

Slot Monitoring and Historic Rights

Version 1.4 / 06 October 2024

Definition of series and determination of historic rights

The initial slot request is the key milestone for the allocation of (series of) slots for a new IATA season. The Historic Baseline Date (HBD) is the milestone to create the baseline that is used to evaluate the compliance to the use-it-or-lose-it rule. It is therefore crucial that on both sides of the routes operated by the airlines, the series that will be eligible to obtain historic rights at the end of the season are determined on the same basis. But the European Slot Regulation and the WASG leave room for interpretation. In the past decades a practice has arisen with differences between coordinated airports. This may create distortion of competition between airports or airlines.

Therefore, several European coordinators have developed this guidance with the objective to promote that the determination of historic rights is done in a harmonised manner, guided by the prime objective of airport slot coordination to ensure the most efficient declaration, allocation, and use of available airport capacity. It will optimise benefits to consumers, considering the interests of airports and airlines.

This guideline harmonises processes as much as necessary and provides leeway where this serves the primary objective of airport slot coordination.

Historic rights can only be assigned to series of slots (not to individual slots). It is therefore crucial to first define a series of slots and second determine the calculation method of the historic rights, based on which the SHL can be drawn up. The structure of this document consists of these 2 parts. Both parts are inextricably linked.

Part 1: Definition of "series of slots"

Definitions of the WASG and the European Slot Regulation

WASG

*A **series of slots** is at least 5 slots allocated for the same or approximately same time on the same day-of-the-week, distributed regularly in the same season.*

European Slot Regulation

Art.2.(a) 'slot' shall mean the permission given by a coordinator in accordance with this Regulation to use the full range of airport infrastructure necessary to operate an air service at a coordinated airport on a specific date and time for the purpose of landing or take-off as allocated by a coordinator in accordance with this Regulation

Art.2.(k): 'series of slots' shall mean at least five slots having been requested for the same time on the same day of the week regularly in the same scheduling period and allocated in that way or, if that is not possible, allocated at approximately the same time

The definitions of slots and series are important at HBD and for series created or extended after HBD, because this milestone is the reference point for the evaluation of the compliance of the usage of slots for the determination of historic rights and the creation of the historic lists (SHL) for the next equivalent season.

Interpretation (based on primary objective of slot coordination: efficient use of capacity):

- "5 slots" means minimum 5 consecutive weeks or fortnight weeks. (Other patterns may be accepted by coordinators when can be demonstrated as being regular)
- A valid series of slots can be composed of several periods each of minimum 5 consecutive weeks at the same time on the same day-of-week provided the series of slots are for the same service.
- The same time must be seen within the context of the coordination parameters for the airport. Coordinator should publish the coordination parameters used as reference for its definition of "same time" on the coordinator's website.
- The definition of a slot for the purposes of determining a series held at HBD means "operating an air service (...) on a specific date and time (...)". A series of slots at HBD is recognized by being the same direction (DEP/ARR), origin/destination, day-of-week, and same time as defined.

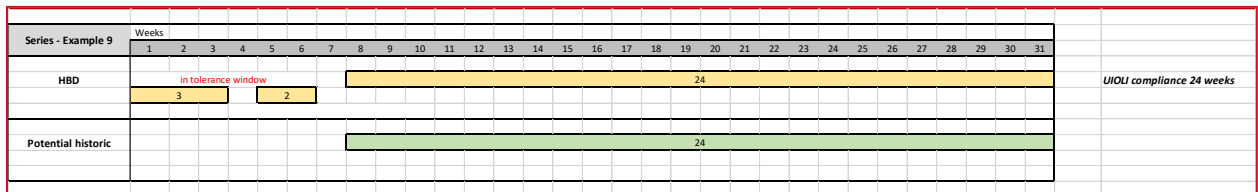
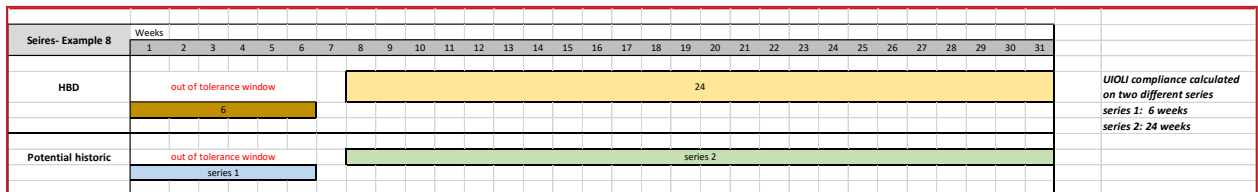
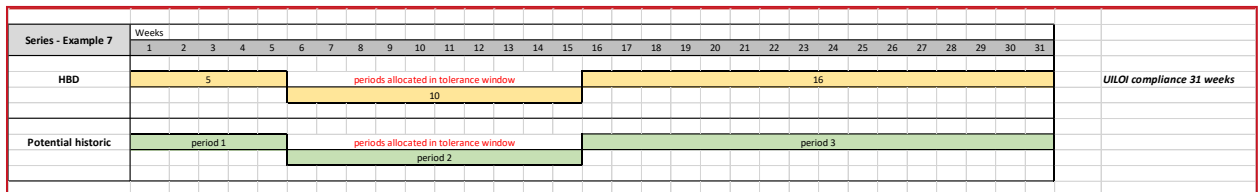
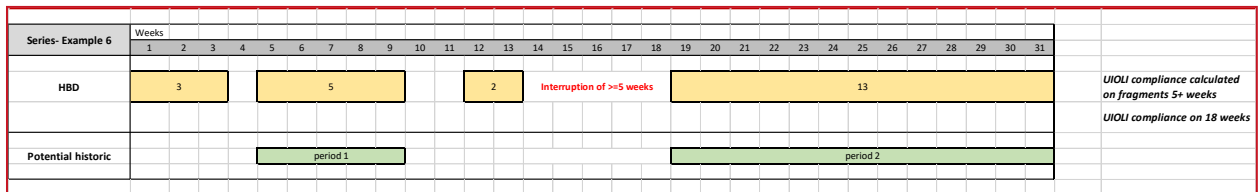
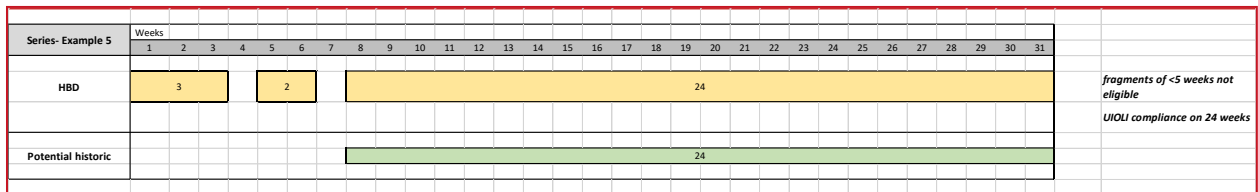
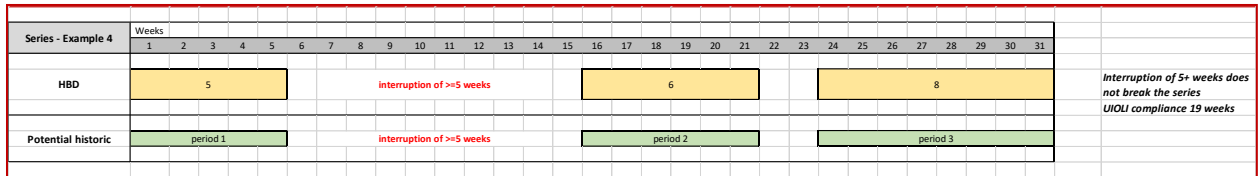
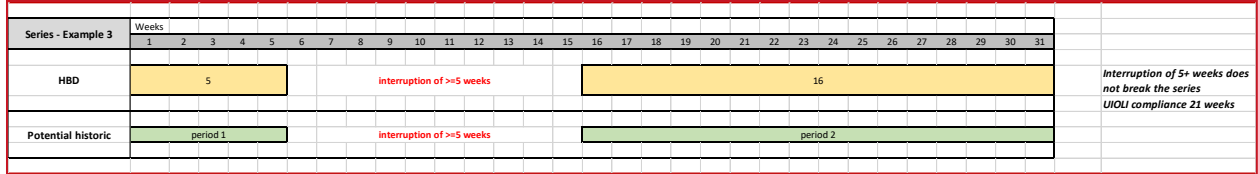
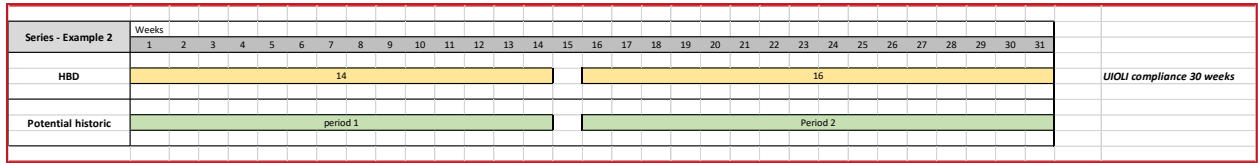
Coordination software identifies series by flight number, airlines are required to use unique flight numbers for each series at HBD. Changes in flight numbers or other attributes (within the coordination parameters and tolerances described in this document) made after HBD do not affect historic eligibility of the slot series.

- Post HBD changes are permitted with the tolerances described in this document.
- For the calculation of compliance with use-it-or-lose-it rules, series that are potentially eligible for historic rights are identified and confirmed at HBD.
- Historic rights of the series (UIOLI rules) are evaluated on the sum of the slots contained in the series across all periods of minimum 5+ weeks recognised as being part of that series/air service.

Examples:

Below examples are provided as guidance for the determination of historic rights and the composition of the Slot Historic List (SHL).

Series - Example 1	Weeks																															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
HBD	31 weeks																															UIOLI compliance 31 weeks
Potential historic	1 series																															



Part 2: Usage of series of slots (use-it-or-lose-it rule)

Air carriers must operate 80% of the slots allocated to a series of slots it holds at HBD to be granted historic rights of the series as allocated at HBD for the next equivalent season. But, for various reasons, the carrier may decide to adjust its program to changing conditions, as well as changing consumer demand.

1) use-it-or-lose-it (UIOLI) calculation – examples:

UIOLI - Example 1	Weeks																															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
HBD	14														16																UIOLI compliance 30 weeks	
Operated	14														16																30 Ops > 80%	
SHL	period 1														Period 2																	

UIOLI - Example 2	Weeks																															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
HBD	5					24																										UIOLI compliance on 29 weeks
Operated	X	1	X	X	X	1	24																								26 Ops > 80%	
SHL	5					24																										

UIOLI - Example 3	Weeks																															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
HBD	5					24																										UIOLI compliance on 29 weeks
Operated	X	X	X	X	X	24																								24 Ops > 80%		
SHL	5					24																										

UIOLI - Example 4	Weeks																															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
HBD	5					periods allocated in tolerance window										16										UIOLI compliance 31 weeks						
Operated	5					periods allocated in tolerance window										16										31 Ops > 80%						
SHL	period 1					periods allocated in tolerance window										period 3																

UIOLI - Example 5	Weeks																															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
HBD	5					periods allocated in tolerance window										16										UIOLI compliance 31 weeks						
Operated	X	X	X	X	X	periods allocated in tolerance window										16										26 Ops > 80%						
SHL	period 1					periods allocated in tolerance window										period 3																

2) New series allocated after HBD:

Ad-hoc slots allocated after HBD are allocated on a non-historic basis. However, slots requested as a series but initially allocated on an ad-hoc basis, which form a series by the end of the season, may be eligible for historic precedence. For a series of slots newly allocated after the Historic Baseline Date, the number of slots in the series on the date of first allocation forms the basis of the use-it-or-lose-it calculation.

3) Structural changes (5 or more consecutive slots):

Changes of slots for five or more consecutive weeks.

Changes like time, number of seats, aircraft type, origin/destination, service type, flight number will not affect historic eligibility of the slot series but may impact the attributes of historic flights as distributed at SHL.

a) **Calculation of compliance to use-it-or-lose-it:**

The change does not affect the calculation of use-it-or-lose-it. The calculation is made on the number of slots of the original series as held at HBD.

Examples:

		STRUCTURAL CHANGE (>=5weeks)																																		
Series change after HBD	Weeks	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31				
Example 1																																				
HBD		31 weeks																																UIOLI compliance 31 weeks		
Changes after HBD		change 5 weeks					21																					change 5 weeks						Calculation does not change		
		5																										5						UIOLI compliance 31 weeks		
Operated		X	X	Op	Op	Op																							Op	Op	Ops	X	X			
SHL		5					21																					5						historic granted to operated		
																																		or		
or		31 weeks																																all periods aligned to most operated		

		STRUCTURAL CHANGE (>=5weeks)																																		
Series change after HBD	Weeks	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31				
Example 2																																				
HBD		31 weeks																																UIOLI compliance 31 weeks		
Changes after HBD		change 5 weeks					21																					change 5 weeks						Calculation does not change		
		5																										5						UIOLI compliance 31 weeks		
Operated		X	X	X	X	X																							X	X	X	X	X		More than 20% cancellations	
SHL		NO-HISTORIC																																		

b) **Determination of historic rights in SHL:**

The decision is influenced by the availability of the slots in the "historic baseline".

- At the latest at SHL, the coordinator informs the carrier if the time reported on the SHL is the original time allocated at HBD or the latest approved time. The same applies for other capacity relevant parameters such as aircraft type, terminal capacity, domestic/international origin/destination.

- Between SHL and Agreed SHL the airline can discuss the possibilities with the coordinator to provide consumers with convenient schedules that meet demand and are consistent from one season to the next.

4) Ad hoc changes:

Tolerance window:

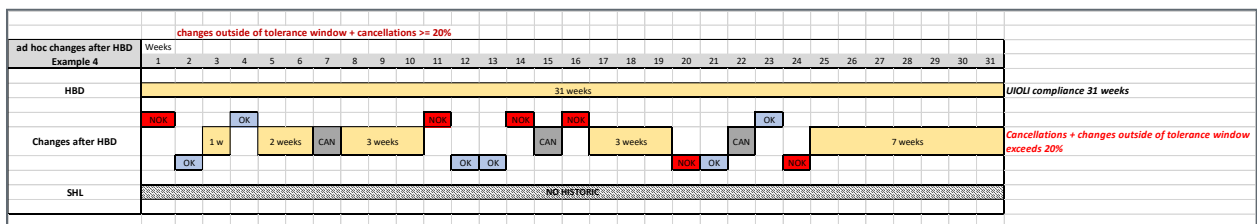
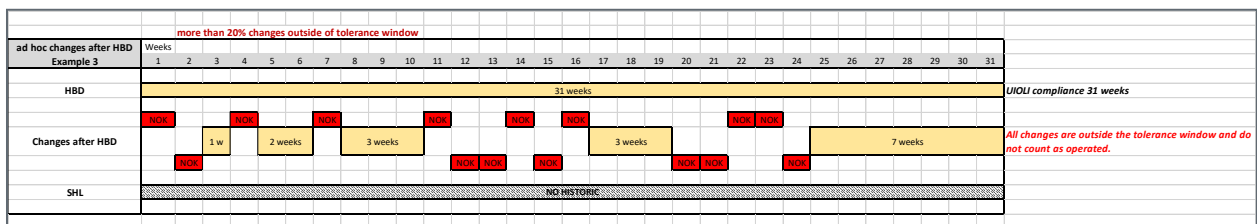
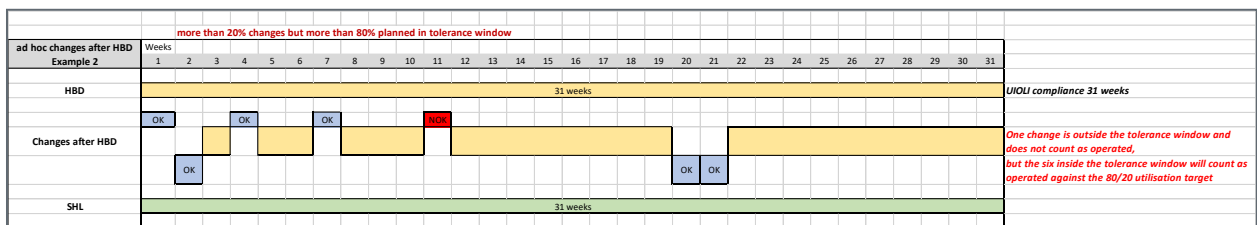
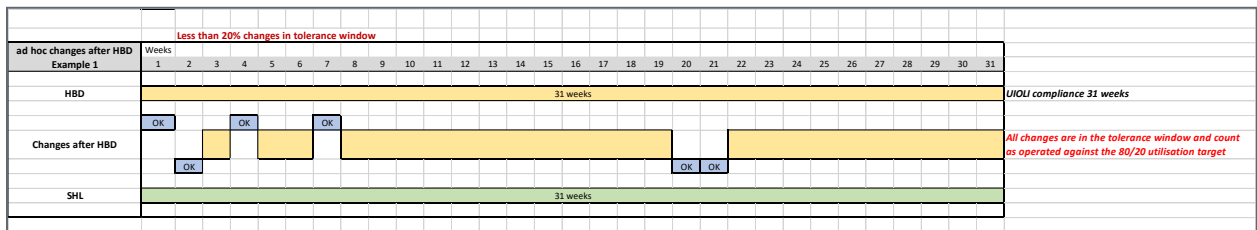
The guidance is that ad hoc time changes of up to +/- **175** minutes off the HBD time are counted towards the use-it-or-lose-it rule.

Changes outside of this window are counted like cancellations as "not operated" for the use-it-or-lose-it rule.

Remark: In this document, the tolerance window applies only for the planning of operations. Deviations in actual operations (punctuality) are part of the slot enforcement.

Examples:

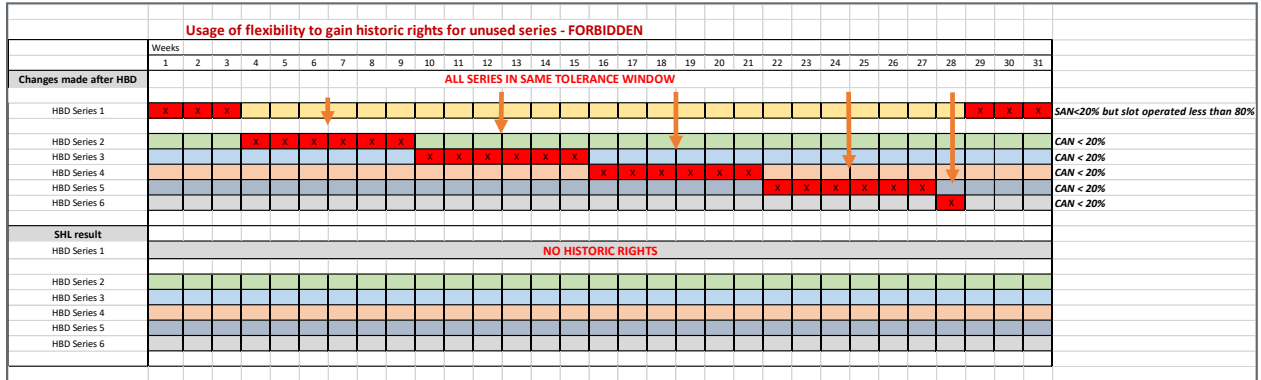
<u>Legend for ad hoc changes:</u>	OK	flight is in tolerance window and counts against 80/20
	NOK	flight is outside tolerance window and does not count against 80/20
	CAN	flight is cancelled and does not count against 80/20



Remark:

Airlines cannot use the tolerance window to gain historic rights for series or services that were not operated 80% as allocated at HBD.

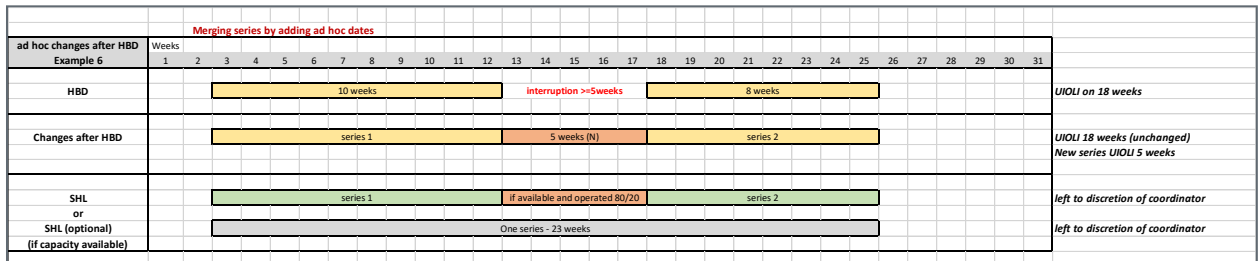
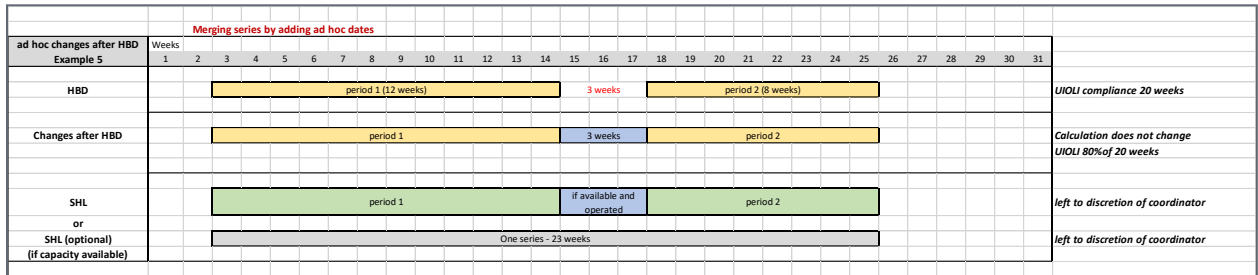
Example:



5) Slots allocated on ad-hoc basis after HBD:

Coordinators will consider the extension of existing series as ad-hoc new allocation. Slots allocated on an ad-hoc basis are not eligible for historic precedence. However, slots requested as a series but initially allocated on an ad-hoc basis, which form a series and have been operated as a series by the end of the season, may be eligible for historic precedence.

Examples:

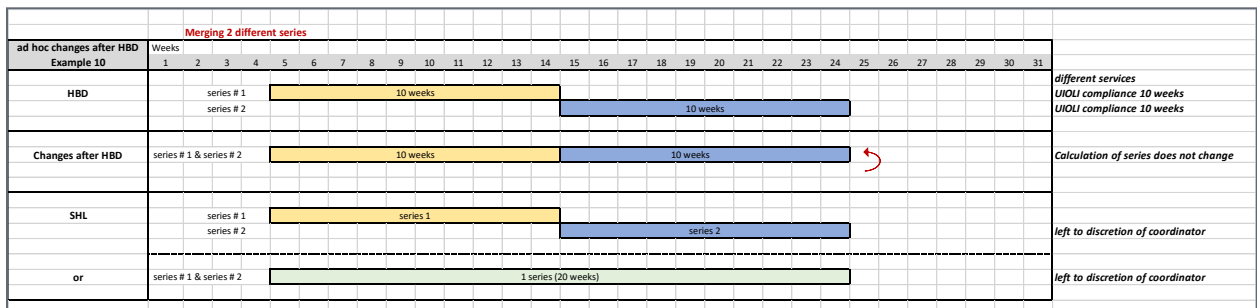
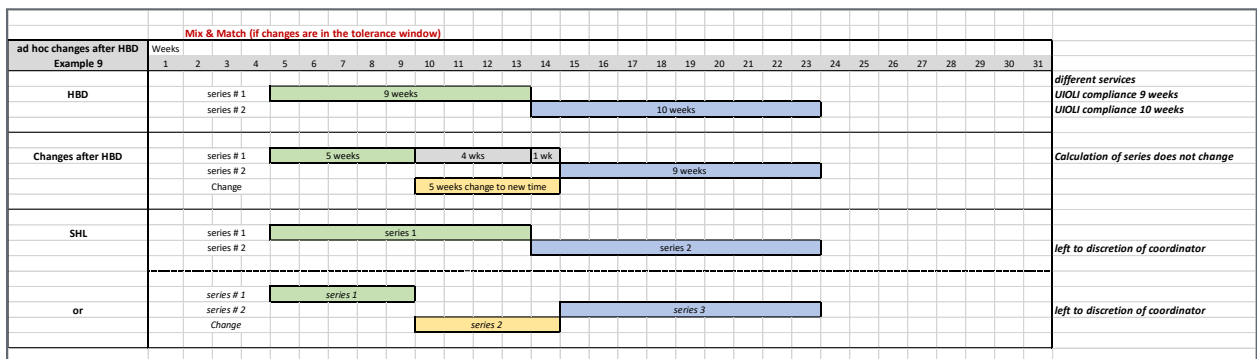
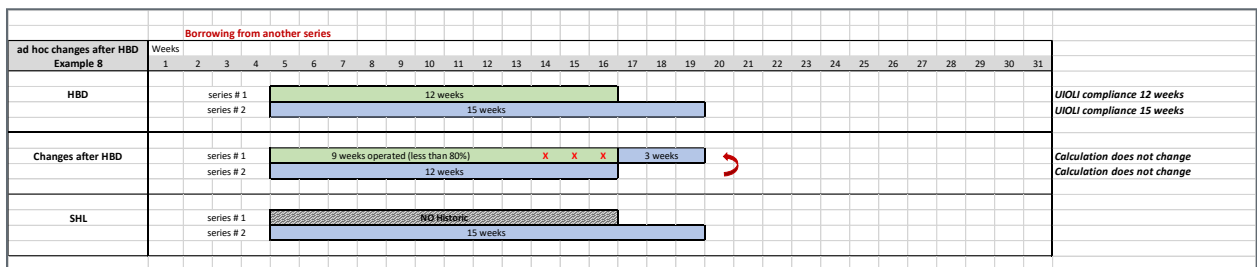
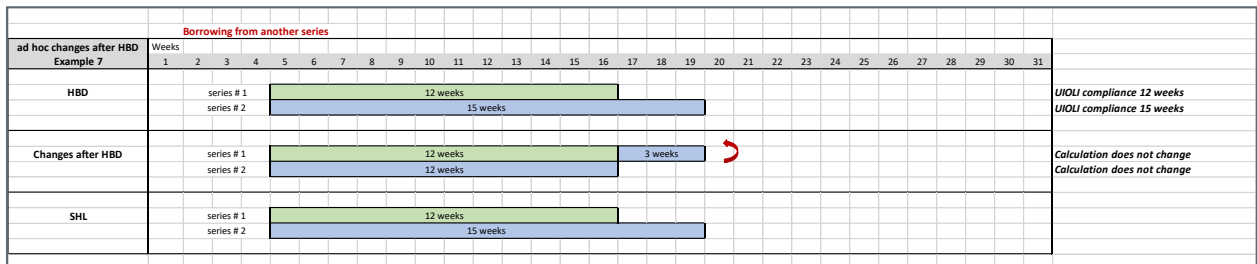


6) Slot transfers after HBD:

Slots changed to complete another series do not change the compliance target of the series as held at HBD and do not break the series.

In case of transfer of slot from one airline to another, at SHL the series returns to the airline who was operating the series, unless otherwise agreed between the parties (the two airlines and the coordinator).

If an airline holds more than one series of slots at the same time with identical or overlapping periods of operation, then the usage of each series is calculated separately.



7) Creation of SHL lists (flexibility):

When creating the SHL, Coordinators may consolidate slots that have passed the utilisation threshold by combining the same series.

- When consolidating fragmented periods of the same service into a longer series, the "same service" means a series of slots operated for the same flight number, direction (DEP/ARR), weekday, origin/destination, and time.
- Provided that the slot periods consolidated in these series are available in the capacity defined for historic rights.
- Where the consolidation of series does not result in a loss of historic entitlement for the airline concerned.

8) Additional remarks:

- Potential misuse:
 - Requesting new slots or holding slots that the airline or other aircraft operator does not intend to operate may be considered as a misuse.
 - Coordinators and schedules facilitators will identify air carriers who are requesting slots in a way that they would benefit from a higher priority in the initial slot allocation. Coordinators or schedule facilitators may decide to give a lower priority level to the initial demand made by this carrier at that airport or for that series of slots in the next season. The coordinator or schedules facilitator will send a list of the cases to the Coordination Committee.
- The present guidance is subject to changes pursuant to change of regulation(s).

Part 3: Additional and more in-depth information regarding the calculation of historic precedence on our Level 3 Airports Innsbruck and Vienna.

[INN]: Airport Innsbruck is fully coordinated on days 6 and 7 only in winter seasons, as well as on January 2nd and January 9th.

[VIE]: Airport Vienna is fully coordinated on every day in every season.

Airport Slots coordinated during night or night shoulder periods according to the Mediation agreement are subject to separate rules (→ see "Night flight regulation VIE")

A. Eligibility for historic precedence

- A.1. To be eligible for historic precedence in the next equivalent season, slots must **not be operated repeatedly and intentionally** at either a **significantly** different time or in a **significantly** different way than allocated.
- A.2. In the event of single date changes of a series, the changed flight will be considered for the application of the 80% rule only if the airline:
 - ✓ use the same slot time for another service, or
 - ✓ uses the same service with a new slot time if the new slot time is within a "Tolerance Window" of +/- 175 minutes with respect to the baseline time.
- A.3. If the slot time is changed as well as the details of the service, the SlotHolder Link Information will be changed and this series will no longer count towards fulfilling the 80% usage obligation, in order to avoid circumvention activities such as "borrowing" operations from more correct flights.
- A.4. [INN]: Postponing single ops at X-Mas – single operations may be moved from days 6 or 7 to another day due to Christmas holidays. These postponements must be declared to the coordinator in advance and will then be counted against the original baseline.
- A.5. In cases where the SlotHolder information is kept (e.g. short-term ad hoc time changes within the tolerance window) the punctuality is calculated against the new times.

Please note:

[INN]: When the aircraft type varies during the scheduling period, the most commonly used type will normally be considered as historic in the next equivalent season (subject to availability).

B. Counting Operations

B.1. Actual operations count towards the 80%-use when operating within the following times of the allocated slot:

[INN]:

- ✓ Arrivals: 2 hours early to 5 hours late
- ✓ Departures: 30 minutes early to 5 hours late

[VIE]:

- ✓ Arrivals: 2 hours early to 3 hours late
- ✓ Departures: 30 minutes early to 3 hours late

Remark: A flight rotation (Dep/Arr or Arr/Dep) that is planned outside the night planning period, but which leads to a night violation, will not count against the 80%-use.

B.2. Delays of more than 3 [VIE] or 5 [INN] hours should be discussed between the airline and the coordinator.

B.3. For flights with a delay of more than 24 hours, the "Airport Slot Coordination Guideline, point 5 Re-Clear Airport Slots" must be observed and, if necessary, a new airport slot must be coordinated for the new flight day.

C. Repeated and intentional slot abuse

C.1. A series of flights is considered to have a slot performance issue if its average actual time falls outside of a slot tolerance range by a statistically significant amount (see Annex 1 for details).

The slot tolerance ranges are:

[INN]:

- ✓ Arrivals: 20 minutes early to 60 minutes late
- ✓ Departures: 10 minutes early to 60 minutes late

[VIE]:

- ✓ Arrivals: 20 minutes early to 30 minutes late
- ✓ Departures: 10 minutes early to 30 minutes late

C.2. The slot tolerance ranges do not represent a licence for intentional abuse within these ranges. They are intended as filters to distinguish potential slot abuse from normal operational variability. Evidence of *intentional* off-slot operations within these tolerances is still considered slot abuse.

C.3. Having identified a potential slot performance issue, the coordinator will contact the air carrier concerned seeking an explanation. The air carrier is expected to respond to the enquiry within a reasonable timeframe set by the coordinator. If an adequate explanation is not forthcoming, the coordinator may seek the assistance of the airport's Slot Performance Committee.

C.4. An air carrier's historic precedence to a series of slots is at risk where there is evidence of intentional abuse, or where the air carrier fails to provide the coordinator with adequate information to rule out intentional abuse or provides false or misleading information. Article 14(4) of the Slot Regulation permits the coordinator to withdraw a

series of slots for the remainder of the scheduling period after having heard from the air carrier concerned and issued a single warning.

- C.5. The coordinator may use whatever additional information is available to determine intentional slot abuse, such as published/ticketed times, ground handling requests, flight plan information, or comparisons with the slot times at the other end of the route.

D. Justifications for the non-utilisation of slots

Cancellations after the "Historics Baseline Date" and failures to operate without cancelling in advance will count against the 80% use, unless they can be justified under Article 10(4) of the Slot Regulation.

Article 10(4) of the Slot Regulation provides limited circumstances where the non-utilisation of slots can be justified.

Each justification must be considered on its own merits. Justifications are subject to a general test of reasonableness that

- ✓ the circumstances are genuinely beyond the air carrier's control and could not have been anticipated or mitigated
- ✓ the volume and duration of the cancellations are proportionate to the circumstances
- ✓ the air carrier has sought to recover normal operations as soon as possible
- ✓ the air carrier has no feasible alternative use for the slots

SCA will collect all claims throughout the season and evaluate and check their applicability during SHL preparation.

Please note:

Air carriers must inform the coordinator of any non-utilisation of slots they believe is justified in advance where possible or immediately after the event. Claims should not be left until the determination of historic precedence at the end of the season.

Non-utilisation generally cannot be justified where the air carrier fails to operate without cancelling in advance where it is practical to do so.

Non-utilisation of a complete series of slots generally cannot be justified where the slots are newly allocated from the pool and the air carrier has never operated those slots.

E. Allocations on a non-historic basis

Slots may become available due to circumstances where the original slot holder will none-the-less retain historic precedence in the next equivalent season. This situation can arise where the cancellation is justified under Article 10(4) or where the cancellation, or combination of cancellations, is less than 20% of the original series of slots.

To make use of scarce airport capacity, the coordinator may offer these slots to other air carriers on a non-historic basis. The coordinator will inform the air carrier of the slots' status at the time of the offer, and in accepting the offer the air carrier acknowledges that the slots are not eligible for historic precedence in the next equivalent season.

F. Data used for slot monitoring

The actual flight data used for slot monitoring is supplied by the airport operator based on flight details and times recorded by the airport and ATC (Austro Control and Eurocontrol).

Flight data are based on the block-on / block-off times. These times may differ slightly from air carriers' own records (e.g. from dispatch records or ACARS).

G. Date adjustments for a new season

Historic precedence is determined in relation to the dates of a new season. The start and end dates of the series are adjusted to the nearest equivalent dates on the same day-of-week in the next equivalent season. For calendar reasons, this will be one day earlier, or two days earlier following a leap year.

For example, a Winter 2023/24 day 6 series 16DEC-30MAR becomes a day 6 series 14DEC-29MAR in Winter 2024/25.

When the number of weeks in a season changes, series of slots with start and/or end dates at the beginning or end of the season are adjusted to the new season boundaries.

For calendar reasons, when seasons become longer an extra week appears at the end of the season, and when they become shorter a week is lost at the beginning of the season.

ANNEX 1: SLOT PERFORMANCE METHODOLOGY

A series of flights is considered to have a slot performance issue if its "true average" actual time falls outside of a slot tolerance range by a statistically significant amount.

Slot tolerance ranges [INN]:

- Arrivals: 20 minutes early to 60 minutes late
- Departures: 10 minutes early to 60 minutes late

Slot tolerance ranges [VIE]:

- Arrivals: 20 minutes early to 30 minutes late
- Departures: 10 minutes early to 30 minutes late

These slot tolerance ranges are derived from analyses of actual flight operations and include normal operational variations.

The test of statistical significance is conducted using the t-distribution method for small sample sizes¹.

In addition to the arithmetic average or "sample average", the "sample standard deviation" is another element for determining slot performance.

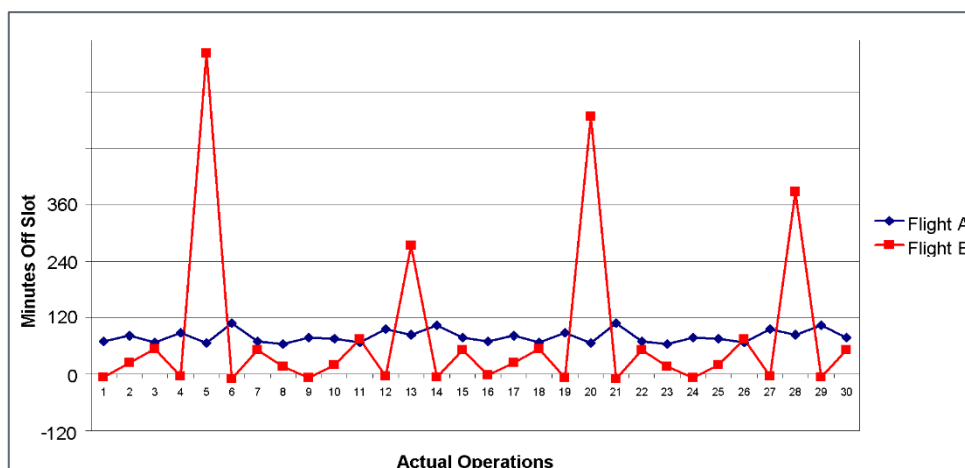
The formula used is:

$$M = x \pm t (s / \sqrt{n})$$

Explanation:

- M : true average
- x :
- t : t-distribution factor
- s : sample standard deviation
- n : sample size (i.e. number of operations)

The purpose of this method is to distinguish repeated (and possibly intentional) off-slot operations from statistically insignificant variations.



¹ 'Small' is generally considered a sample size of less than 30. Given that a winter season has a maximum of 22 weeks, this method is appropriate. A summer season with 30 or 31 weeks is still appropriate to see here. For larger sample sizes, the t-distribution approaches the normal distribution.

[INN] Example:

A flight has an average delay of 80 minutes. If the flight operates *repeatedly* 80 minutes late, it indicates intentional slot abuse. However, if it generally operated on time but had suffered a few large delays, intentional abuse is unlikely. This is illustrated below:

Flight A		Flight B	
sample average (min)	= 80	sample average (min)	= 80
sample standard deviation	= 12	sample standard deviation	= 83
Number of Operations	= 22	Number of Operations	= 22
t-value for 30 ops	= 1.721	t-value for 30 ops	= 1.721
M	= $80 \pm 1.721 (12 / \sqrt{22})$	M	= $80 \pm 1.721(83 / \sqrt{22})$
	= 80 ± 4		= 80 ± 30
M _{min}	= 76	M _{min}	= 50
M _{min}	> 60, so significantly late	M _{min}	< 60, so not significantly late

Flight A falls outside of the slot tolerance range by a statistically significant amount and is therefore repeatedly and significantly off-slot. Additionally, if the flight was allocated a slot at 06:55 but the air carrier published 08:10, it is clearly intentional slot abuse.

For Flight B, the fact that its observed average delay of 80 minutes appears greater than the 60-minute tolerance is not statistically significant. The flight had suffered a few large delays, but otherwise performed within tolerances.

[VIE] Example:

A flight has an average delay of 40 minutes. If the flight operates *repeatedly* 40 minutes late, it indicates intentional slot abuse. However, if it generally operated on time but had suffered a few large delays, intentional abuse is unlikely. This is illustrated below:

Flight A		Flight B	
sample average (min)	= 40	sample average (min)	= 40
sample standard deviation	= 12	sample standard deviation	= 83
Number of Operations	= 30	Number of Operations	= 30
t-value for 30 ops	= 1.699	t-value for 30 ops	= 1.699
M	= $40 \pm 1.699 (12 / \sqrt{30})$	M	= $40 \pm 1.699 (83 / \sqrt{30})$
	= 40 ± 4		= 40 ± 26
M _{min}	= 36	M _{min}	= 14
M _{min}	> 30, so significantly late	M _{min}	< 30, so not significantly late

Flight A falls outside of the slot tolerance range by a statistically significant amount and is therefore repeatedly and significantly off-slot. Additionally, if the flight was allocated a slot at 06:55 but the air carrier published 07:30, it is clearly intentional slot abuse.

For Flight B, the fact that its observed average delay of 40 minutes appears greater than the 30-minute tolerance is not statistically significant. The flight had suffered a few large delays, but otherwise performed within tolerances.

Values of t

Based on 95% probability – one-sided test:

No of Ops	t	No of Ops	t	No of Ops	t
2	6.314	12	1.796	22	1.721
3	2.920	13	1.782	23	1.717
4	2.353	14	1.771	24	1.714
5	2.132	15	1.761	25	1.711
6	2.015	16	1.753	26	1.708
7	1.943	17	1.746	27	1.706
8	1.895	18	1.740	28	1.703
9	1.860	19	1.734	29	1.701
10	1.833	20	1.729	30	1.699
11	1.812	21	1.725	31	1.697