOV	01 DEC	02 DEC	03 DEC	04 DEC	48
89.000	82.000	83.000	89.000	89.500	80.500	89.000	
05 DEC	06 DEC	07 DEC	08 DEC	09 DEC	10 DEC	11 DEC	49
92.000	86.500	87.000	92.500	92.000	83.000	91.000	
12 DEC	13 DEC	14 DEC	15 DEC	16 DEC	17 DEC	18 DEC	50
83.500	78.500	79.000	85.000	85.000	76.500	83.000	
19 DEC	20 DEC	21 DEC	22 DEC	23 DEC	24 DEC	25 DEC	51
92.000	88.000	80.500	81.500	88.000	76.500	91.500	
26 DEC	27 DEC	28 DEC	29 DEC	30 DEC	31 DEC		52
85.500	79.000	84.000	84.500	88.500	93.000		



January 2023							
MO	TU	WE	TH	FR	SA	SU	week
						01 JAN	52
						89.500	
02 JAN	03 JAN	04 JAN	05 JAN	06 JAN	07 JAN	08 JAN	1
81.500	76.500	89.000	102.000	101.000	92.000	94.000	
09 JAN	10 JAN	11 JAN	12 JAN	13 JAN	14 JAN	15 JAN	2
90.500	91.000	94.000	94.500	92.500	83.000	87.000	
16 JAN	17 JAN	18 JAN	19 JAN	20 JAN	21 JAN	22 JAN	3
89.500	90.000	91.500	91.500	89.000	80.500	84.500	
23 JAN	24 JAN	25 JAN	26 JAN	27 JAN	28 JAN	29 JAN	4
87.000	86.500	88.000	88.000	86.000	77.000	82.500	
30 JAN	31 JAN						5
82.000	83.000						

(current estimation, to be published definitively per November 30, 2022)

February-March 2023							
MO	TU	WE	TH	FR	SA	SU	week
		01 FEB	02 FEB	03 FEB	04 FEB	05 FEB	5
		84.000	84.000	83.000	74.500	81.500	
06 FEB	07 FEB	08 FEB	09 FEB	10 FEB	11 FEB	12 FEB	6
83.500	83.500	82.000	77.000	77.000	68.000	78.500	
13 FEB	14 FEB	15 FEB	16 FEB	17 FEB	18 FEB	19 FEB	7
83.500	86.000	87.000	86.000	86.000	82.000	82.500	
20 FEB	21 FEB	22 FEB	23 FEB	24 FEB	25 FEB	26 FEB	8
84.000	86.500	90.000	89.000	95.500	91.500	86.000	
27 FEB	28 FEB	01 MAR	02 MAR	03 MAR	04 MAR	05 MAR	9
87.500	88.500	90.500	93.500	92.500	82.000	88.000	
06 MAR	07 MAR	08 MAR	09 MAR	10 MAR	11 MAR	12 MAR	10
79.000	77.500	80.000	82.000	81.500	73.000	80.000	

13 MAR	14 MAR	15 MAR	16 MAR	17 MAR	18 MAR	19 MAR	11
79.500	77.500	80.500	82.000	81.500	72.500	79.500	
20 MAR	21 MAR	22 MAR	23 MAR	24 MAR	25 MAR		12
81.000	78.000	81.500	84.000	83.500	74.000		

Note 1: This parameter is designed as a temporary measure to deal with the current imbalance of the operational supply and demand that is a consequence of the recovery of the traffic figures after the COVID-19 pandemic. The parameter is mandatory. AAS will take all reasonable steps to provide sufficient capacity to facilitate airline demand after the period for which this parameter is designed.

Note 2: the 'Temporary Terminal Parameter' does not affect nor replace the declared Operational Limitations as stated in the capacity declaration of W22.

Furthermore, the capacity declaration for winter 2022 shall take the following provisions into account:

- A 'Temporary Operational Limit' applies for flight operations with service type codes J / C / G / S / Q / B / R / O / L.
- The 'Temporary Operational Limit' equals a volume limitation of 125,000 slots and applies for the period of October 30<sup>th</sup>, 2022, up to and including March 25<sup>th</sup>, 2023.

Note: the 'Temporary Operational Limit' does not affect nor replace the declared Operational Limitations as stated in the capacity declaration of W22 for other operations or periods than mentioned in this addendum.



Airport Coordination Netherlands  
To the attention of Mr. H. Thomassen  
Evert van de Beekstraat 23  
1118 CL Schiphol

**Addendum Capacity  
Declaration S23**

Ruud Sondag  
CEO

5.1.2e

21 februari 2023  
RS.2023.007

Dear Mr. Thomassen,

Please find enclosed an addendum to the capacity declaration of Amsterdam Airport Schiphol (AAS) which has been published by ACNL on September 29, 2022, for IATA Northern Summer 2023 (S23). The addendum includes a mandatory 'Temporary Terminal Parameter' which applies to all commercial passenger operations, in line with the WASB sector best practice (*"Managing temporary reductions of airport capacity"*) of July 17, 2020. This parameter limits the volume of departing seats per day. It is necessary to ensure a safe operational environment and it is proportionate to serve that goal. We trust that you will allocate the capacity to the aircraft operators in accordance with the limitations and requirements as specified in the capacity declaration and related addenda.

This addendum furthermore includes a 'Temporary Operational Limit' for departing operations for the time brackets between 07:00-12:59 LT (05:00-10:59 UTC), 00:00-06:59 LT (22:00 (-1) - 04:59 UTC) and 13:00-23:59 LT (11:00-21:59 UTC), effective between March 26, 2023, up to and including May 14, 2023. This operational limitation provides ACNL ground not to re-allocate slots when these are returned to the pool to commercial passenger operations during this period when this limit is exceeded.

We regret this step, but this decision is needed despite all efforts AAS has made together with the parties involved to make major steps in increasing the capacity in the past months. The average volume of daily departing local passengers increased by 65% from 40,000 in the last winter period to 66,000 during the May holidays. On peak days, this number will be well over 70,000. However, safe and reliable operations depend on the overall capacity situation. After consultation with sector partners, we conclude that there is still a risk for remaining capacity shortages in this period, specifically week 14. These may put the stability of the passenger process at risk, potentially leading to long queues in the terminals. For more detailed reasons and context on this matter, I kindly refer to our earlier communications during recent Coordination Committee meetings.

We also foresee the risk of capacity constraints in the aviation sector that would stress the entire airport system beyond limits in the first weeks of S23. Schiphol wants to control these circumstances for as far as possible in order to ensure public safety and sustainable operational integrity. One example of this is to facilitate new airport employees of all co-makers to get properly acquainted with their new roles and to let them get used to crowds and peak demand in a gradually way. Schiphol believes that a 5% margin in the

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morning peaks helps to mitigate the starting up risks at check-in, security and border control and reduce the risk of unacceptable delays and large volumes of passengers missing their flights. I therefore request ACNL to implement the measures for commercial passenger operations at AAS.

I would like to stress again that this is an unprecedented situation that now asks for prudent measures in the interest of passengers, employees at the airport, the aviation sector and its operational partners.

We trust in the continuing cooperation with you and our airline partners to improve the reliability of the total system, but at the same time we reserve the right to introduce additional parameters if required. You can rest assured that we will be continuously evaluating the impact of these steps.

Yours sincerely, 5.1.2e  
ROYAL SCHIPHOL GROUP

5.1.2e

Ruud Sondag 5.1.2e  
CEO

## Addendum capacity declaration Amsterdam Airport Schiphol; IATA summer 2023

The capacity declaration for summer 2023 shall take the following provisions into account:

### Temporary Terminal Parameter

- A 'Temporary Terminal Parameter' applies to flight operations with service type codes J / C / G / S / Q / B / R / O / L.
- This 'Temporary Terminal Parameter' equals a limitation of the volume of departing seats per day in the period of March 26<sup>th</sup>, 2023, up to and including May 14<sup>th</sup>, 2023, expressed on basis of calendar days.

March 26 – May 14, 2023, 07:00 – 12:59 LT (05:00 – 10:59 UTC)							
MO	TU	WE	TH	FR	SA	SU	<i>week</i>
						26 MAR	12
						40,000	
27 MAR	28 MAR	29 MAR	30 MAR	31 MAR	1 APR	2 APR	13
45,000	39,500	42,500	42,500	44,500	44,500	42,000	
3 APR	4 APR	5 APR	6 APR	7 APR	8 APR	9 APR	14
41,000	37,000	38,500	38,500	40,500	39,000	37,500	
10 APR	11 APR	12 APR	13 APR	14 APR	15 APR	16 APR	15
43,000	39,000	41,000	41,000	43,000	41,500	39,500	
17 APR	18 APR	19 APR	20 APR	21 APR	22 APR	23 APR	16
44,000	40,500	41,500	43,000	44,000	43,000	41,500	
24 APR	25 APR	26 APR	27 APR	28 APR	29 APR	30 APR	17
44,000	41,500	43,000	43,000	45,000	43,500	41,500	
1 MAY	2 MAY	3 MAY	4 MAY	5 MAY	6 MAY	7 MAY	18
47,000	44,500	45,000	46,500	47,000	47,000	44,500	
8 MAY	9 MAY	10 MAY	11 MAY	12 MAY	13 MAY	14 MAY	19
46,500	44,500	44,000	45,000	47,500	46,000	45,000	

Week 14: April 3 – April 9, 2023 (24h)							
MO	TU	WE	TH	FR	SA	SU	<i>week</i>
3 APR	4 APR	5 APR	6 APR	7 APR	8 APR	9 APR	14
99,000	93,500	95,500	95,500	98,000	89,000	97,500	

Note 1: This parameter is designed as a temporary measure to deal with the current imbalance of the operational supply and demand that is a consequence of the recovery of the traffic figures after the COVID-19 pandemic. The parameter is mandatory. AAS will take all reasonable steps to provide sufficient capacity to facilitate airline demand after the period for which this parameter is designed.

Note 2: the 'Temporary Terminal Parameter' does not affect nor replace the declared Operational Limitations as stated in the capacity declaration of 523 and any of the subsequent addenda.

#### Temporary Operational Limit

- A 'Temporary Operational Limit' applies to departing flight operations with service type codes J / C / G / S / Q / B / R / O / L.
- The 'Temporary Operational Limit' equals a volume limitation in terms of departure slots per day between 07:00-12:59 LT (05:00-10:59 UTC) and the time brackets between 0:00-06:59 LT and 13:00-23:59 LT (22:00 (-1) - 04:59 UTC and 11:00-21:59 UTC), depending on maximum available capacity.
- The 'Temporary Operational Limit' applies to the period of March 26, 2023, up to and including May 14, 2023.

Departure slots 07:00 – 12:59 LT (05:00 – 10:59 UTC)							
MO	TU	WE	TH	FR	SA	SU	week
						26 MAR	12
						220	
27 MAR	28 MAR	29 MAR	30 MAR	31 MAR	1 APR	2 APR	13
251	223	237	242	245	243	228	
3 APR	4 APR	5 APR	6 APR	7 APR	8 APR	9 APR	14
224	214	214	218	224	213	205	
10 APR	11 APR	12 APR	13 APR	14 APR	15 APR	16 APR	15
239	221	232	233	239	225	213	
17 APR	18 APR	19 APR	20 APR	21 APR	22 APR	23 APR	16
243	234	233	248	244	234	225	
24 APR	25 APR	26 APR	27 APR	28 APR	29 APR	30 APR	17
244	233	241	243	252	235	226	
1 MAY	2 MAY	3 MAY	4 MAY	5 MAY	6 MAY	7 MAY	18
260	251	252	265	260	255	244	
8 MAY	9 MAY	10 MAY	11 MAY	12 MAY	13 MAY	14 MAY	19
257	251	248	256	266	248	249	



Departure slots 0:00 – 06:59 LT & 13:00 – 23:59 LT (22:00 (-1) – 04:59 UTC & 11:00-21:59 UTC)							
MO	TU	WE	TH	FR	SA	SU	week
						26 MAR	12
						350	
27 MAR	28 MAR	29 MAR	30 MAR	31 MAR	1 APR	2 APR	13
340	349	337	341	351	307	365	
3 APR	4 APR	5 APR	6 APR	7 APR	8 APR	9 APR	14
343	330	337	334	337	282	345	
10 APR	11 APR	12 APR	13 APR	14 APR	15 APR	16 APR	15
361	361	343	358	358	304	362	
17 APR	18 APR	19 APR	20 APR	21 APR	22 APR	23 APR	16
356	359	357	359	383	326	383	
24 APR	25 APR	26 APR	27 APR	28 APR	29 APR	30 APR	17
378	377	375	381	375	334	381	
1 MAY	2 MAY	3 MAY	4 MAY	5 MAY	6 MAY	7 MAY	18
378	379	372	385	392	326	384	
8 MAY	9 MAY	10 MAY	11 MAY	12 MAY	13 MAY	14 MAY	19
382	377	375	380	389	336	386	

Note: the 'Temporary Operational Limit' does not affect nor replace the declared Operational Limitations as stated in the capacity declaration of S23 for other operations or periods than mentioned in this addendum.



## ICP Capacity Dashboard Review 2023-2025



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## Revision History

Version	Date	Authors	Description of Changes
V1.0	06.03.2023	5.1.2e	First draft
V1.1	20.03.2023	5.1.2e	Second Draft Incorporated feedback from ICP Team
V1.2	05.04.2023	5.1.2e	Final Report Draft
V1.3	11.04.2023	5.1.2e	Final Report
V1.4	12.04.2023	5.1.2e	Final Report – ICP team updates

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## Background

In accordance with the Dutch Slot Allocation Decree (act 5b), the Dutch Ministry of Infrastructure and Water Management has requested Schiphol to validate its current capacity analysis process and ensure a clear link between this process and the capacity declaration. AiQ Consulting, an independent consultant, has been appointed by AAS to conduct a study to evaluate and validate the current ICP capacity analysis process. This study will focus on recommendations for capacity calculation improvements and additional considerations on capacity analysis to better establish operational constraints and potentials.

The project began in December 2022 and is expected to last twelve weeks (excluding two weeks Christmas Embargo), with a delivery for review in early March and the final report following.

The goal of this project is to investigate the existing ICP Report and make recommendations, not only from a technical standpoint (capacity assessment methodology, method suitability, data collected, tools used, etc.), but also from a qualitative perspective (overall theme, presentation style, etc.)

## Executive Summary

This study is a review of Amsterdam Schiphol Airport's Integral Capacity Planning (ICP) process which includes as its output the "ICP Capacity Dashboard 2023-2025" (findings) & "ICP Framework 2023-2025" (assumptions). The aim of the study is to review the methods and outcomes of the ICP process, and provide unbiased conclusions and recommendations on its theoretical and practical capacity assessments.

Overall, the ICP is deemed to have achieved its stated intention and objectives in providing an open, transparent, and adequate method of analysing Schiphol airport's demand and capacity. The ICP provides a comprehensive view of the airport's processes with an in-depth calculation of peak week demand and capacity limits. The following paragraphs concisely discuss key takeaways with detailed conclusions and recommendations found in Section 7.

The assessment methodology used for in the ICP process is generally suitable. Certain processors in the report such as departure Check-in & Security were limited to a single scenario which included all assets being available, fully operative, and with no-delay (perturbation) circumstances. This can lead to stating the best case, for the given demand, and undetected bottlenecks which could be easily identified if some sensitivity analysis is undertaken. Other processors, particularly arrivals, consider sensitivity analysis in so much as demand profile perturbation is used. The use of a discrete simulation for terminal modelling can help address this challenge which is planned for the next ICP.

Stakeholder discussions have highlighted that a few airlines are already experiencing capacity constraints in areas that are highlighted as bottlenecks or possible bottlenecks in the ICP. Whilst the ICP process identifies the bottlenecks it does not identify the impacts or their scale and the consequence of any impact on prior or post processors. The existing ICP tools & methodology whilst sufficient to demonstrate demand bottlenecks against stated capacity has its limitations in so much as it is analytics based, each processor is analysed in isolation and is unconstrained. Therefore, they Stakeholders would support the adoption of a discrete simulation tool and methodology for terminal processor capacity assessment which would have the advantage of being processor dependant and capacity constrained. It is therefore recommended to carry out a fully integrated capacity assessment through industry standard capacity assessment tools giving a holistic picture of the bottlenecks and depict the impacts associated with it. It is understood the ICP Team is to adopt such a tool & methodology for the next ICP known as CAST, an internationally recognised product used by the likes of Heathrow, Dubai, Hong Kong & Changi. This will address the airlines and stakeholder's concerns and will help to understand the impact on operations and in the wider decision-making process including mitigation strategies, asset replacement and future investment.

Whilst not within then current scope of the ICP, it is highly recommended to communicate to the stakeholders and the wider audience the measures, where known, that are or will be implemented to mitigate the bottlenecks identified in each ICP analysis. This mode of active engagement will support the stakeholders to understand their own action plan and measures to be implemented to mitigate the capacity constraints and tailor their operational procedures accordingly.

In June 2022 the government announced restrictions to AMS traffic. This was during the last ICP process but was not considered at that time. It will be necessary to develop a new demand scenario (flight schedule) to reflect the impact of this movement decrease and include no later than next ICP process.

Finally, Schiphol currently applies only runway and WIBO arrival limits. There are currently no stand or terminal limits in place. The results that show bottlenecks would imply that it would be beneficial for Schiphol to consider the addition of such stand or terminal limits. Limits should only be used when necessary, according to the scheduling principle, and this is to manage those critical areas with limited capacity such as departure security or arrival non-Schengen immigration to ensure that both airlines achieve satisfactory performance and passengers receive satisfactory service.



## Table of Acronyms

<b>AAS</b>	Amsterdam Airport Schiphol
<b>ACL</b>	Airport Coordination Limited(UK)
<b>ACNL</b>	Airport Co-ordination Netherlands
<b>AiQ</b>	AiQ Consulting
<b>AMS</b>	Amsterdam Schiphol Airport IATA Code
<b>ATC</b>	Air Traffic Control
<b>ATM</b>	Air Traffic Movement
<b>BC</b>	Border Control
<b>BRR</b>	Baggage Reclaim Ruimte
<b>CAT</b>	Category
<b>DH</b>	Departure Hall
<b>ECAC</b>	European Civil Aviation Conference
<b>EES</b>	Entry Exit System
<b>EU</b>	European Union
<b>FACT</b>	Forecast, Analysis & Capacity management Team
<b>GSE</b>	Ground service equipment
<b>HAL</b>	Heathrow Airport Limited
<b>HBS</b>	Hold Baggage Screening
<b>IATA</b>	International Air Transport Association
<b>ICI</b>	Internet Check In
<b>ICP</b>	Integral Capacity Plan (AAS)
<b>LH</b>	Long Haul
<b>LoS</b>	Level of Service
<b>MCT</b>	Minimum Connect Time
<b>MUP</b>	Make Up Position
<b>NABO</b>	Narrow bodied aircraft
<b>NATS</b>	National Air Traffic Services (UK)
<b>NL</b>	Netherlands
<b>NS</b>	Non-Schengen
<b>OTP</b>	On Time Performance
<b>PAX</b>	Passengers
<b>QTC</b>	Quick Turnaround Concept
<b>RASAS</b>	Regulation Aircraft Stand Allocation Schiphol
<b>RMO</b>	Runway Mode of Operation
<b>RWY</b>	Runway
<b>SF</b>	Security Filter
<b>SH</b>	Short Haul
<b>SNBV</b>	Schiphol Netherlands BV
<b>STD</b>	Scheduled Time of Departure
<b>ULD</b>	Unit load device (baggage container)
<b>VFR</b>	Visiting Family and Relatives
<b>WIBO</b>	Wide-bodied aircraft



## 1. Introduction

AiQ Consulting, an independent consultant, was appointed by Amsterdam Airport Schiphol to review and evaluate the current ICP capacity assessment process. The study will focus on conclusions and recommendations for capacity calculation improvements and additional considerations on capacity analysis to better establish practical constraints.

The objective of this project is to investigate the existing ICP Report and make recommendations, not only from a technical standpoint, but also from a qualitative perspective.

A specific section in this document outlines how the existing capacity constraints at Schiphol compare Heathrow, another level 3 airport with similar constraints, as well as potentially broader experience with a Capacity Declaration process.

### 1.1 Objectives

The objective of this project is to investigate the existing ICP process, focusing on both its technical aspects including capacity assessment methodology, method suitability, data collected, as well as the way in which it is presented in its overall theme and presentation style.

The technical review will help to identify how each processor's (i.e. Check-in, Security Gates, Stands, Immigration, etc) demand is currently evaluated against the available capacity and where improvements could be made, with the qualitative review highlighting aspects that could be improved to ensure the report's message is received and processed correctly.

### 1.2 Inputs

The input for the review process was the ICP Report titled "ICP Capacity Dashboard 2023-2025", supported by an assumption's framework document titled "ICP Framework 2023-2025".

After consulting with each Capacity Manager, it was understood that each process had their own input and calculation tools shown below:

Area	Input data	Process Tool/Software
<b>Market Analysis</b>	Previous schedules Forecasted Schedules from airlines Forecast traffic data	Excel
<b>Airside</b>	Forecasted Schedule Airside Assumptions	Excel
<b>Terminal</b>	Forecasted Schedule Terminal Assumptions	Beontra and Excel
<b>Security and Border Control</b>	Output from Beontra simulation. Security and Immigration Assumptions	Enterprise Dynamics and Excel
<b>Landside</b>	Forecasted Schedule Landside Assumptions	Excel
<b>Baggage</b>	Forecasted Schedule Baggage assumptions ( <i>baggage factor, allocations, show-up profiles etc</i> ) Load file ( <i>derived from forecasted schedule and baggage assumptions</i> )	InControl system data Simulation software Excel

It is consistently recommended through the document to include an extensive section into the Framework document (or an Appendix to the Dashboard) that explains thoroughly not only the calculation processes for the different areas of analysis but also how the assumptions were obtained or in what are they based on.

## 1.3 Deliverables / Outputs

The key AiQ deliverable will be the “ICP Capacity Dashboard Review” report which will include:

- The Technical review of the ICP Dashboard Document
- The Qualitative review of the ICP Dashboard Document
- Technical review findings about existing capacity assessment methodology and calculations
- Comparison with other Level 3 airports
- Conclusions and recommendations including potential improvements to the current method

AiQ will generate a PowerPoint slide deck with key findings and summary for high level presentation purposes at the appropriate level of audience.

## 1.4 Assumptions / Exclusions

Airspace capacity assessment is excluded from this review.

## 1.5 AiQ Team



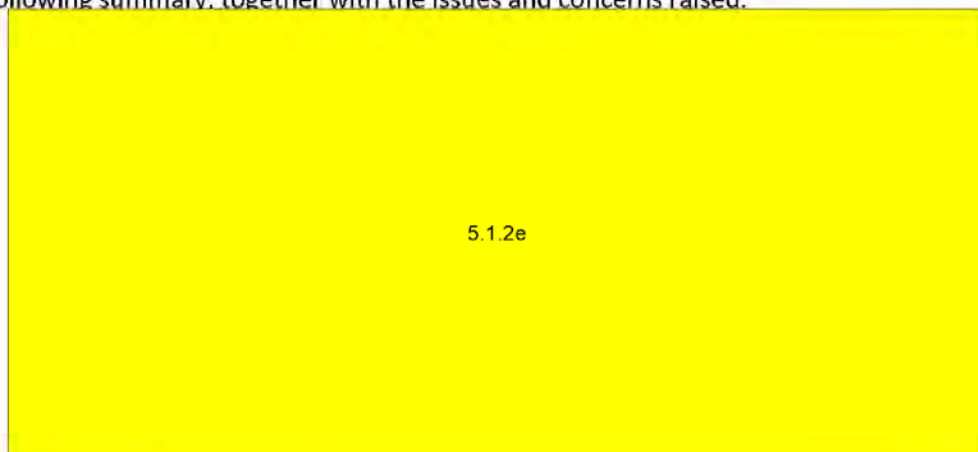
## 2. Stakeholders

### 2.1 Key Stakeholders / Governance

AiQ has engaged in conversations with the AAS core ICP team including AAS capacity managers and Market Analysts, as well as members from the airlines that are part of the ICP Working Group and Steering Board.

#### 2.1.1 Internal Stakeholders

Below is a list of the internal stakeholders consulted follows below. The results of these discussions are included in the following summary, together with the issues and concerns raised.



#### 2.1.2 External Stakeholders



### 2.2 Stakeholder Feedback Summary

The common storyline of the airline engagements echoed the fact that the ICP process could be made more holistic, and solutions driven rather than identifying bottlenecks alone. The context needs to narrate the impacts on operation where bottlenecks are identified, and the costs associated.

Furthermore, a lot of the concerns are around how and when effective planning decisions would be made to resolve these established constraints. The policy decisions around capacity capping proves ineffective for airlines to plan their growth strategy and resource planning.



### 3. ICP Process Review- Qualitative Assessment

#### 3.1 Overall theme

The report is organised in the hierarchy of modelling analysis with details and results explained although a coherent structure with a storyline may be developed.

##### 3.1.1 High level objective

The analysis contains largely detailed graphs, however, a more descriptive context setting, and the approach of the overall methodology would set the introduction better. Further to the in-depth analysis outputs, it is vital to describe the key takeaways on each page, section, and the overall document. This may be done in line with the audience of this report so that the reader is able to quickly determine the impacts on decision making aspects like resource, infrastructure, and capital expenditure requirements. In understanding the report context better, being aware of any caveats is crucial and therefore it is suggested that all exceptions and omissions shall be stated explicitly for absolute clarity.

##### 3.1.2 Detail

The report consists high level of detail with various scenarios and comparisons. It is therefore essential that the core areas of the analysis be sectioned and structured to easy comprehension. Suitable style of indexing and cross referencing is recommended so that coherency is maintained. As all modelling is based on real data processed to extract suitable input parameters along with educated assumptions, it is vital to state that the calculations are based on adequate assumptions for confidence on outputs.

The other key aspect of modelling boils down the data processing and methodology. Further emphasis on how detailed the processing is important so that the implication of results is clear i.e., in this case the model follows isolated process capacity analysis where the demand generated is not interdependent. In future models using industry standard software (as mentioned by ICP colleagues) this would follow different simulation sequence thereby by giving slightly different outputs as compared to the unconstrained modelling technique used.

##### 3.1.3 Conclusions

Whilst the adopted methodology is consistent and best fit as of today, it is worth validating the conclusions so that the future assessments based on the outputs are more reliable when extrapolated. For example, is it reasonable to conduct a study from the existing road model to project the future congestion airside?

Information on actual existence of capacity may be narrated in detail highlighting the risks, safety and costs associated in achieving it. Establishing the capacity issues and how much usable headroom is a key metric to understand the mitigations currently in use and are those mitigations going to be effective in the future. As an example, they safe limits (obvious) and theoretical limits (not so obvious) may be classified as good and bad capacity where a credit score matrix would help understand these differences to support operations better.

As mentioned above, on the mentioned capacity limits, the safe utilisation and risks around health and safety violations may be mentioned to understand the gravity of achieving such limits.

Cost being one of the decisive factors in all infrastructure and operations, it may be worth indicating towards how the airport assets can be used in a more effective manner. From the outputs of the modelling, although process changes are not directly a takeaway, brainstorming on how things can be done differently may be outlined that can be implemented in the future to improve the capacity.

## 3.2 Presentation style

### 3.2.1 Headings

The heading in each section conveys the topic on slide accurately. However, the referencing to the index or contents page could be made consistent. The sub-headings on each sheet are reflective of the subtopic and in cases where these are technical, further notes may be useful.

### 3.2.2 Consistency

Use of colour and signage are powerful ways of presenting a story where segments are clear, and differences could be highlighted well. Heading on each page must be relatable to the index page.

### 3.2.3 Readability

Units of measurement is vital in understanding graphs particularly and hence it is worth mentioning them on each graph with footnotes of how to read them. Results interpretation has been useful on each page although a note or indication to how this is contributing to the overall picture i.e., Executive summary is recommended.

### 3.2.4 Formatting

Text styles and fonts may be adjusted to the readable sizes with key factors or takeaways in bold, so the idea is conveyed with just a glance at the text whilst the detail is within the sentences. Consistency of texts styles, graphs and images is a great way of effective story telling. This may be given importance to sequence the ICP Report in an effective and coherent manner.

### 3.2.5 Image

The report could use more images to cross reference the outputs and impact of operation in specific areas or on a holistic picture give a geographical view of bottle necks and on ground issues. Diagrams and schematics showing gravity of issues if any (e.g., Reclaim area, pier widths etc) is useful to re-think operational processes.

### 3.2.6 Graphs

Although graphs have be tailored to maximise visual clarity, in some cases it is notably losing comparability from subsequent pages. Therefore, it is recommended that all graphs in a section use axis consistently and labelled for comprehension of results. Use of colours on demand lines and capacity lines on graph could be made consistent so that comparison across different section is easier.



## 4. ICP Process Review- Technical Assessment

### 4.1 Forecasted Flight Schedule analysis.

The ICP process is an analysis of the supply and demand at Schiphol in the coming years to understand and highlight Schiphol's capacity challenges.

The Forecast, Analysis & Capacity management Team (FACT) at Schiphol is responsible to create forecasted flight schedules for the upcoming 3 years with the help of airlines and relevant stakeholders. This will serve as a starting point for the demand estimation of the ICP.

The forecasting process is as follows:

- Analyse airline schedules provided. If no schedule was provided the one from the previous year is used (in this case due to Covid the year used is 2019).
- Reallocate flights depending on runway capacity or other constraints.
- Add flights to meet the total volume estimated.
- Verify aircraft fleet composition according to new deliveries and fleet orders.
- Update other factors to match assumptions (load factors, transfer factors, seats, etc)

For this ICP the total volume expected for 2023 and 2025 was dependent on different recovery scenarios. The final estimation declared that 2023 will have -5% of passenger volume compared to 2019- levels during the first half of the year and it is expected that will reach 2019-levels during holidays. For 2025 it is projected a +10% compared to 2019.

Among the different traffic scenarios presented for the ICP 2023-2025 it is noticed that there is not a scenario that contemplates the decrease in yearly movements to 440,000 movements as it has been approved by the Dutch Government on the 24<sup>th</sup> of June 2022. This mandate should be in place by November 2023 which means that traffic volumes for 2025 will be directly impacted by this restriction. However, the Framework of this ICP was delivered beginning of 2021 and the decrease was approved afterwards, hence the reduced cap could not be part of the ICP in this review. When the next ICP process begins, all latest insights on volume will be part of the scenarios.

It is useful to perform an analysis to understand how this decrease in movements could affect the future of Schiphol's traffic and if it could alleviate/worsen some of the existing bottlenecks or if it could surface new ones. Unfortunately, this means rerunning the ICP with new flight schedules, not an additional analysis on the current ICP.

Finally, from the schedules different weeks are analysed depending on the airport process that they relate to:

		Based on Flight Schedule				Based on Flight Schedule and different Load% and Trf% per week				
Season	week	Airspace	Airside: Stands	Simulation aircraft	Simulation Vehicles	week	Passenger Flow Terminal	Security and Border	Baggage	Landside
Summer 2023	29	✓	✓	✓	✓	26	✓ (Transfer)	✓ (Transfer)	✓ (Transfer)	
						29	✓ (Departure)	✓ (Departure)	✓ (Departure)	✓
						34	✓ (Arrival)	✓ (Arrival)	✓ (Arrival)	
Winter 2023/24	11	✓	✓			11				
Summer 2025 <small>base and scenario 1,2</small>	29	✓	✓	✓	✓	26	✓ (Transfer)	✓ (Transfer)	✓ (Transfer)	
						29	✓ (Departure)	✓ (Departure)	✓ (Departure)	✓
						34	✓ (Arrival)	✓ (Arrival)	✓ (Arrival)	
Winter 2025/26	11	✓	✓			11				

Table 1: ICP Processes and related weeks

These weeks are named "normative weeks" but there is no information on what does "normative" refers to in terms of volume of traffic/passengers etc. It would not be recommended to select a peak week to assess the airport's capacity from a planning point of view, nor would it be ideal to choose a "Business as Usual" type of week. The peak



week helps understand the worst-case scenario the operations would have to deal with, however, for planning purposes a typical busy day (95<sup>th</sup> percentile or 10<sup>th</sup>, 20<sup>th</sup>, 30<sup>th</sup> busiest day as per industry standards) would suit better in terms of investment plans. The worst-case scenario could see spikes in the peak that is not shouldered i.e. not long enough that may be normalised with volume or managed with effective resourcing on the day.

Additional information on what level of demand those Normative weeks represent would be advantageous to understand the level of significance of the bottlenecks that are discovered afterwards in the ICP. It would also be beneficial to perform a validation analysis on the generated flight schedule. This is, to compare the produced flight schedule with the one flown by the airlines to evaluate the accuracy of the forecasting process.

Lastly, it is also important to promote airline engagement in the ICP process and to encourage the relevant stakeholders to provide quality and accurate inputs to ensure that the output of the process will be an accurate reflection of reality.

## 4.2 Capacity analysis Airside

### 4.2.1 Airside inputs, assumptions, and parameters

The components that make up part of the airside capacity analysis are stands, gates and ground movements. The input data for this analysis are week 29 and week 11 from the forecasted flight schedule that was put together by the FACT team, including gate allocation following the RASAS principles. The target for allocation is 100% connected aircraft except for Regionals.

In relation to the selected demand weeks, they both represent normative weeks for the airside processes with different available capacities. It is declared that there are stands unserviceable due to projects, construction work and maintenance, although those stands are not identified.

- 2 NABO Stands/Gates and 2 WIBO Stands/Gates unserviceable during Summer Season
- 3 NABO Stands/Gates and 3 WIBO Stands/Gates unserviceable during Winter Season

Furthermore, on the "ICP Framework 2023-2025" document there is a table of additional calculation parameters:

Calculation Parameters				ICP 2023-2025
Discipline	Aspect	Location	unit	
Airside	Occupation of bus gate	Bus gate: WIBO	minutes/flight	80
Airside	Occupation of bus gate	Bus gate: NABO with >100 seats	minutes/flight	45
Airside	Occupation of bus gate	Bus gate: NABO up to 100 seats	minutes/flight	30
Airside	Capacity Drop off points bus	A04: Schengen (3 bus-stops)	buses/15min	34
Airside	Capacity Drop off points bus	A08: Non-Schengen screened Hub (2 bus-stops)	buses/15min	28
Airside	Capacity Drop off points bus	A09: Non-Schengen unscreened Hub (2 bus-stops)	buses/15min	26
Airside	Capacity Drop off points bus	A14: Non-Schengen screened (2 bus-stops)	buses/15min	30
Airside	Capacity Drop off points bus	A15: Non-Schengen unscreened (2 bus-stops)	buses/15min	30

Table 2 Calculation Parameters for Airside Assessment

Additional to the Parameters described in Table 2 Calculation Parameters for Airside Assessment there are extra considerations to consider regarding bus gates. Due to space limitations, it is considered that Regional/NABO flights with less than 100 seats occupy 1 gate, Regional/NABO flights with more than 100 seats occupy 2 gates and WIBO occupy 4 gates. These assumptions are directly related with the expected number of passengers on each flight and the space required to accommodate them.

There is no explanation on the ICP Report or in the ICP Framework documents on how the parameters described in Table 2 Calculation Parameters for Airside Assessment were defined.

Upon further conversations it was understood that the Occupation times for the bus gates are deduced from previous experience and the Capacity of the bus Drop-off points are calculated having considered the dimensions of the bus, the dimension of the bus pier and the off-load times for the buses.

## 4.2.2 Stands for handling

*Connected WIBO Handling, NABO Handling, Regionals, and Quick Turnaround Concept*

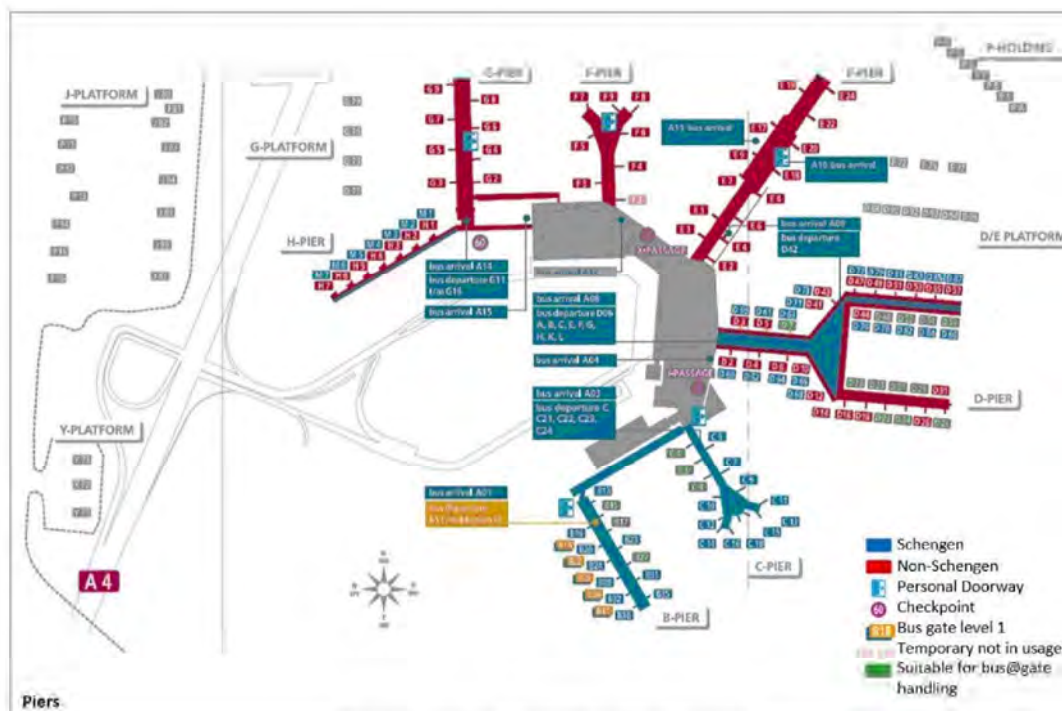


Figure 1 Aircraft Parking Bays and Stands

### Demand

The estimated stand demand is based on the flight schedule forecast produced by the FACT team.

The split between WIBO/NABO aircraft is related to the fleet forecast provided by the airlines and a split of S/ NS depending on each airline's destination portfolio, which changes only slightly from year to year.

### Capacity

The stand availability is what determines the stand capacity. As mentioned in section 4.2.1 the number of stands available can vary depending on maintenance works.

The availability of stand helps in determining the stand capacity and to calculate stand requirements, each turnaround is assigned an estimated ground time per aircraft (in minutes), which is differentiated by WIBO/NABO, Regionals, and Quick Turnaround Concept.

The intended standard is that 100% of aircraft served On-pier, although Off-Pier capacity is also calculated and sometimes serves as a buffer to meet additional demand not served by connected stands.

Some of the stands serve for multiple purposes through the day such as Connected/Remote stands, parking, de-icing, etc. Since the capacity lines are considered a hard limit through the entire day's operation, it is not clear if some of the stands are double counted. Some operational comments into an additional appendix could help illustrate the typical usage of each stand during the day.

Quick Turnaround Concept (QTC) refers to aircraft served on the H-Pier and is a mode of operation assigned to certain airlines (low-cost) with a NABO fleet and with faster turnaround times.



## 4.2.3 Bus products

### *Bus gates Regional, NABO and WIBO*

Bus gates are used to process passengers to aircraft on Off-pier stands.

#### **Demand**

Demand is based on the number of concurrent departing flights (STD) that require a bus gate for boarding, with the resulting occupancy time and number of gates used for each flight.

#### **Capacity**

Capacity is based on the number of bus gates available to serve the operation.

For Schengen flights, there are 5 at the B pier, 8 at the B pier bus station, and 4 at the C pier bus station (fully occupied if there is a Schengen WIBO operation).

For non-Schengen, there are 9 gates for Regional/NABO in the D06 gate area, and for WIBO there are 7 gates between the D42, the E21 and G pier bus station.

It is suggested that to facilitate the interpretation of the bus gates demands, an explanation of the correlation between the number of bus gates required and remote stands should be included.

### *Bus drop-off points (A04, A08, A09, A14 and A15)*

A Bus Drop-off point is the place where the passengers from an Off-Pier arrival flight are bused to.

#### **Demand**

Demand is calculated assuming that a Regional/NABO arrival will have 3 buses with passengers and a WIBO arrival will have 6 buses with passengers.

Additionally, it is assumed that in 2025, gates A08 and A09 will also be used as drop-off points for A-pier bus shuttles, which is expected to result in demand of 5 buses/15 minutes for A08, 6 buses/15 minutes for A09, and 30/15 minutes for A14 and A15.

#### **Capacity**

The capacity of the drop-off points is calculated considering the measurements at each location and the unloading time of the buses.



## 4.2.4 Remote Stands for Parking/Buffering Parking

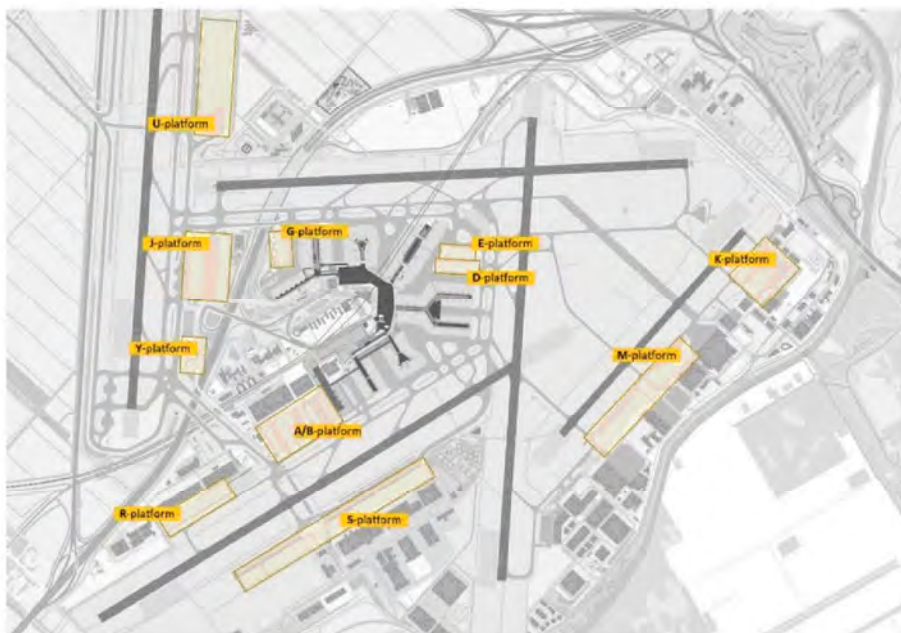


Figure 2 Aircraft Parking Remote Stands

### Demand

Parking Demand is obtained from the Forecasted Flight Schedule. This is, if an aircraft stays on ground for a longer period than the one assigned as a normal turnaround time then it is assumed that the aircraft will be towed to create connected stand capacity.

Parking demand resulting from positioning flights, maintenance, or reserve aircraft is not considered in this assessment.

### Capacity

Capacity is defined as number of stands available for parking.

For NABO there is just 1 stand available for parking at the U-platform. The NABO stands at the D and Y-platform can also be used for parking if that capacity is not required for remote handling.

For WIBO, there are 21 stands are available in S23 at J-, P-and U-platform. In S25 with the extension of the U-platform the capacity increases to 25. However, when J-platform is required for WIBO passenger handling, the Parking capacity decreases but also, WIBO stands at G-and E-platform can also be used for parking when this capacity is not required for remote handling.

During the winter season, the parking capacity decreases to 16 stands for WIBO during W23-24 but increases to 20 in W25-26 thanks to the U-platform extension.

Similarly, to what was suggested in 4.2.2 it would be helpful to include as part on an appendix to the ICP some operational comments about the typical usage of each stand during the day to verify that they are assigned to the correct capacity.

## 4.2.5 Stands for Handling per aircraft category.

### *Stands per CAT*

The assessment of the handling stands per aircraft category subdivides the previously explained 4.2.2 depending on the type of aircraft.

Demand and Capacity are obtained exactly like the ones described on Stands for Demand is determined from the Forecasted Flight Schedule, with the correct aircraft category assigned to each flight and capacity is related to the number of stands that can allocate each category type.

If the capacity of a particular category is insufficient to meet demand, the smaller aircraft are assumed to fit into larger stands and therefore take up the capacity of the category above.

## 4.2.6 Other aspects

### *Custom gates*

Customs gates are the gates to flights that must undergo a 100% security check by Customs, which lasts 45 minutes from the time the aircraft disembarks.

### **Demand**

The demand is the maximum number of simultaneous arrival flights from the origins with 100% Customs Security Check.

### **Capacity**

The number of gates available for Custom Checks (Capacity) are 6 gates. There is no prediction that the number of gates will be increased for 2023 or 2025.

The 4 stands/gates located at the E-pier that are dedicated to Custom Checks have just 2 operational areas to handle the check. Therefore, if there are 2 flights being processed at the E-pier and an additional flight arrives within a 45-minute timeframe, it will have to wait for the gate to be available.

Nevertheless, for the coming years it is estimated that the maximum number of simultaneous flights that require customs check on the E-pier is 2.

### *Cargo Stands*

Cargo stands are those stands available to handle cargo flights.

### **Demand**

The estimate demand is derived from the Forecast Schedule for 2023 and 2025 and considers the number of concurrent cargo flights.

### **Capacity**

Capacity is the total number of stands available for cargo flights (17) and this is 6 stands on the R-platform and 11 on the S-platform.

It is assumed that stands S64-S69 on the S-platform, are non-operational and approved for long-term parking.



In 2025, the R platform is expected to be out of use due to Double-Q taxiway phase 2. To compensate for this loss, cargo bays will be created as for those approved only for long-term parking on the S platform plus 3 additional. Therefore, no capacity change is to be expected in 2025.

## *Bus @ Gate*

Bus @ Gate refers to those flights that arrive at a connected stand but need to bus passengers to a part of the terminal with the correct border status, depending on the origin of the flight.

## **Demand**

Demand is based on the forecasted flight schedule and the assigned gate for arrival.

## **Capacity**

The capacity for Bus@gates operations are 18 connected stands.

Expecting A-pier to be operational in 2025, more flexible stands will be available at A-pier to handle all combinations of arriving/departing flights with border and security status. This will result in a minimal number of Bus@gate spaces being required in 2025.

### 4.2.7 Ground Traffic Aircraft

#### *Relative change of the OTP (D-15)*

The OTP D-15 is a standard that indicates the percentage of aircraft that leave the stand within 15 minutes of the scheduled off-block time. A total of 4 scenarios are simulated: S23 and S25 (one week of traffic each) operating under two RMOs and no random delays were added to see the impact of the changed schedules. The simulation shows taxi delays when an aircraft is registered as Stand-still. The results show the D-15 performance and the relative delays for different scenarios. Delays are divided into holding delay, pushback delay, RWY crossing, RWY queueing, RWY Crossing and taxi delay, depending on if they are arriving or departing flights.

### 4.2.8 Airside Traffic Vehicles

#### *Relative change of delay on road network and relative change of bottlenecks on the roads*

The capacity assessment for airside vehicle traffic was performed using a traffic simulation model. The objective was to determine travel times and congestion on airside roadways because of the forecast schedules. The number of vehicle movements is composed by traffic associated with aircraft handling and traffic non-related with aircraft handling (Road Demand). Capacity Assessment was done by the delays that were assessed by analysing the average travel time delay per vehicle and bottlenecks were assessed by analysing the main delays at the junctions.

## 4.3 Capacity analysis Terminal

### 4.3.1 Terminal inputs, assumptions, and parameters

The Terminal capacity assessment of the ICP investigates the Check-in process and passenger flows in the Departure Halls, the passenger flow area, toilet and seating capacity on the Lounges and Piers, as well as the passengers Flow and waiting area at the Reclaim Halls.

As in the previous assessment, the input data for this analysis is a flight schedule forecast from the different airlines with justifiable assumptions. These flight schedules forecast have into account future fleet changes and possible routes modifications. Additionally, the FACT department put together a complete schedule with aggregated growth, gate allocation (following RASAS) and corresponding assumptions.



There are two different types of assumptions declared on the "ICP Framework 2023-2025" document:

User Requirements				ICP 2023-2025
Discipline	Aspect	Location	unit	
Departure Halls	Flow Area (Design)	Departure Halls	m <sup>2</sup> /pax	2,5
Departure Halls	Flow Area (Operational)	Departure Halls	m <sup>2</sup> /pax	1,5
Departure Halls	Check-in Area	Departure Halls	m <sup>2</sup> /pax	1,8
Piers & Lounges	Flow Area (Design)	Lounges	m <sup>2</sup> /pax	2,5
Piers & Lounges	Flow Area (Operational)	Lounges	m <sup>2</sup> /pax	1,5
Reclaim halls	Reclaim hall	Reclaim hall	m <sup>2</sup> /pax	1,7

Table 3 User Requirements for Terminal Assessment

Calculation Parameters				ICP 2023-2025
Departure Halls	Process time check-in/bag drop	Departure Hall 1	seconds	S23: 120 - S25: 115
Departure Halls	Process time check-in/bag drop	Departure Hall 2	seconds	S23: 171 - S25: 137
Departure Halls	Process time check-in/bag drop	Departure Hall 3	seconds	S23: 169 - S25: 135
Departure Halls	% ICI NO-BAG	Departure Hall 1	%	42
Departure Halls	% ICI NO-BAG	Departure Hall 2	%	25
Departure Halls	% ICI NO-BAG	Departure Hall 3	%	29
Departure Halls	% efficiency loss (Common Use vs dedicated facility)	Departure Hall 1	%	7
Departure Halls	% efficiency loss (Common Use vs dedicated facility)	Departure Hall 2	%	0
Departure Halls	% efficiency loss (Common Use vs dedicated facility)	Departure Hall 3	%	20
Departure Halls	% non-pax in flow area	Departure Hall 1	%	20
Departure Halls	% non-pax in flow area	Departure Hall 2	%	23
Departure Halls	% non-pax in flow area	Departure Hall 3	%	24
Departure Halls	Dwell time in departure hall	Departure Hall 1	minutes	19
Departure Halls	Dwell time in departure hall	Departure Hall 2	minutes	24
Departure Halls	Dwell time in departure hall	Departure Hall 3	minutes	26
Piers & Lounges	Seating capacity	Pier	% of departing passengers at pier	70
Piers & Lounges	Pier Width *	Pier	pax/meter/minute	19
Piers & Lounges	Distribution passengers	Lounge 1, 2, 3, Holland Boulevard	%flow	33
Piers & Lounges	Distribution passengers	Lounge 1, 2, 3, Holland Boulevard	%shopping	33
Piers & Lounges	Distribution passengers	Lounge 1, 2, 3, Holland Boulevard	%free seating	19
Piers & Lounges	Distribution passengers	Lounge 1, 2, 3, Holland Boulevard	%"horeca" seating	15
Piers & Lounges	Distribution passengers	Lounge 4	%flow/shopping	50
Piers & Lounges	Distribution passengers	Lounge 4	%free & "horeca" seating	50
Piers & Lounges	Toilet capacity (men)	Lounges	Complex parameter from ASM calculations	
Piers & Lounges	Toilet capacity (urinals)	Lounges	Complex parameter from ASM calculations	
Piers & Lounges	Toilet capacity (ladies)	Lounges	Complex parameter from ASM calculations	
Reclaim halls	Dwell time in reclaim hall	Reclaim hall 1	minutes	15
Reclaim halls	Dwell time in reclaim hall	Reclaim hall 2	minutes	10
Reclaim halls	Dwell time in reclaim hall	Reclaim hall 3/4	minutes	25

Table 4 Calculation Parameters for Terminal Assessment

There is no clarification on how the parameters described in Table 3 and Table 4 were obtained. It would be helpful for auditing purposes to have an indication of the basis of the assumptions.

After engaging with the airlines there has been a comment suggesting that Lounge 4 calculation parameters are different to the rest of the airport. It has been mentioned that the LoS provided is lower in terms of area per passenger and that the calculation methods for acceptable seating capacity are different than for the rest of the airport. There is no evidence found on the report about the seating statement, but it is noticeable that Lounge 4 distribution of passengers follow a different split than the rest of the areas of the airport. Therefore, it would be positive to include a brief explanation of which parameters are different on Lounge 4 compared to the rest of the airport and the reason to it.

For the terminal capacity analysis, 3 weeks were selected. The selected weeks are intended to represent normative weeks for transferring passengers (week 26), departing passengers (week 29), or arriving passengers (week 34).

## 4.3.2 Departure Halls 1-3

### Check-in area, Check-in desks and Flow Area

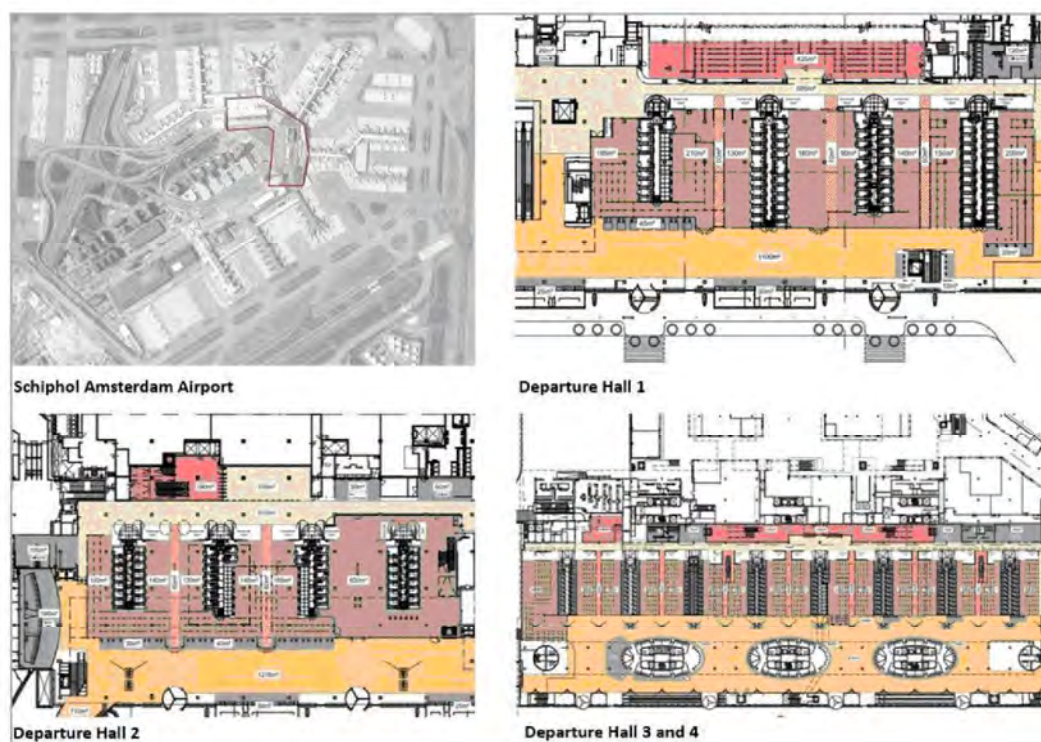


Figure 3 Departure Halls

The Departure Hall capacity assessment is performed looking into 3 different areas of each Departure Hall: the check-in area, the check-in desk area, and the flow area.

### Demand

The input for the demand calculation is the Forecasted Flight Schedule from the FACT team. This schedule is entered to a software tool (Beontra) which creates passenger flows through the different areas of the terminal and models the behaviour of each passenger and its journey through the Terminal from the DH to the gates.

The passenger flow simulation considers processing times per DH, number of desks, ICI no bags and passenger companion percentage among other assumptions. Additionally, there are a total of 51 show-up profiles depending on airlines, destination, and time of day.

As mentioned previously, some of these assumptions' origins are unexplained and for auditing purposes it would be helpful to include the process of obtaining those values.

### Capacity

The capacity of the DH areas is defined by an Operational Norm ( $m^2/pax$ ), which is a norm established by Schiphol for the area that each passenger uses at the different spaces of the Departure Hall.

Nevertheless, there is no drawing or representation on how the departure halls are split and therefore there is no information on which area corresponds to the previously defined Check-in area, check-in desks area and flow area. To understand the capacity line, it is important to indicate the area available and the specific Operational Norm applied to that area.



Due to a software limitation regarding processing times, some assessments returned no capacity constraints in some of the departure halls areas which are known to have capacity issues, specifically some check-in rows. This is noted and for future ICP's the software will be changed.

### 4.3.3 Lounges 1-4, M Corridor and Holland Boulevard *Flow area, Free seats, and Toilet Capacity*

The Lounges capacity assessment is performed looking into 3 different areas of each lounge: the flow area, the seating capacity, and the toilet capacity.

#### **Demand**

As with the previous analysis, the input for the demand calculation is the Forecasted Flight Schedule which is then put into a software tool (Beontra) which models passenger behaviour.

For these calculations additional assumptions have been considered and are modelled within the software. These are: split of passengers (flow, seating, and retail) and transfer percentages (S/NS combinations).

The demand of seats is calculated by assuming that 70% of the departing passengers shall have available seating.

The calculations for toilets (demand) are based on parameters from ICP Framework but are not explained in the document. It was later clarified that the formula used to calculate toilet demand is based on calculations used over the past years yet is not known if those calculations were tested in the past to be true to reality.

#### **Capacity**

The capacity of the Lounge for Flow area is defined by the Operational Norm ( $m^2/pax$ ), which is a norm established by Schiphol. Comparably to what was explained in 4.3.2 there is no drawing or representation on which area corresponds to the Flow Area which would be beneficial to audit the Flow Area capacity figure.

The capacity for seating and toilets is the number of seats and toilets available for the passengers.



## 4.3.4 Piers' width.

*B-pier, C-pier, D- pier (S/NS), E-pier (level 1 and 2), F-pier (level 1 and 2), G-pier (level 1 and 2), H-pier and M-pier*

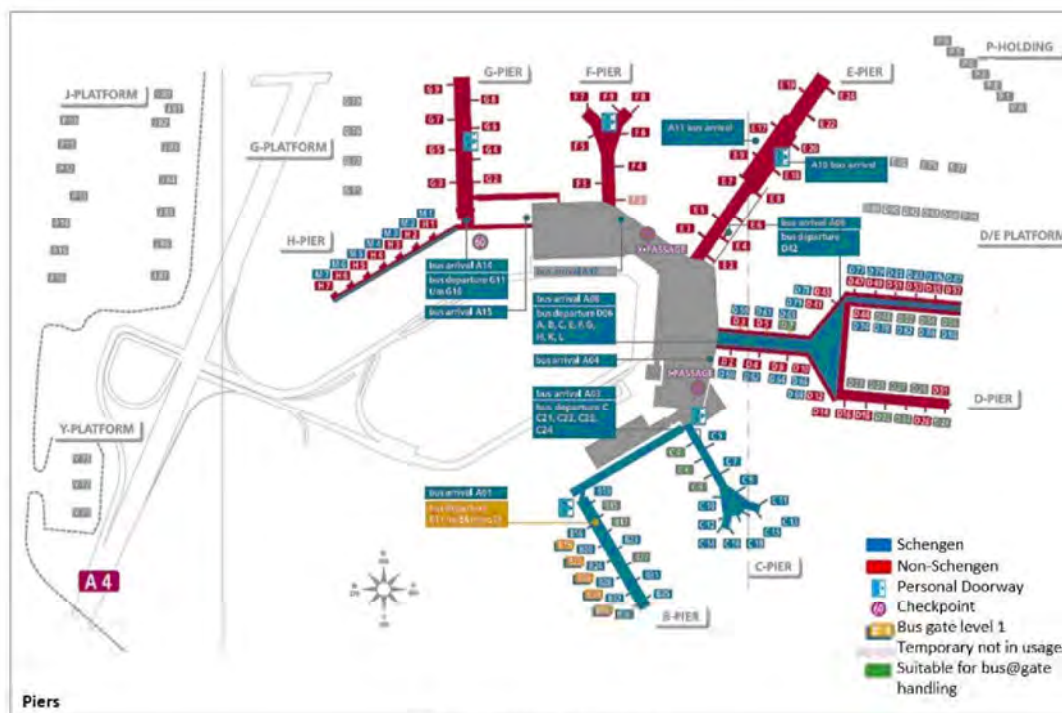


Figure 4 Piers and Lounges

The assessment of Piers width examines if there is sufficient width to meet the IATA standard for optimum level norm.

### Demand

The demand is obtained from the simulation software which models passenger behaviour and directs each simulated passenger to its corresponding gate and therefore is possible to obtain the passenger flow in each of the piers.

### Capacity

The capacity norm derived from IATA standards is 19 pax/meter/minute, which with the pier width can be translated into a maximum passenger flow in the area. An additional analysis is performed for the C-pier dividing the C-pier between two parts, one with escalators and the root without them.

However, and similarly to the previous comments on the Terminal assessment there is no drawing or area declaration regarding the Piers' width and therefore is not possible to audit the capacity line regarding the width of the piers.

## 4.3.5 Piers' seats

### *Seats on piers*

The pier seating analysis is used to determine if the seating capacity on each pier is sufficient to meet the norm.

## Demand

The demand is defined by presenting two different demand alternatives:

- The first one present the demand as per the passengers staying on the pier (not gate) as a result of the simulation which is linked to a forecasted flight schedule.
- The second one is calculated by analysing the maximum category aircraft that each gate can handle and assigning a load factor of 85% (not scheduled based).

## Capacity

The capacity is defined by a norm that establishes that at least 70% of the departing passengers should have a seat available. The capacity and demand are calculated by adding all gates present in a pier, which will then present a "open pier concept".

### 4.3.6 Reclaim 1-4

*Flow Area, Waiting area and Total Occupancy*

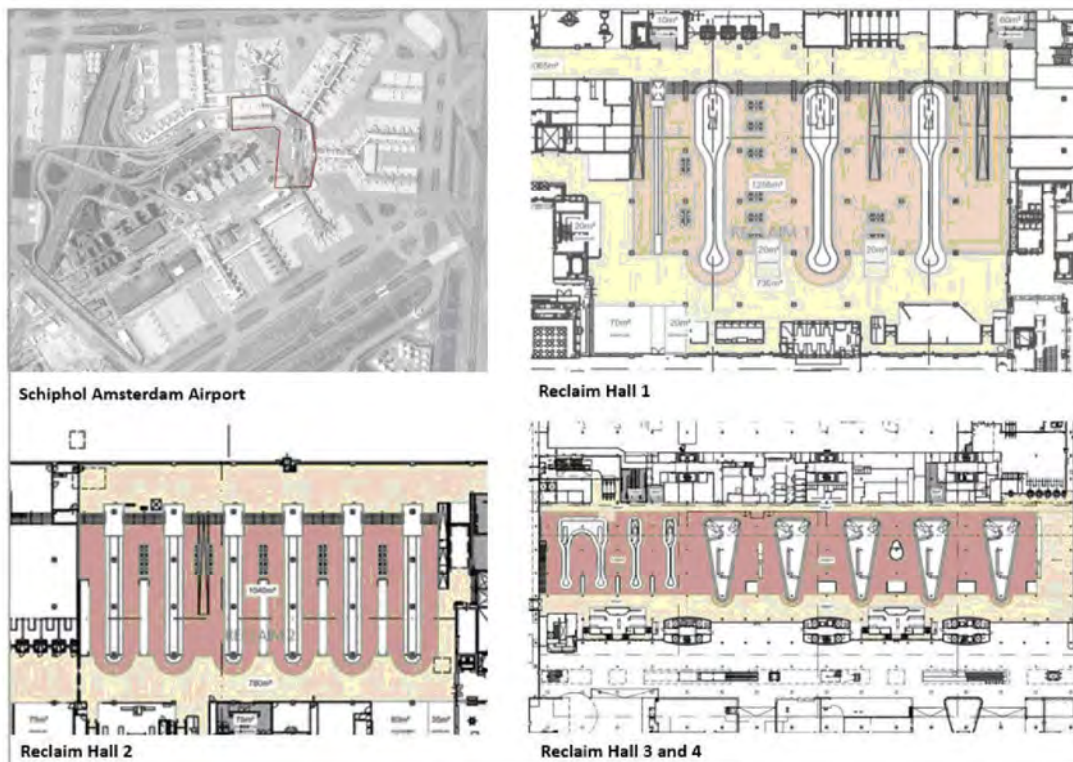


Figure 5 Arrival Halls

The Reclaim capacity assessment looks at 3 different areas of each lounge: the flow area, the waiting area, and overall occupancy.

Unlike previous area assessments, the results of these assessments are expressed in terms of the number of passengers and not pax/15 mins. This was raised and confirmed to be a typo, therefore as like previous area assessments the result unit is #pax/15min.

## Demand

The demand is a result of the simulated passenger flow from the Forecasted Flight Schedule.



In this assessment the arriving passengers are simulated having considered the arrival patterns and the dwell times in the different Reclaim halls areas.

## Capacity

The capacity of the Reclaim Area is defined by a design norm ( $m^2/pax$ ).

As with previous area assessments, the capacity assessment can't be audited because there is no information or drawing which will help identify the areas of the different part of the Reclaim Hall.

### 4.3.7 A-pier

#### *Shuttle bus, Seating and Width*

This assessment is performed to determine the A-pier capacity and the calculation methods are like the ones performed to the previous Piers.

## Demand

The demand for shuttle buses and pier width is derived from the simulated passenger flow resulting from the forecasted flight schedule and the demand for seats is calculated by assuming that demand for seats is 70% of total departing passengers.

## Capacity

The capacity calculations for Shuttle buses assume that:

- NS Unscreened arrivals are transported by bus to drop-off point A09 with a total capacity of 6 buses/15 min.
- NS Screened arrivals are transported by buses to drop-off point A08 with a total capacity of 5 buses/15 min.
- Transfers departing from the A-pier will be transported by buses to the aircraft at the A-pier with a capacity of 5 buses/15mins.

Total capacity is therefore derived by multiplying the number of buses every 15 minutes by the total passenger capacity of each bus.

Pier width capacity is derived from developments during the construction of Pier A and is consistent with the IATA norm of 19 pax/meter/minute.

As with the previous assessments, information on areas is necessary to audit capacity declarations.

## 4.4 Capacity analysis Landside Access

### 4.4.1 Landside inputs, assumptions, and parameters

The Landside Access capacity assessment of the ICP investigates the Road Access capacity to the airport. More specifically the Kiss&Ride Entrance and Parking capacity.

As in previous assessment, the input data for this analysis is a flight schedule forecast from the different airlines with justifiable assumptions and with the corresponding growth rates and allocations performed by the FACT team. The assumptions and calculations parameters are declared on the "ICP Framework 2023-2025" document:



Calculation parameters			ICP 2023-2025
Discipline	Aspect	Unit	
Kiss & ride	Capacity of the road	Vehicles per hour	1,300
Kiss & ride	Parking length available	Meters	650
Kiss & ride	Length of one parking place	Meters	6
Kiss & ride	Parking places available	Parking places	115
Kiss & ride	Loss of capacity due to movements	Parking places	15
Kiss & ride	Capacity of the parking places	Parking places	100
Kiss & ride	Modal split	Percentage of local pax	see graph →
Kiss & ride	Other demand (vehicles)	Percentage of local pax	0.2 – 2.2
Kiss & ride	Taxi pick-up via kiss & ride	Percentage of all taxi pick-up pax	10.8
Kiss & ride	Collect & ride via kiss & ride	Percentage of all collect & ride	90.0
Kiss & ride	Correction winter/summer schedule	Factor of modal split	0.92 – 1.04
Kiss & ride	Correction midweeks/weekends	Factor of modal split	0.90 – 1.16
Kiss & ride	Occupation brought by car	Pax per vehicle / driver excluded	1.6
Kiss & ride	Occupation taxi	Pax per vehicle / driver excluded	1.6
Kiss & ride	Stop & go time	Minutes per vehicle	5
Kiss & ride	Driving time	Minutes per vehicle	1
Kiss & ride	Dwell time	Minutes per vehicle	6

Table 5 Calculation Parameters for Landside Assessment

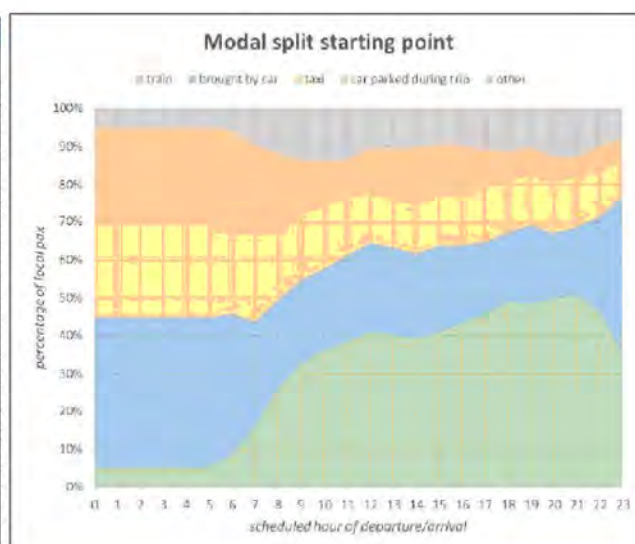


Figure 6 Landside Modal Split

Week 29 was selected for the Kiss&Ride (drop-off) capacity analysis because it represents a normative week for departing passengers.

## 4.4.2 Kiss & Ride Entrance Road



Figure 7 Landside Kiss&Ride and Parking

This assessment intends to estimate the demand and the vehicle capacity on the entrance road in a mode of Kiss&Ride.

### Demand

Demand for the Landside Entrance Road is calculated using the Forecasted Flight schedule focusing on local departing passengers, the modal split focused on the passengers arriving by car, certain share of arriving passengers (only for the passengers that used the Kiss&Ride already for their departing flight) and the previously mentioned Landside assumptions.

This results in an estimate of the number of passengers per flight that would be accessing via Kiss&Ride, which is then converted to vehicles using the conversion rates in the assumptions. It is also assumed that a few passengers of arriving flights use the Kiss&Ride as a pickup point.

The modal split is presented by STD (or STA) and for times between 00-05 is based on assumptions and from 06-23 is obtained from surveys.

The demand for landside access is presented in round hourly slots in which vehicles are allocated at the Kiss&Ride at STD – 2 hours or STA + 0.5 hours.

In addition, a turn-up profile with a 25-50-25 split is applied.

This means that 25% of the vehicle demand is allocated in the hour before STD -2 (this would be STD -3), 50% of the vehicle demand at the originally estimated time (this is STD -2), and 25% of the vehicle demand one hour after the originally estimated time (this is STD -1). In this way, a demand profile of vehicles/hour is obtained.

This calculation process would benefit from a more refined turn-up profile. Ideally, the turn-up profile of the Kiss&Ride should resemble the check-in desks profiles, considering range of the flight (LH/SH), the type of destination (business/leisure/VFR) or even the type of airline.

## Capacity

The capacity of the Kiss&Ride is determined using data obtained from sensors installed along the road leading to the Kiss&Ride. This data is updated weekly and shows consistently slow speeds and maximum peak numbers of 1300 vehicles/hour. This value is the accepted maximum capacity of the Entrance Road.

## *Parking places*

Initially, parking places calculation were not very clear from the reader's point of view. Upon further consultation there was a clarification of the Calculation Parameter related to the number of parking places. This is derived from the length of the parking area and the length assigned to each vehicle.

Nevertheless, on the ICP assessment it is shown a total capacity of 1,500 vehicles/hour for parking places.

The methodology of calculation in translating parking bays available to vehicles per hour capacity could be explained in the ICP document with further detail on how volume and rate are compared. The assumptions document does explain the 100 vehicles capacity calculation in volume which is also used as a per hour limit which is useful to outline in the report section.



## 4.5 Capacity analysis Security and Border Control

### 4.5.1 Security and Border Control inputs, assumptions, and parameters

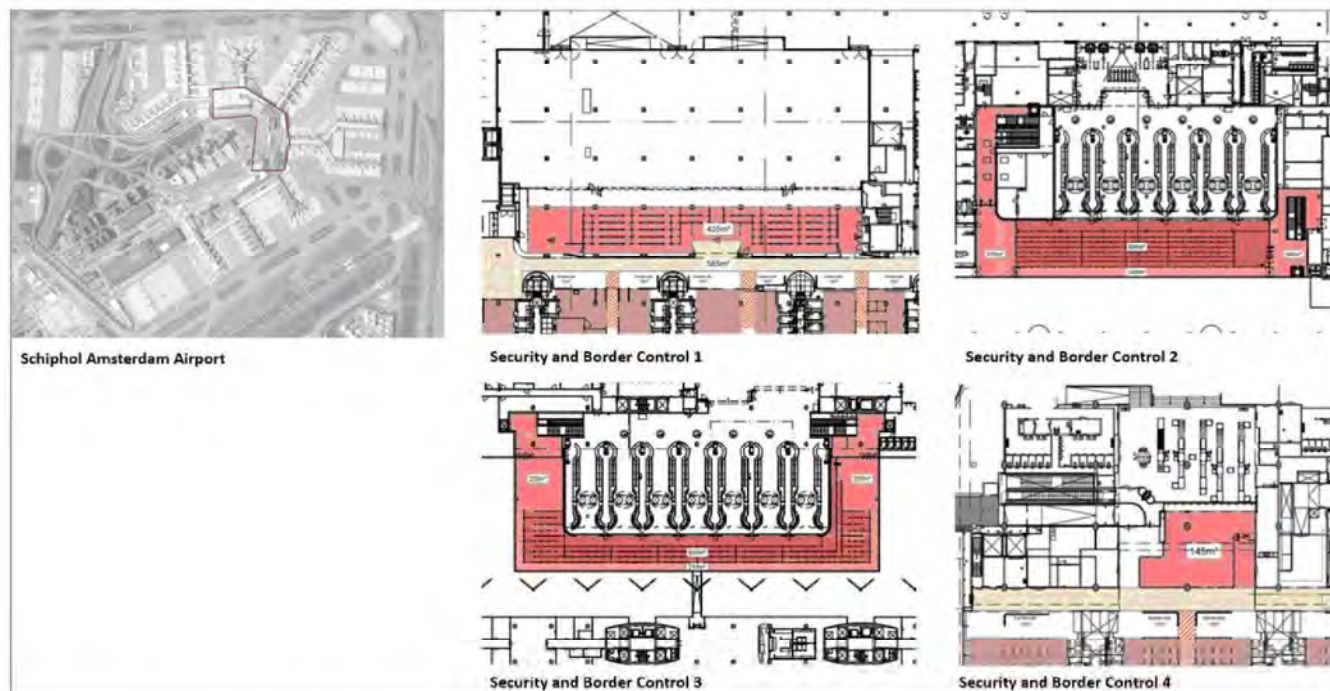


Figure 8 Security Filters

The Security and Border Control capacity assessment of the ICP investigates the Security Filter Process and the Border Control Process of the Terminal.

Contrary to the previous assessments, the input data for the Security Filter and the Border Control assessment is an output from the Terminal Capacity analysis simulation at the Security level. The flow profile of passengers at the different filters will be the input for the demand calculations. Therefore, it will be directly affected by the accuracy and level of detail of the previous process.

The assumptions and calculations parameters are declared on the “ICP Framework 2023-2025” document:

User Requirements		ICP 2023-2025		
Discipline	Aspect	Location	unit	
Security	Maximum Waiting Time Premium passengers	Security Filter	minutes (95%pax/day)	5
Security	Maximum Waiting Time Economy passengers	Security Filter	minutes (95%pax/day)	10
Border Control	Maximum Waiting Time – All passengers	Border Control - Emigration	minutes (95%pax/day)	10
Border Control	Maximum Waiting Time – All passengers	Border Control – Immigration Desks/No-Q	minutes (95%pax/day)	10

Table 6 User requirements for Security and Border Control Assessment.

The requirements presented in Table 6 are reached by consensus between the different stakeholders involved.

Calculation Parameters				ICP 2023-2025
Discipline	Aspect	Location	unit	
Security	Processing Time Security Lane	Departure Filter 1	pax/min/lane	2.3-2.5
Security	Processing Time Security Lane	Departure Filter 2	pax/min/lane	2.3-2.5
Security	Processing Time Security Lane	Departure Filter 3	pax/min/lane	2.5-2.7
Security	Processing Time Security Lane	Departure Filter 4	pax/min/lane	1.7-2.0
Security	Processing Time Security Lane	Transfer Filter EF	pax/min/lane	2.5-2.7
Security	Processing Time Security Lane	Transfer Filter GH	pax/min/lane	2.5-2.7
Security	Processing Time Security Lane	Transfer Filter A-pler	pax/min/lane	2.5-2.7
Security	% Priority Passengers in Peak	Departure Filter 1	% of pax	15%
Security	% Priority Passengers in Peak	Departure Filter 2	% of pax	30%
Security	% Priority Passengers in Peak	Departure Filter 3	% of pax	30%
Security	% Priority Passengers in Peak	Departure Filter 4	% of pax	15%
Security	% Priority Passengers in Peak	Transfer Filter EF	% of pax	30%
Security	% Priority Passengers in Peak	Transfer Filter GH	% of pax	30%
Security	% Priority Passengers in Peak	Transfer Filter A-pler	% of pax	30%
Border Control	Processing Time Border Control	Regular Desk Immigration	pax/min/desk	1.5-2.0
Border Control	Processing Time Border Control	Regular Desk Emigration	pax/min/desk	1.7-2.0
Border Control	Processing Time Border Control	E-gate	pax/min/e-gate	1.6
Border Control	% Passengers No-Q eligible (and willing)	Border Control - Emigration	% of pax	50%
Border Control	% Passengers No-Q eligible (and willing)	Border Control - Immigration	% of pax	75-80%

Table 7 Calculation Parameters for SF and BC Assessment

Following consultations, it was confirmed that some of the parameters described in Table 7 were obtained using real data, especially for departure filter. Nevertheless, it would be helpful to have some additional explanation on how these assumptions are obtained.

The security capacity analysis was modelled following the demand of week 29 for departures and week 26 for transfers.

The border Control capacity analysis was modelled following the demand of Week 26 for transfer filters and Week 34 for arrival filters.

## 4.5.2 Security Filter.

### Departure SF 1-3 and Transfer SF A-pler, EF, and GH

Departing passengers and some of the transferring passengers must pass through the Security Filter.

The norm established from Schiphol for its Security Filter is that 95% of the passengers must be processed within 10 minutes if they are Economy and 5 minutes if they are premium.

This means that the result of the analysis will be presented as a bottleneck if more than 5% of the passengers are not processed within the times mentioned.

## Demand

The demand for each security departure filter is obtained as an output from a previous process and these passenger profiles are fed into a software tool (Enterprise Dynamics) that provides for an unconstrained calculation of wait time per passenger.

## Capacity

The capacity calculation assumes that all equipment is available and fully operational. The calculations are performed with two productivity values per lane, one low and one high.

The capacity line represents the maximum number of passengers handled is calculated by multiplying the productivity (pax/min/lane), the number of existing lanes, and the granularity period (15 minutes).

When passenger demand exceeds capacity, queues form, and passengers must wait longer.



In addition, calculations of the capacity of (DF1 + DF2) were performed to simulate the usual phenomenon of overflow from one filter to another.

#### 4.5.3 Border Control

*Departure BC 2-3, Transfers S-NS*

Some departing passengers and transferring passenger must pass through a Border Control.

For Border Control 2 and 3 this happens just after the Security Filter therefore the flow of passengers is a continuation of the previous analysis considering there are no queues or bottlenecks on the previous process.

Although the objective of this process is to analyse BC's demand solely independently from other processes, it would be beneficial to compare the unconstrained results with the "restricted" results, this means, with the previously identified bottlenecks.

This will not only give an idea of the impact that bottlenecks can have on subsequent processes but also would represent a more accurate description of the reality of the process.

The norm established from Schiphol for its Border Control is that 95% of the passengers must be processed within 10 minutes.

This means, that the result of the analysis will be presented as a bottleneck if more than 5% of the passengers are not processed within the time mentioned.

Since the implementation and operating procedures of the Entry-Exit System (EES) is not defined yet and Schiphol is dependent on governmental guidelines, the BC Arrivals filters, the NS-S BC filter that are not part of the ICP analysis.

#### **Demand**

The demand for Border Control 2 and 3 is a continuation of the unrestricted passenger flow from the Security Filter and the transferring passenger demand is obtained from the simulated transferring passengers from the forecasted flight. The software tool (Enterprise Dynamics) then emulates the passenger flow through Border Control

#### **Capacity**

Like the Security filter, the capacity calculation assume that all equipment is available and fully operational. The calculations are made for two different productivity level: low productivity per lane and high productivity per lane.

The capacity is defined by the maximum number of passengers handled and is calculated by multiplying the productivity (pax/min/lane), the number of lanes and the granularity (15 minutes).

When passenger demand exceeds capacity, queues form, and passengers must wait longer. If more than 5% of the passengers must wait for more than 10 minutes, it is considered that the process doesn't meet the norm and is considered a bottleneck.

For the security filter and border control, it is recommended to run a sensitivity analysis to determine the queues and waiting times with fewer lanes/desks/e-gates available. Although the scope of the ICP process is to determine the maximum capacity of the different airport processes, it is unlikely to expect that all assets would be fully operative and manned during the high demand peaks.



Finally, when available it would be ideal to use real data from the passenger flow to compare with the estimated flow. Such data can be found on the boarding pass scanner machines and can serve to calibrate and validate the accuracy of the flow estimated by the simulation software.

#### 4.5.4 Waiting areas for each filter

Waiting space requirements per filter were calculated by taking the maximum number of waiting passengers from previous ICP calculations (both high and low productivity) and assigning 1.2 m<sup>2</sup>/pax. The result of the needed waiting area to serve the maximum occupation is compared with the available waiting area.

### 4.6 Capacity analysis Baggage

#### 4.6.1 Baggage modelling inputs, assumptions, and parameters

The Load file is generated from the forecasted schedule and baggage assumptions which reflects an accurate turn up of Bags at the Check-in input and Transfer loading quays. Week 29 data was taken as peak week for Departures which is reasonable, and all days of week 29 are calculated, but Saturdays have high baggage factors (13% higher than the average day of the week) and hence was chosen to be shown as modelling output in the dashboard.

Since the Saturday of week 29 is the very busiest day, for that reason the baggage system summary sheet showing the results of that day is shown as an example.

Baggage flow from the various departure halls is considered on airline basis, and therefore this is a good indication of the flow of bags to Make Ups through the system. DH1A is technically included in the ICP model however it is not in use in the ICP scenario. Although the Terminal process does use DH1A as an overflow for waiting passengers from DH1, this is inconsistent and therefore ignored in this modelling which is justified.

The connections system demand calculations are based on bag flow (from bag file), so the demand data source is reliable. Cross flow of mishandled bags or volumes aren't reported, but this is assumed to be at negligible volumes.

The transfer loading quays analysis uses Week 26 as peak week, although all days of the three weeks (26, 29 and 34) are calculated. It is not mentioned which day is reported but ICP team confirms that the analysis shown has a typical day data and therefore the data source is reliable.

5.1.1c

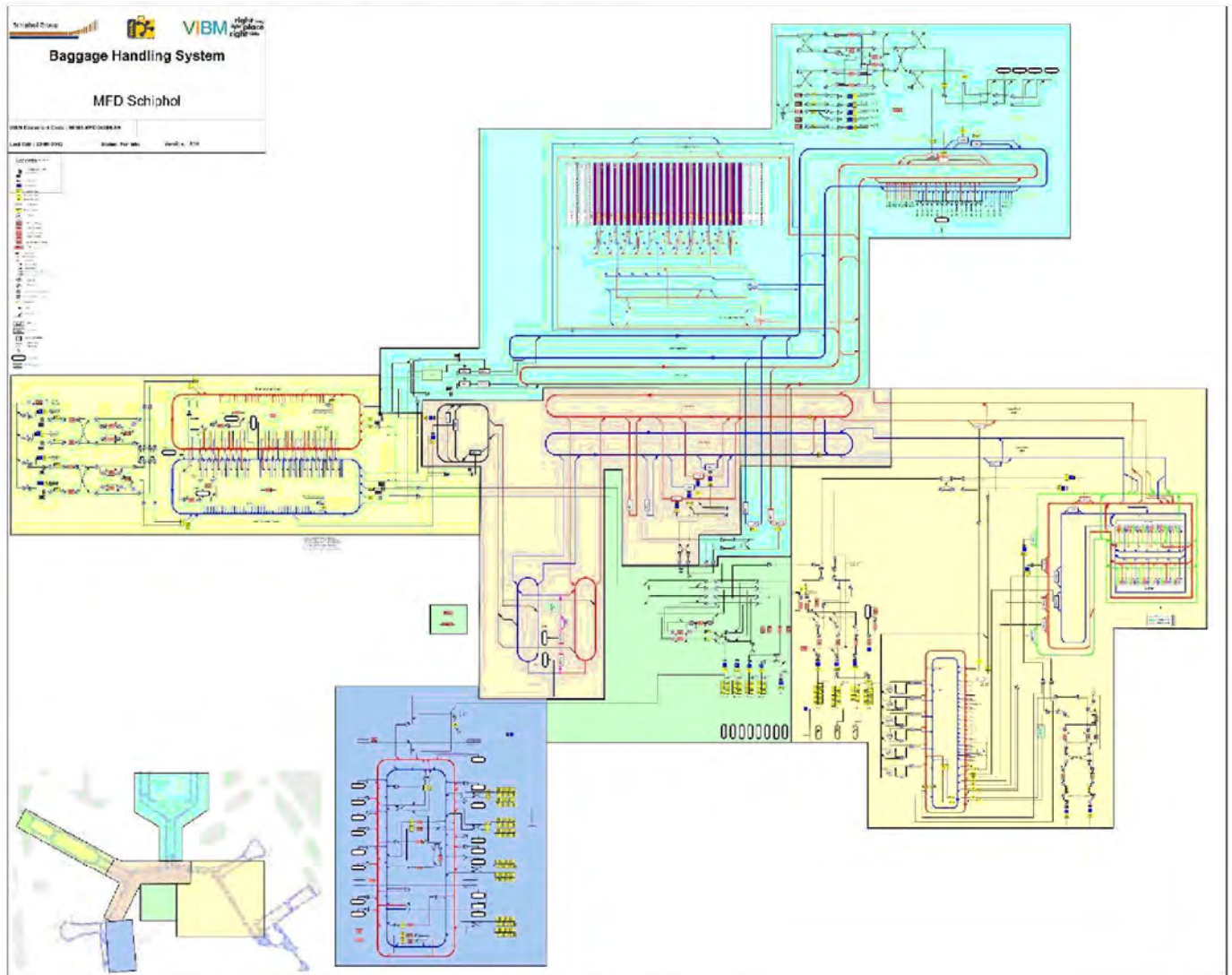


Figure 9 Baggage Sections

## 4.6.2 Departure Halls

Bag flow capacity of the check-in counters was calculated as per theoretical bag flow volumes. The report confirms that operational validity has not been tested.

Bag flow demand is calculated at a one-minute granularity, so the accuracy of the data at the selected time is high and reflective of bag flow within the system. For each departure hall, the Check-In flow is calculated individually. The total of the Check-In flows (plus the Transfer-In flows) is used as input for the flow calculations in the overall baggage system.

If the volume of bags input across the various departure halls is high, the connections and times within the system may affect the conveyor capacities. Theoretical input limits are mentioned in report with a caution of not being tested for operational validity.

Current baggage flows in DH2 already hits theoretical limits. It might be worth mentioning how this is handled operationally and safely for clarity on capacity management. It was confirmed that the maximum capacity value for injection into the system in DH2 is actually capped with regards to the maximum capacity at the passenger process



(check-In). It is worth further investigating the maximum capacity value since the demand and capacity is within marginal limits.

#### 4.6.3 In-system connections

The BB2E project added capacity to the connections which has been included in the capacity calculations. It is worth noting that these are still theoretical limits and the importance of project completion (including testing and commissioning).

Bag flow is calculated with granularity of minutes and hence accuracy is high. Connections to the Make Up area narrated as the key element in well-functioning operations.

In-system delays and failure of equipment are not considered in the capacity.

Schengen and Non-Schengen CheckIn infrastructure may be constrained if cross flows of baggage lines aren't sufficiently able to manage volume of bags. The calculations therefore take into account both the Check-In location and the Make-up location of all flights. The In-system effects of these choices are made visible in the flow calculations.

#### 4.6.4 Input Transfer Docks

In operations, the South unloading quays determines the baggage capacity. If it is anticipated that it will return to operation, this may be returned to the DH 1A Check-in. From a baggage point of view this is undesirable as the unloading quays in South are necessary. (DH1A is after all a temporary measure). The bag flow is calculated down to the minute and principles for allocating loading quay is based on arriving flight and destination of bags.

Around hub carrier piers, where transfer element is particularly high, this could cause bottlenecks. However, the reporting considers the total flexible capacity (across adjacent piers), which essentially reflects actual operations.

#### 4.6.5 Make Up Points

5.1.1c

#### 4.6.6 Customs

It is not stated how the handling capacity of the facility is determined. However, this is less relevant since the turn up of bags is extremely condensed. Baggage flow is directly dependant on the bags per passenger and load factors assumed.

Understanding of processing times can be critical to solving the capacity constraint. Insufficient perturbation of the arriving flight schedule to account for days with overlapping or delayed flights.



## 4.6.7 Out of Scope for this review

The following process and infrastructure were not assessed for demand and capacity as a part of this ICP report.

- Early Baggage Store - Buffer D, Buffer Zuid
  - Buffer Store volumes
  - Loading and Unloading capacity limits of buffers
- Hold Baggage Screening
- Loading Units management - Empty and Full Loading Unit storage
- Reclaim Belts in arrival halls.
  - Bag capacity
  - Arrivals Offload Input

## 5. Comparison with Capacity Assessment procedures at other airports

The process of periodical Capacity Assessment is typically observed at Level 3 airports that are of comparable size to Schiphol (AMS), such as London Heathrow (LHR) and New York (JFK). The level of detail observed in the ICP report is commendable and covers most aspects of demand and capacity compared to any other airport of similar size particularly as frequently undertaken by Schiphol. The comprehensive analysis of demand undertaken by Schiphol is sufficient to also inform a capacity Declaration process.

### 5.1 Capacity Assessment Procedure

In a comparable manner to Schiphol, Heathrow undertakes an internal capacity assessment annual and given its Level 3 status, the slot coordinator, Airport Coordination Limited (ACL) provides a capacity declaration of the airport, like ACNL at Schiphol. For its demand and capacity terminal assessments Heathrow previously, used demand-based schedule modelling using a tool known as BEONTRA, but in recent years, has moved on to a discrete simulation capacity approach using a tool known as CAST which gives the next level of detail for the capacity planning objectives.

Larger airports like Heathrow, JFK, Changi, and Hong Kong may be required by regulation to publish the capacity assessment on a regular basis. In these cases, the capacity assessment report will be redacted to the regulators scope and requirements.

#### 5.1.1 Capacity Assessment Modelling Approach

The modelling approach is driven by the nature of the requirement, whether regulatory, infrastructure planning, or an operational review focusing on Asset optimisation, Process Improvement, and Operational management and depends whether the airport is trying to determine resource demand requirements based on fixed service levels or service levels based on fixed or constrained resources. Often both methods are required to determine the shortage in need plus the impact of the shortage should it not be supplied. Schiphol's through the ICP process approach looks only at the former, whereas Heathrow, which is more constrained considers both where it can, particularly in its Terminal processors.

#### 5.1.2 Declaration Limits Approach

Demand & capacity assessments help to set limits to assist the Co-ordinator to agree Slots and develop Schedules. Setting limits too low can limit the airport's & airlines' revenue, whilst setting them too high or not at all can affect the performance, operating cost, and passenger's satisfaction levels. Therefore, to effectively set limits the airport needs to determine its "theoretical" (max available resources) capacity vs its "practical" (allowing for maintenance, failure, or practical staffing levels) capacity. The Coordinators' can then, using simple demand based models test each Slot request to determine if above the "theoretical" limit which would be declined, below the "practical" limit which would be accepted and anything in between would be referred to the concerned airport capacity manager for more detailed assessment to determine its viability, which of course usually comes with caveats and reduced resilience during peak flows which assumes an educated risk acceptance to sweat the assets or maximise revenues.

Heathrow currently sets **terminal** limits for various processors including check-in, security, and immigration, whilst Schiphol does not. Consideration should be given to a single controlling bottleneck for the departure (e.g. security) and the arrival terminal processes (e.g. non-Schengen immigration). Schiphol has different factors to consider to Heathrow when setting limits, for example Heathrow has four separated terminals with Domestic/International and a transit system, whilst Schiphol is effectively a single terminal but with separated products such as Schengen/non-Schengen, trusted origin/non-trusted origin.



## 5.2 Capacity Assessment Scope

Heathrow typically considers similar processors for capacity assessment as Schiphol. Areas where it differs includes:

- Kerbside: Taxis, Rail and Coaches in addition to Kiss&Ride. Taxis & Coaches are highly managed processes at Heathrow.
- Transfer passengers between terminals
- Domestic (inc. Southern Ireland) passengers

## 5.3 Performance Impact assessment

At Heathrow, this type of capacity assessment typically done on an annual basis to understand the process improvement opportunities and need for operational management particularly in constrained environments. Where the capacity assessment establishes future bottlenecks which will impact the operation, Heathrow takes the modelling to the next level of detail whereby a discrete simulation finite capacity tool is used to understand the comprehensive impact on levels of service in order to establish the quantum for operational mitigations and/or establishes the business case for future 5-year infrastructure planning cycle.

## 5.4 Personnel

Although not directly in scope of a typical capacity assessment, what also plays an important role is the colleague experience and efficiency which is vital knowledge that airports can manage peak congestion effectively through dynamic allocation and problem solving. This aspect is often overlooked and not reported in any modelling as simulation can generate results only based on static inputs rather than dynamic responses of real operations.

This is a particular feature of Schiphol operations and is less significant at Heathrow or other comparable hub airports. Note that the deliverable capacity depends on the active participation of hard to replace staff. Any significant loss of staff/knowledge would degrade Schiphol's capabilities to do dynamic allocation and could easily reduce the accessible capacity.



## 6. Stakeholder Engagement

As one of the key stakeholders in the ICP process, the airport needs to closely work with the airlines to understand their operational needs and long-term strategy planning. Technology and infrastructure developments are re-defining travel processes and therefore the airport should evolve and adapt the operations. Change is driven by the effective planning and collaboration of stakeholders including airport, airlines, and ground handlers (Inputs from ground handlers are excluded in this ICP review).

### 6.1 KLM

KLM is the national carrier of the Netherlands and the major hub carrier at Schiphol. The operational needs are therefore different compared to other airlines. Being the major volume contributor of traffic and operations, it is vital for the airport to understand the requirements of KLM for operational and strategic planning purposes. This can be effectively done by incorporating the inputs into the modelling of various process to study demand and capacity.

#### Participants

5.1.2e

#### 6.1.1 Check In

5.1.1c

#### 6.1.2 Baggage

5.1.1c

5.1.1c

### 6.1.3 Airside

- 
- 5.1.1c
- 

### 6.1.4 General Comments

- The team reckons a holistic modelling approach is a must to understand the interdependency of processes and how the outputs of one process impacts the other. The team is aware of the new software tool being onboarded by the ICP team which should link process in the future simulation modelling.
- No major faults are identified with the current modelling according to KLM however, the assumptions could be refined in future and other aspects like Early Bag Store could be considered in next steps.
- With regards to spatial allocation and planning, KLM views suggest that the airline is being under-rated despite being the major hub carrier. The team states that they should be given more room in planning to comfortably operate as a hub carrier.

## 6.2 TuiFly

TuiFly being one of the non-hub carriers and a charter operator, the needs of the airline follow seasonal trends and tend to peak with higher volume of holiday passengers carrying baggage.

Participants – 5.1.2e

### 6.2.1 Modelling

- 
- 
- 5.1.1c
- 
- 

### 6.2.2 Reporting

- The ICP reporting is meant to have an Operations focus and not a strategic overview although it feeds into the Capacity Declaration process.
- The TuiFly team looks forward to the new board at Schiphol being more positive on change and to consider all airlines to be important and contributing to the system.

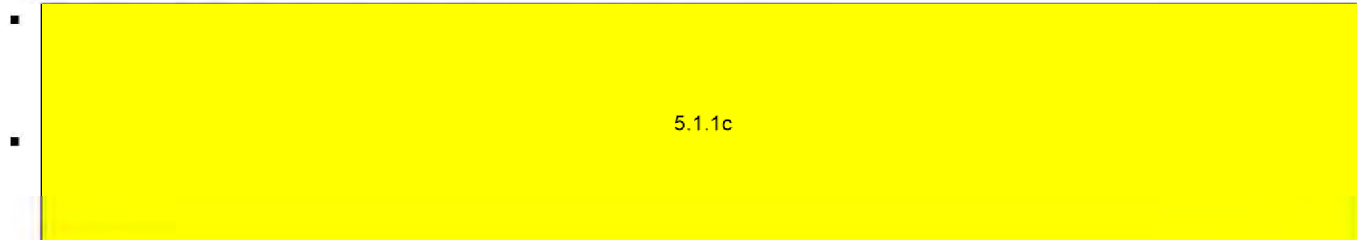
## 6.3 Corendon

Participants – 5.1.2e

### 6.3.1 Modelling

5.1.1c





## 6.4 EasyJet

Participants —  5.1.2e

### 6.4.1 Operational modelling



## 7. Conclusion and Recommendations

### 7.1 General Conclusion

To conclude it was deemed that overall, Schiphol's ICP process had achieved its stated intention and objectives of providing an adequate method of analysing its demand and capacity whilst giving an open and transparent insight into:

- the capacity of all critical airport processors at Amsterdam Airport Schiphol which is needed to accommodate the desired market demand and creating a common understanding of Schiphol's capacity challenges in the next 1-3 years, including airspace, landside, terminal, baggage and airside processes.
- the potential capacity bottlenecks that are expected.
- the engagement with Stakeholders.

In addition, the ICP Framework document provided sufficient detail and support to the ICP Dashboard, to provide:

- the expected demand (flight schedules) for the upcoming years and the weeks analysed.
- the aspects on which capacity analysis was performed.
- the norms and calculation parameters for the analysis (based on the Schiphol strategy and the user requirements of the airlines).
- the projects for the upcoming year influencing the capacity.
- the allocation framework used for the capacity analysis.
- Airline user requirements.

### 7.2 Conclusions & Recommendations

In order to further improve the ICP process we have suggested some recommendations below which have been extensively described in section 3 and 4 of the documents. As a summary we have highlighted:

- Storytelling and reading comprehension can be improved if more context is given in an introduction section. This will guide the reader as to the reason for performing the ICP process, the stated intention and objectives to be achieved, including what measures will be put in place if a bottleneck is identified, etc.
- There is insufficient pictorial and drawing references of the airport in the ICP Dashboard & Framework documents. Readers that are unfamiliar with the airport might need additional references to identify the different areas described.
- There is too much graphical/technical information for each processor in the ICP Dashboard. Detail should be placed in an appendix and up front more emphasis placed on context (pictorial/drawing) and narrative storytelling with only key or illustrative results (graphs/tables) presented.
- Some of the capacity assessments in the ICP report analyses the demand under very specific situations of asset availability (all assets available and fully operative) or under no-delay circumstances. This can lead to undetected bottlenecks which can be easily identified if a sensitivity analysis is performed.
- Unconnected processes can lead to non-realistic demands and therefore, undetected bottlenecks. It is recommended that a discrete simulation approach for terminal modelling be adopted using industry standards tools.
- The traffic volumes under which the current ICP was calculated will not be achieved due to government's restrictions to AMS traffic. To identify the consequences of that decrease of movements it is useful to undertake a separate analysis with new flight schedules that shows the impact of this movement decrease. This, however, may not be possible as an update to the current ICP process, but should be no later than the next scheduled ICP process.



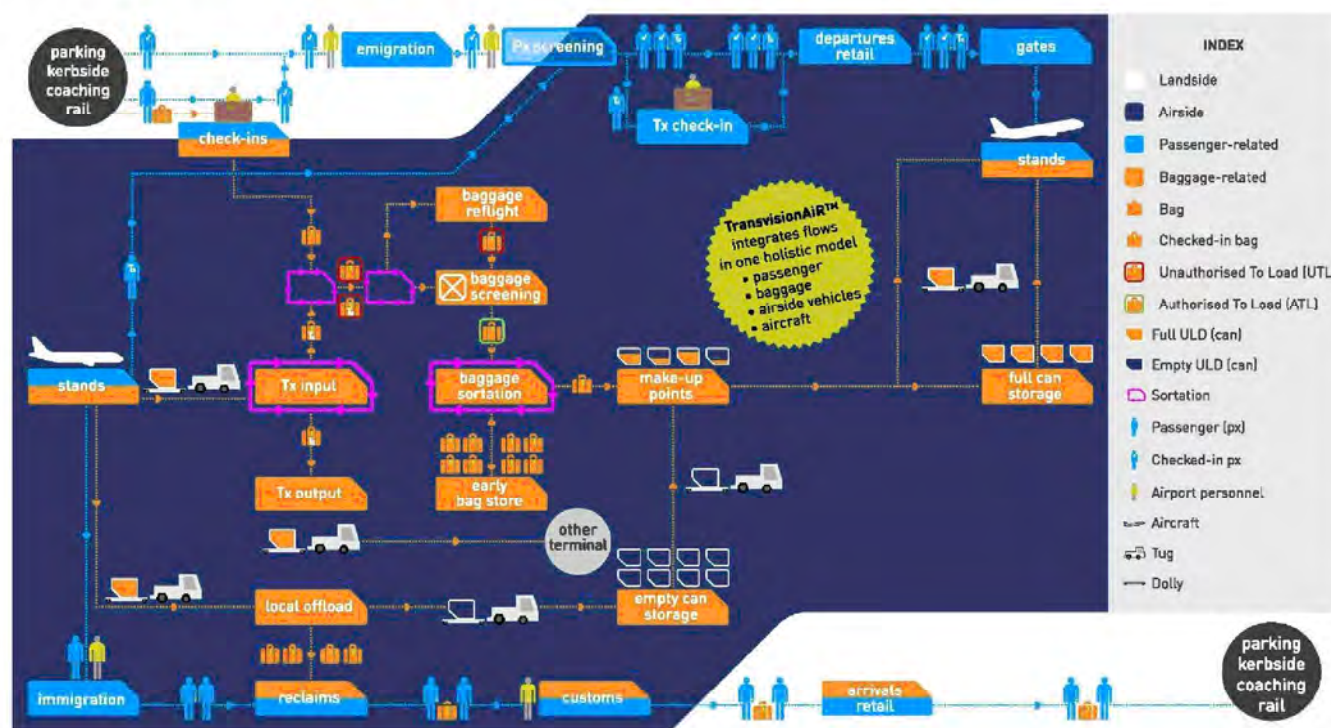
- It is recommended to include section into the Framework document (or an Appendix to the Dashboard) that explains thoroughly not only the calculation processes for the different processors of analysis but also how the assumptions were obtained or in what are they based on.
- Apart from the review of the calculation methods and the qualitative assessment of the document, there are additional comments regarding the capacity calculation process at Schiphol. It has been made clear throughout this review that Schiphol already applies a runway declaration as part of an established procedure. However, there are currently no other operational limits in place apart from the WIBO stands limit practiced in the morning peaks. Heathrow, for instance, has a well-established terminal as well as a runway and stands limits process that have been developed over time in response to the ongoing capacity constraints it manages. Based on the stand and terminal bottlenecks observed it would imply that it would be beneficial for Schiphol to consider the addition of stand or terminal limits.
- Although Heathrow's lessons can be useful in putting terminal and stands limits into practice, it might not be necessary to use the same number and complexity of limits. Limits should only be used when necessary, according to the scheduling principle, and this is to manage those critical areas with limited capacity such as departure security or arrival non-Schengen immigration. This will ensure that both airlines achieve satisfactory performance and passengers receive satisfactory service.
- Even if the capacity assessment reveals that there should be several limits, it might be best to start with just the critical limit and add more restrictions only after the process has been tested and is in place.
- The stakeholder discussions made it clear that some airlines are already experiencing capacity constraints in areas that are highlighted as bottlenecks or as possible bottlenecks in the ICP process. They express that the ICP process highlights the constraints but does not state what measures are being taken to address the bottlenecks. Whilst solutions are outside the scope of the ICP process, existing relevant projects (listed in the ICP Framework) should be included on each processor results page to support the context and storytelling. This mode of active engagement will support the stakeholders to understand their own action plan and measures to be implemented to mitigate the capacity constraints and tailor their operational procedures accordingly.

Stakeholder discussions have highlighted that a few airlines are already experiencing capacity constraints in areas that are highlighted as bottlenecks or possible bottlenecks in the ICP. Whilst the ICP process identifies the bottlenecks it does not identify the impacts or their scale and the consequence of any impact on prior or post processors. The existing ICP tools & methodology whilst sufficient to demonstrate demand bottlenecks against stated capacity has its limitations in so much as it is analytics based, each processor is analysed in isolation and is unconstrained. Therefore, the Stakeholders would support the adoption of a discrete simulation tool and methodology for terminal processor capacity assessment which would have the advantage of being processor dependant and capacity constrained. It is therefore recommended to carry out a fully integrated capacity assessment through industry standard capacity assessment tools giving a holistic picture of the bottlenecks and depict the impacts associated with it. It is understood the ICP Team is to adopt such a tool & methodology for the next ICP known as CAST, an internationally recognised product used by the likes of Heathrow, Dubai, Hong Kong & Changi. This will address the airlines and stakeholder's concerns and will help to understand the impact on operations and in the wider decision-making process including mitigation strategies, asset replacement and future investment.



## 8. Appendix A – About AiQ Consulting

AiQ Consulting is the trusted global partner in airport demand and capacity planning, working with airport owners and operators, airlines, and handlers. AiQ Consulting realizes capacity and optimizes highly constrained and saturated airports. Our practical attitude and operational knowledge create simple, cost effective, intelligent capacity solutions that allow airports to keep pace of existing and future passenger demands and technologies.



### 8.1 Objectives

The Objectives of study are to provide independent advice on the extent to which the current capacity analysis process is objective and feasible.

AiQ Consulting's approach for meeting the Objectives includes:

1. Undertaking a detailed review of the current Integral Capacity Process (ICP), including:
  - a) the current capacity assessment methodology & calculations
  - b) theoretical and operational capacity assessments undertaken.
2. Conclusions and recommendations to implement changes to the ICP Team, Process, Procedures, Tools, Calculations & Norms
3. Providing an overall recommendation of suitability and improvements in the current methodology.

### 8.2 Key Deliverables

AiQ Deliverables will include:

- Records of interviews and surveys
- Advisory Report, both the draft and final. These reports will include:
  - Technical Review Findings
  - Recommendations for actions in which Schiphol Group improve the capacity analysis.
- Executive Summary, both the draft and final.
- Project Manager Regular Review Meetings with Client

## 8.3 Team Composition

The AiQ Consulting Team will be headed by **5.1.2e** of AiQ Consulting Limited. **5.1.2e** is an Industrial Engineer recognised globally for his expertise in Airport Demand & Capacity Planning. Over the last 12 years he has played a key role in the planning of change at London Heathrow.

**5.1.2e** will be directly supported by **5.1.2e** of AiQ Consulting. **5.1.2e** who is AiQ's Technical lead and an Oxford Engineering Physics Graduate with over 35 years' experience in simulation. **5.1.2e** is responsible for the strategic development of TransvisionAiR™ and is an expert in Airport Capacity Modelling and Tools.

### Role & Responsibilities

**5.1.2e**

## 8.4 Contact



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