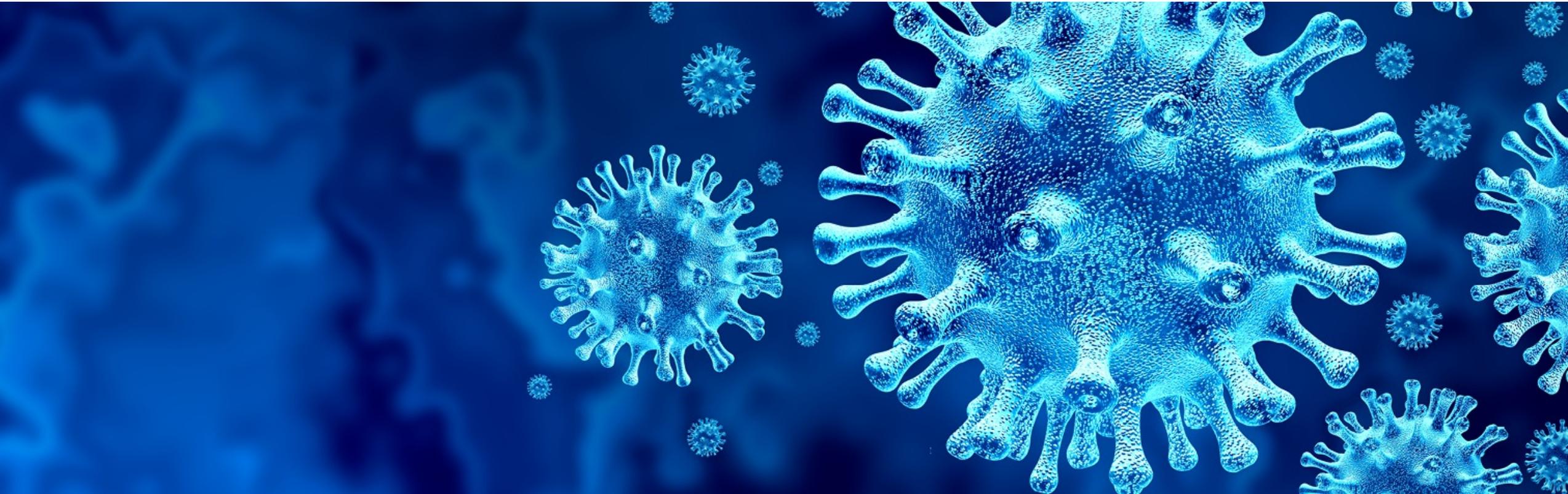
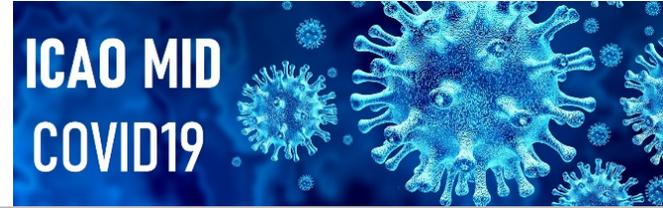




ICAO MID

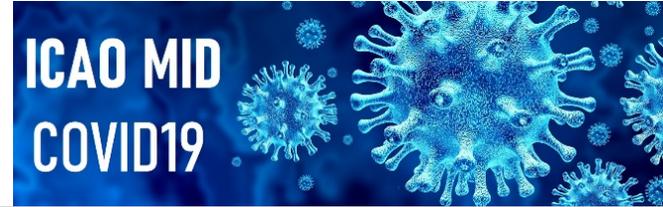
**SEVENTH MEETING OF THE AERONAUTICAL INFORMATION MANAGEMENT
SUB-GROUP (AIM SG/7)
21 - 22 October 2020**





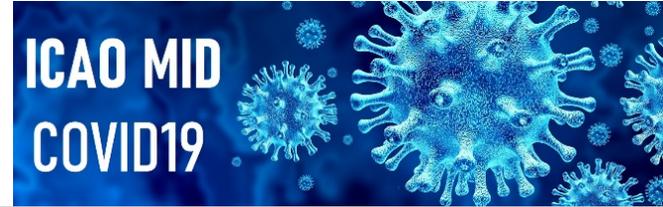
AIM SG/7

Agenda Item 4: Revised MID Air Navigation Strategy



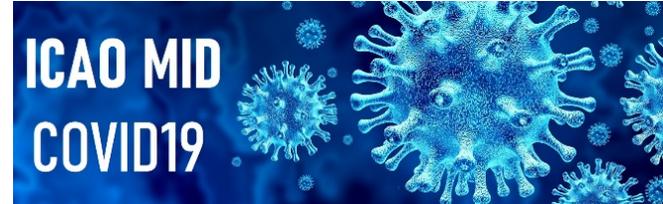
Outline

- ✈ Revised MID Air Navigation Strategy
- ✈ B1 - DAIM (GANP 6th edition)
- ✈ Draft Mid Region DAIM thread Block 1 Prioritization and Monitoring
- ✈ MID Potential Key Performance Indicators (KPIs)
- ✈ Action by the meeting.



Revised MID Air Navigation Strategy

- MSG7 VTC (1 - 3 September 2020) reviewed the draft of the revised Strategy.
- The strategy identified the ASBU Threads/Elements that might be classified as priority 1; along with associated proposed monitoring elements (applicability area, performance indicators/supporting metric, and timeline).
- The meeting agreed also that the MIDANPIRG Sub-Groups should conduct virtual meetings in the 4th quarter of 2020 to review the GANP 6th edition and identify ASBU priority 1 Threads/Elements and associated monitoring elements, considering the Secretariat proposal and States' and stakeholders' inputs.
- MID ASBU Webinar was held on 13 – 15 October 2020 in order to familiarize the participants with the 6th Edition of the GANP and showcase the different ASBU Threads through online demonstration using the GANP Portal, for harmonization purpose and an increased efficiency of the MIDANPIRG Sub-Groups during the discussion of the subject.
- The Webinar reviewed the initial draft of the MID Region Air Navigation Strategy. The webinar agreed on ASBU Threads and Elements prioritization. Monitoring elements (indicators/metrics, applicability areas, targets and timelines) should be discussed during the upcoming MIDANPIRG Sub-Groups virtual meetings;
- The Webinar agreed on an initial list of Key Performance Indicators to be used for performance monitoring at National and Regional levels. Further discussion/ refinement by the MIDANPIRG Sub-Groups.



Revised MID Air Navigation Strategy

- SL: AN 1/5 – 20/178 issued 1 October 2020 on Follow-up to MSG/7 Conclusion 7/6 related to the Update of the MID Region Air Navigation Strategy.
- MSG7 concluded (Conclusion 7/6) that, in order to improve the Initial Draft of the revised MID Region Air Navigation Strategy :
 - a) States be invited to provide the MID Office by 15 October 2020 with their Air Navigation priorities and updated National Plan considering the provisions of the 6th Edition of the GANP endorsed by the 40th Session of the General Assembly (A40);
 - b) MIDANPIRG Sub-Groups provide proposals of amendment of the MID Region Air Navigation Strategy, considering the 6th Edition of the GANP, the inputs of States and Stakeholders, and agreed priorities, before 15 December 2020; and
 - c) the joint ACAO/ICAO ASBU Symposium review the inputs of States, Stakeholders and MIDANPIRG Sub-Groups for consolidation of the revised version of the MID Region Air Navigation Strategy to be presented to MIDANPIRG for endorsement.



International Civil Aviation Organization | Organisation de l'aviation civile internationale | Organización de Aviación Civil Internacional | Международная организация гражданской авиации | منظمة الطيران المدني الدولي | 国际民用航空组织

File Ref: AN 1/5 – 20/178 1 October 2020

Subject: Follow-up to MSG/7 Conclusion 7/6 related to the Update of the MID Region Air Navigation Strategy

Action Required: Reply not later than 15 October 2020

Sir,

I have the honour to refer to the outcome of the Seventh Meeting of the MIDANPIRG Steering Group (MSG/7), held virtually, 1-3 September 2020, and in particular to the following MSG Conclusion:

MSG Conclusion 7/6: Update of Mid Region Air Navigation Strategy

That, in order to improve the Initial Draft of the revised MID Region Air Navigation Strategy at **Appendix 5.1A**, with States and stakeholders inputs:

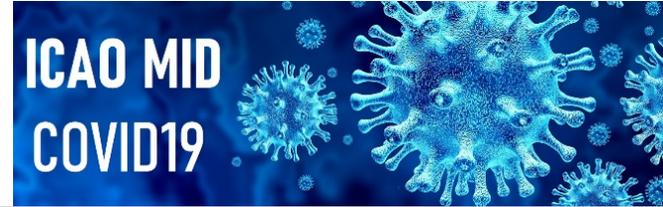
- a) States be invited to provide the MID Office by **15 October 2020** with their Air Navigation priorities and updated National Plan considering the provisions of the 6th Edition of the GANP endorsed by the 40th Session of the General Assembly (A40);
- b) MIDANPIRG Sub-Groups provide proposals of amendment of the MID Region Air Navigation Strategy, considering the 6th Edition of the GANP, the inputs of States and Stakeholders, and agreed priorities, before **15 December 2020**; and
- c) the joint ACAO/ICAO ASBU Symposium review the inputs of States, Stakeholders and MIDANPIRG Sub-Groups for consolidation of the revised version of the MID Region Air Navigation Strategy to be presented to MIDANPIRG for endorsement.

Therefore, you are kindly requested to provide ICAO MID Office with your State's Air Navigation priorities and updated National Air Navigation Plan; not later than **15 October 2020** using the attached **Template**.

Accept, Sir, the assurances of my highest consideration.



Mohamed Smaoui
Acting Regional Director
Middle East Office



B1 - DAIM (GANP 6th edition)

DAIM-B1/1	Provision of quality-assured aeronautical data and information
DAIM-B1/2	Provision of digital Aeronautical Information Publication (AIP) data sets
DAIM-B1/3	Provision of digital terrain data sets
DAIM-B1/4	Provision of digital obstacle data sets
DAIM-B1/5	Provision of digital aerodrome mapping data sets
DAIM-B1/6	Provision of digital instrument flight procedure data sets
DAIM-B1/7	NOTAM improvements

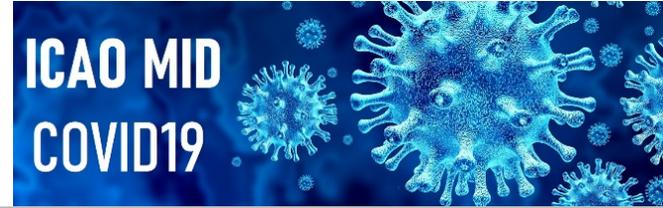
Draft Mid Region DAIM threads Block 1 Prioritization and Monitoring

DAIM		Priority	Applicability	Performance Indicator
DAIM B1/1	Provision of quality-assured aeronautical data and information	1	All States	<p>Supporting Metrics:</p> <ol style="list-style-type: none"> <u>Number of States that have implemented QMS for AIS/AIM</u> <u>Number of States that have implemented WGS-84 for horizontal plan (ENR, Terminal, AD) and have implemented WGS-84 Geoid Undulation</u> <u>Number of States that have implemented an AIXM-based AIS database (AIXM V5.1+)</u> <u>Number of States that have established formal arrangements with at least 50% of their AIS data originators</u>
DAIM B1/2	Provision of digital Aeronautical Information Publication (AIP) data sets		Priority 2	
DAIM B1/3	Provision of digital terrain data sets	1	All States	<ol style="list-style-type: none"> <u>Indicator: % of States that provide required Terrain digital datasets</u> <u>Supporting Metric: Number of States that provide required Terrain digital datasets</u>

DAIM		Priority	Applicability	Performance Indicator
DAIM B1/4	Provision of digital obstacle data sets	1	All States	<ol style="list-style-type: none"> Indicator: % of States that provide required <u>Obstacle digital datasets</u> Supporting Metric: Number of States that provide <u>required Obstacle digital datasets</u>
DAIM B1/5	Provision of digital aerodrome mapping data sets		Priority 2	
DAIM B1/6	Provision of digital instrument flight procedure data sets		Priority 2	
DAIM B1/7	NOTAM improvements		Priority 2	

MID Potential key performance indicators (KPIs)

- A set of performance indicators is used that allows for monitoring of current operations, as at **Appendix 4A**.
- ICAO recommends that States utilize a focused set of Key Performance Indicators (KPIs) that provide the means of identifying shortfalls and prioritizing investments.
- This approach will allow all stakeholders to analyze the current and future performance of the air navigation system and to take actions, if needed, to fill the gap between the current performance and the expected one.
- It is proposed to work on a set of KPIs, according to needs and capabilities.
- To start with a simple set of indicators (Core KPIs) matching States needs, and to complete them later with more complex ones (Additional KPIs).
- This would be further reviewed/discussed by the ASBU Symposium before presentation to MIDANPIRG/18 for final decision.



Action by the meeting

The meeting is invited to:

- Review and update the DAIM Thread indicators, metrics, targets, timelines, etc.; and
- Note the list of KPIs to be selected for performance monitoring and provide inputs/comments, as appropriate.



ICAO | UNITING AVIATION



ICAO

**North American
Central American
and Caribbean
(NACC) Office**
Mexico City

**South American
(SAM) Office**
Lima

**ICAO
Headquarters**
Montréal

**Western and
Central African
(WACAF) Office**
Dakar

**European and
North Atlantic
(EUR/NAT) Office**
Paris

**Middle East
(MID) Office**
Cairo

**Eastern and
Southern African
(ESAF) Office**
Nairobi

**Asia and Pacific
(APAC) Sub-office**
Beijing

**Asia and Pacific
(APAC) Office**
Bangkok



THANK YOU



#	Title	Definition	Measurement Units	Objects Characterized	Data Requirement	Data Feed Providers
KPI01	Departure punctuality	Percentage of flights departing from the gate on-time (compared to schedule).	% of scheduled flights	The KPI is typically computed for traffic flows, individual airports, or clusters of airports (selection/grouping based on size and/or geography).	For each departing scheduled flight: <ul style="list-style-type: none"> - Scheduled time of departure (STD) or Scheduled off-block time (SOBT) - Actual off-block time (AOBT) 	Schedule database(s), airports, airlines and/or ANSPs
KPI02	Taxi-out additional time	Actual taxi-out time compared to an unimpeded/reference taxi-out time.	Minutes/flight	The KPI is typically computed for individual airports, or clusters of airports (selection/grouping based on size and/or geography).	For each departing flight: <ul style="list-style-type: none"> - Actual off-block time (AOBT) - Actual take-off time (ATOT) In addition, for the advanced KPI variant: <ul style="list-style-type: none"> - Departure gate ID - Take-off runway ID 	Airports (airport operations, A-CDM), airlines (OOOI data), ADS-B data providers and/or ANSPs
KPI03	ATFM slot adherence	Percentage of flights taking off within their assigned ATFM slot (Calculated Take-Off Time Compliance).	% of flights subject to flow restrictions	The KPI is typically computed for individual airports, or clusters of airports (selection/grouping based on size and/or geography).	For each departing IFR flight subject to an ATFM regulation: <ul style="list-style-type: none"> - Calculated Take-Off Time (CTOT) - Actual take-off time (ATOT) 	Airports, ATFM service
KPI04	Filed flight plan en-route extension	Flight planned en-route distance compared to a reference ideal trajectory distance.	% excess distance	The KPI can be computed for any volume of en-route airspace; this implies that it can be computed at State level (covering the FIRs of a State).	For each flight plan: <ul style="list-style-type: none"> - Departure airport (Point A) - Destination airport (Point B) - Entry point in the 'Reference area' (Point O) - Exit point from the 'Reference area' (Point D) - Entry points in the 'Measured areas' (Points N) - Exit points from the 'Measured areas' (Points X) - Planned distance for each NX portion of the flight 	ANSPs

#	Title	Definition	Measurement Units	Objects Characterized	Data Requirement	Data Feed Providers
KPI05	Actual en-route extension	Actual en-route distance flown compared to a reference ideal distance.	% excess distance	The KPI can be computed for a traffic flow or a volume of en-route airspace; this implies that it can be computed at State level (covering the FIRs of a State).	For each actual flight trajectory: <ul style="list-style-type: none"> - Departure airport (Point A) - Destination airport (Point B) - Entry point in the 'Reference Area' (Point O) - Exit point from the 'Reference Area' (Point D) - Entry points in the 'Measured Areas' (Points N) - Exit points from the 'Measured Areas' (Point X) - Distance flown for each NX portion of the actual flight trajectory, derived from surveillance data (radar, ADS-B...). 	ANSPs, ADS-B data providers
KPI06	En-route airspace capacity	The maximum volume of traffic an airspace volume will safely accept under normal conditions in a given time period.	Variant 1: Movements/hr Variant 2: Number of aircraft (occupancy count)	The KPI is typically used at the level of individual sectors (sector capacity) or en-route facilities (ACC capacity).	The various capacities are determined by the ANSP, and are dependent on traffic pattern, sector configuration, ATCO and system capability, etc.	ANSPs
KPI07	En-route ATFM delay	ATFM delay attributed to flow restrictions in a given en-route airspace volume	Minutes/flight	The KPI can be computed for any volume of en-route airspace which participates in the ATFM process.	For each IFR flight: - Estimated Take-off Time (ETOT) computed from the last filed flight plan - Calculated Take-off Time (CTOT) - ID of the flow restriction generating the ATFM delay - Airspace volume associated with the flow restriction - Delay code associated with the flow restriction	ATFM

#	Title	Definition	Measurement Units	Objects Characterized	Data Requirement	Data Feed Providers
KPI08	Additional time in terminal airspace	Actual terminal airspace transit time compared to an unimpeded time. Actual trajectories are generally longer in time and distance due to path stretching and/or holding patterns. In the example below the unimpeded trajectories are shown in red, and the actual trajectories in green and blue. See Figure 1: Terminal trajectories.	Minutes/flight	The KPI is typically computed for individual airports, or clusters of airports (selection/grouping based on size and/or geography).	For each arriving flight: <ul style="list-style-type: none"> - Terminal airspace entry time, computed from surveillance data (radar, ADS-B...) - Actual landing time (ALDT) - In addition, for the advanced KPI variants: <ul style="list-style-type: none"> - Terminal airspace entry segment, computed from surveillance data (radar, ADS-B...) - Landing runway ID 	Airlines (OOOI data), airports, ADS-B data providers and/or ANSPs
KPI09	Airport peak capacity	The highest number of operations an airport can accept in a one-hour time frame (also called declared capacity). Can be computed for arrivals, departures or arrivals + departures.	Number of departures / hour, Number of landings / hour, Number of (departures + landings) / hour	The KPI is computed for individual airports.	Scheduling parameters for slot controlled airports Airport Acceptance Rates (AAR), Airport Departure Rates (ADR)	Airports
KPI10	Airport peak throughput	The 95th percentile of the hourly number of operations recorded at an airport, in the “rolling” hours sorted from the least busy to the busiest hour. Can	Number of departures / hour, Number of landings / hour, Number of (departures + landings) /	The KPI is computed for individual airports.	For each flight: <ul style="list-style-type: none"> - Actual landing time (ALDT) - Actual take-off time (ATOT). 	Airports

#	Title	Definition	Measurement Units	Objects Characterized	Data Requirement	Data Feed Providers
		be computed for arrivals, departures or arrivals + departures.	hour			
KPI11	Airport throughput efficiency	Airport throughput (accommodated demand) compared to capacity or demand, whichever is lower. Can be computed for arrivals, departures or arrivals + departures.	Average Over/Under Delivery or % of accommodated operations.	The KPI is computed for individual airports.	For each arriving and/or departing flight: <ul style="list-style-type: none"> - Actual landing time (ALDT) and take-off time (ATOT) - Estimated landing time (ELDT) and take-off time (ETOT) (from flight plan) For each time interval: <ul style="list-style-type: none"> - Declared landing capacity of the airport - Declared departure capacity of the airport - Declared total capacity of the airport 	Airports
KPI12	Airport/Terminal ATFM delay	ATFM delay attributed to arrival flow restrictions at a given airport and/or associated terminal airspace volume.	Minutes/flight	The KPI is typically computed for individual airports, or clusters of airports (selection/grouping based on size and/or geography).	For each IFR flight: <ul style="list-style-type: none"> - Estimated Take-off Time (ETOT) computed from the last filed flight plan - Calculated Take-off Time (CTOT) - ID of the flow restriction generating the ATFM delay - Airport or terminal airspace volume associated with the flow restriction - Delay code associated with the flow restriction 	ATFM
KPI13	Taxi-in	Actual taxi-in time	Minutes/flight	The KPI is typically computed	For each arriving flight:	Airports (airport operations),

#	Title	Definition	Measurement Units	Objects Characterized	Data Requirement	Data Feed Providers
	additional time	compared to an unimpeded/reference taxi-in time		for individual airports, or clusters of airports (selection/grouping based on size and/or geography).	Actual landing time (ALDT) Actual in-block time (AIBT) In addition, for the advanced KPI variant: Landing runway ID Arrival gate ID	airlines (OOOI data), ADS-B data providers and/or ANSPs
KPI14	Arrival punctuality	Percentage of flights arriving at the gate on-time (compared to schedule)	% of scheduled flights	The KPI is typically computed for traffic flows, individual airports, or clusters of airports (selection/grouping based on size and/or geography).	For each arriving scheduled flight: – Scheduled time of arrival (STA) or Scheduled in-block time (SIBT) – Actual in-block time (AIBT)	Schedule database(s), airports, airlines and/or ANSPs
KPI15	Flight time variability	Distribution of the flight (phase) duration around the average value.	Minutes/flight	The KPI is typically computed for the scheduled traffic flows interconnecting a given cluster of airports (two or more; selection/grouping based on size and/or geography).	For each flight: – OOOI data: gate “out” (AOBT), wheels “off,” wheels “on,” and gate “in” (AIBT) actual times.	Airlines

#	Title	Definition	Measurement Units	Objects Characterized	Data Requirement	Data Feed Providers
KPI16	Additional fuel burn	Additional flight time/distance and vertical flight inefficiency converted to estimated additional fuel burn attributable to ATM	kg fuel/flight	This KPI is a conversion of the additional flight time/distance and vertical flight inefficiency KPIs to a corresponding (estimated) additional fuel consumption; hence it describes a performance characteristic of the same objects as the additional flight time/distance and vertical flight inefficiency KPIs: en-route airspace, terminal airspace and airports. Typically the KPI is published at the level of a State or (sub)region.	Indicator values to be converted to estimated additional fuel burn: <ul style="list-style-type: none"> - KPI02 Taxi-Out Additional Time (min/flight) - KPI13 Taxi-In Additional Time (min/flight) - KPI05 Actual en-Route Extension (%) & average en-route distance flown (km/flight) - KPI08 Additional time in terminal airspace (min/flight) - KPI17 Level-off during climb - KPI18 Level capping during cruise & average cruise (ToC-ToD) distance flown (km/flight) - KPI19 Level-off during descent 	Performance analysts
KPI17	Level-off during climb	Distance and time flown in level flight before Top of Climb.	NM/flight and minutes/flight	The KPI is typically computed for traffic flows, individual airports, or clusters of airports (selection/grouping based on size and/or geography).	<ul style="list-style-type: none"> - For each flight trajectory: - 4D data points (latitude, longitude, altitude and time) - Departure airport ARP coordinates - 	Trajectory data providers (reporting archived actual trajectories based on ADS-B and/or other surveillance data sources) and/or ANSPs.
KPI18	Level capping during cruise	Flight Level difference between maximum Flight Levels on a measured airport pair and maximum Flight Levels on similar unconstrained airport pairs.	Flight Levels/flight	The KPI is typically computed for traffic flows on individual airport pairs or groups of airport pairs (weighted average).	For each flight trajectory: <ul style="list-style-type: none"> - Maximum cruise Flight Level - Departure airport - Arrival airport 	For variant 1: ANSPs; For variant 2: Trajectory data providers (reporting archived actual trajectories based on ADS-B and/or other surveillance data sources) and/or ANSPs

#	Title	Definition	Measurement Units	Objects Characterized	Data Requirement	Data Feed Providers
KPI19	Lev Level-off during descent capping during cruise	Distance and time flown in level flight after Top of Descent.	NM/flight and minutes/flight	The KPI is typically computed for traffic flows, individual airports, or clusters of airports (selection/grouping based on size and/or geography).	For each flight trajectory: <ul style="list-style-type: none"> - 4D data points (latitude, longitude, altitude and time) - Arrival airport ARP coordinates 	Trajectory data providers (reporting archived actual trajectories based on ADS-B and/or other surveillance data sources) and/or ANSPs.

- END -