



## Introduction of Global Air Navigation Plan (GANP) tasks linked to light and flow - information for a collaborative environment (FF-ICE)

Fourth NAM/CAR Air Traffic Services Inter-facility Data Communication (AIDC) and North American Interface Control Document (NAM/IDC) Implementation Follow-up Meeting (AIDC/NAM/ICD/4)  
Online, from 9 to 11 March 2021, 9AM to 12PM, GTM -6



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1. The Global Air Navigation Plan
2. Flight & Flow for a Collaborative Environment (FF-ICE) .
3. NAM/CAR Level of ASBU Element implementation
4. AIDC Task Force action plan





# What is the GANP?

- ✈ The GANP is an important planning tool for setting global priorities to drive the evolution of the global air navigation system and ensure that the vision of an integrated, harmonized, globally interoperable and seamless system becomes a reality.



The screenshot shows the ICAO GANP Portal website. The main heading is "WELCOME TO THE GLOBAL AIR NAVIGATION PLAN PORTAL". Below it, there is a section titled "THE GLOBAL AIR NAVIGATION PLAN" and a diagram illustrating the "MULTILAYER STRUCTURE OF THE GANP". The diagram shows a hierarchy of layers: Global, Regional, and National, with various sub-regional and national plans listed below.

**GLOBAL STRATEGIC**  
Provides high-level strategic direction for decision makers to drive the evolution of the global air navigation system towards a common agreed vision.

**GLOBAL TECHNICAL**  
Supports technical managers in planning the implementation of basic navigation services and in developing improvement work in a cost-effective manner.

**REGIONAL**  
Addresses regional and sub-regional needs of users within the global objectives.

**NATIONAL**  
Development by States in coordination with relevant stakeholders, or an arrangement partner, in line with regional and global users.

**GANP STRATEGY**  
Includes a chapter on Performance Ambitions

**ASBUs & PF**  
**AN-SPA**  
**BBBs**  
**Performance Framework**

**ADG ANP**  
**APAC ANP**  
**EUR ANP**  
**IND ANP**  
**NAF ANP**  
**RAF ANP**  
**ORSEA ANP**

**NANP TEMPLATE**  
**CBA CHECKLIST**

<https://www4.icao.int/ganpportal/>

<https://www4.icao.int/ganpportal/Tutorial>



## ***Flight & Flow for a Collaborative Environment (FICE)***

- ✈ FICE-B0/1: Automated basic inter facility data exchange (AIDC).
- ✈ FICE-B2/1: Planning Service
- ✈ FICE-B2/2: Filing Service
- ✈ FICE-B2/3: Trial Service
- ✈ FICE-B2/4: Flight Data Request Service
- ✈ FICE-B2/5: Notification Service
- ✈ FICE-B2/6: Publication Service
- ✈ FICE-B2/7: Flight management service for higher airspace operations
- ✈ FICE-B2/8: Flight management service for low-altitude operations
- ✈ FICE-B2/9: Flight management support for inflight re-planning
- ✈ FICE-B3/1: Flight management services for enhanced trajectory operations
- ✈ FICE-B4/1: Integrated flight management system for end-to-end global flight planning
- ✈ FICE-B4/2: Real-Time Participation of operators in flight
  - ✈ <https://www4.icao.int/ganpportal/ASBU> (FICE)



## FICE-B0/1 Automated basic inter facility data exchange (AIDC)

- ✈ Main Purpose To improve the efficiency of coordination and transfer of control between ATS units.
- ✈ New Capabilities Replacement of voice communication between ATS units by automatic message exchange. Description This element represents a first automation step in the evolution of the coordination and transfer of control between neighboring ATS units to guarantee that all related and necessary flight information will be available to the other unit as per agreement.
- ✈ *Maturity Level Ready for implementation*



# FICE-B2/1 Planning Service

- ✈ Main Purpose To allow aircraft operator to obtain constraint feedback while informing the relevant service providers of their intentions.
- ✈ New Capabilities Ability to determine relevant constraints applicable to a flight and feed them back to the operator. In this way, service providers will benefit from the availability of preliminary flight plans for resource planning (e.g. ATFM). A service provider that supports Preliminary Flight Plans and provides feedback should also provide a “re-evaluation” capability, i.e. updates to the feedback that reflect changes to constraints after the initial feedback is provided.
- ✈ Description The FF-ICE Planning Service permits an operator to submit a Preliminary Flight plan prior to filing an ATS Flight plan (Filed Flight Plan) for evaluation by the service provider. The flight plan represents the intention of the operator and is used by the service provider for resource planning. Service providers indicate the acceptability of the flight plan to the operator, and provide feedback regarding constraints that will be applicable to the flight. It allows for a collaborative, iterative planning process to optimize the plan and reduce any surprises after a filed flight plan is submitted.
- ✈ ***Maturity Level Validation***



## FICE-B2/2 Filing Service

- ✈ Main Purpose: To enhance ATS flight plan processing including constraints evaluation and enhanced flight information sharing.
- ✈ New Capabilities: Ability to accept Filed Flight Plans provided by the aircraft operator in FIXM format and to take advantage of the more advanced content permitted in them, for example: Climb and descent performance data to allow more accurate and consistent calculation of 4D Trajectories by the service provider. Operator-calculated 4D-Trajectory to allow understanding by the service provider of the operator expectation.
- ✈ Description FF-ICE will permit submission of a filed flight plan using FIXM in lieu of the teletype-format FPL used today. FF-ICE also provides feedback to the operator regarding whether the flight plan was successfully processed, the flight plan status and where necessary any constraints with which the flight plan does not comply.
- ✈ *Maturity Level Validation*





## FICE-B2/3 Trial Service

- ✈ Main Purpose To provide the aircraft operator with the ability to obtain feedback on a possible change without impacting the flight plan currently being used by the service provider.
- ✈ New Capabilities Allows an aircraft operator to assess the impact of a potential change to a Filed or Preliminary Flight Plan before committing to the change.
- ✈ Description The aircraft operator submits a potential change to a Filed or Preliminary Flight Plan, then, the service provider analyses the proposed change and provides the flight plan acceptability and constraints expected to affect the flight. The service provider does not retain any information about trial requests. A trial request does not indicate intent and therefore is not used by the service provider. If the aircraft operator is satisfied with the solution they will submit a Flight Plan update.
- ✈ ***Maturity Level Validation***



# FICE-B2/4 Flight Data Request Service

- ✈ Main Purpose To make available a query and reply service allowing an operator or authorized stakeholders to query the service providers for information on one of its flights - allows an operator to verify the status of a flight previously submitted.
- ✈ New Capabilities To allow a service provider or operator to request a Filed or Preliminary Flight Plan, supplementary information (SAR data), or Flight status information. In addition, a service provider will be able to request an aircraft operator to resend a previously submitted flight plan.
- ✈ Description PANS-ATM Chapter 11 describes the use of the RQP and RQS messages for an ATS Unit to request a flight plan or specific information about a flight. This element will permit a service provider to make available a query and reply service allowing an operator to query information about its flights, for example a flight plan previously submitted, search and rescue data, or status of a flight.
- ✈ **Maturity Level Validation**



# FICE-B2/5 Notification Service

- ✈ Main Purpose To allow a service provider or operator to notify other parties of the departure or arrival of a flight.
- ✈ New Capabilities Allow the complete transition of the existing ATS messages to FIXM.
- ✈ Description The service provider or operator sends a message to other parties upon departure or arrival of a flight based on local agreement.
- ✈ **Maturity Level Validation**



# FICE-B2/6 Publication Service

- ✈ Main Purpose To ensure consistent flight information and data is available to all stakeholders. This information can be used to improve ATM decision-making processes.
- ✈ New Capabilities Allow the sharing of FF-ICE with the ATM community via FIXM.
- ✈ Description General publication of information about flights being handled by the ASP to authorized subscribers via a SWIM information service.
- ✈ **Maturity Level Validation**



# FICE-B2/7 Flight information management service for higher airspace operations

- ✈ Main Purpose Higher airspace operations will have a different multi-national flavor worldwide. The FF-ICE capabilities support a strategic collaborative flight planning environment.
- ✈ New Capabilities Trajectory operations based on the flight business/mission needs High level of accuracy in the strategic planning of flight business/mission intent Based on community flight planning rules, an operator will generate business trajectory and publically share via SWIM. Updates of the intended trajectory will be provided if intended trajectory deviates from the agreed trajectory.
- ✈ Description A joint multi-national capability to support operations at these altitudes provides for strategic separation based on shared intent. Vehicles at these altitudes exhibit the widest range of operational conditions. They share in common the ability to provide long-term precise intent which allows for flight planning that support strategic conflict management. This ability to share long term intent as well as the lower number of participants allows this operational capability to be a shared as opposed to a centralized command and control state or regional based function.

## ✈ Maturity Level Validation



## FICE-B2/8 Flight information management service for low altitude operations

- ✈ Main Purpose Operators at the lowest altitudes, outside of manned flight terminal operations, have unique shared operating environment to support beyond visual line of sight operations.
- ✈ New Capabilities Operators provide intent before operating UTM flight trajectory requirements and exchanges (Block 1) A community network of intent sharing is in place to improve safe operations
- ✈ Description The large number of operations occurring in what has been traditionally a visual flight regime extends well beyond the capability from a CNS, automation and controllers to manage as a traditional IFR environment. From a flight planning management perspective these operations require the operators to share intent before flying so that they strategically de-conflict, provides for the exchange models to support these operations, and a flight management system that complements this shared environment.

### ✈ **Maturity Level Validation**



## FICE-B2/9 Flight information management support for inflight re-planning

- ✈ Main Purpose To enable aircraft operators and service providers (ATFM functions) to coordinate the re-optimization of flights based upon changing circumstances. Trajectory changes are limited to those occurring beyond an operationally-appropriate horizon. Service providers (ATFM functions) provide full constraint evaluation on proposed changes.
- ✈ New Capabilities Collaborative planning via flight information exchange applications available between traffic management and airspace users. Synchronization process to align trajectories for shared planning. Information standards and protocols for sharing network operations objectives and information exchanges supporting collaborative in-flight re-planning. Information models allow for consistent, integrated flight, flow and constraint information. Operator constraints that the ATM service provider can consider when re-planning.
- ✈ Description Globally consistent processes and information exchanges are applied to support collaborative inflight re-planning between the AU and ASPs, integrating applicable RSEQ and NOPS planning processes. Information exchange models (e.g., MET, Aeronautical, Flow and Flight) support the application of consistent methods for evaluation of expected impacts on flows and individual flights as circumstances change. Automated applications employ these methods in support of in-flight re-planning. The flight is cleared to the new flight plan by ATC as appropriate.



# FICE-B3/1 Flight information management services for enhanced trajectory operations

- ✈ Main Purpose To provide automatic exchanges of up-to-date flight trajectories tailored to the individual flight operation in support of post-departure coordination and trajectory sharing.
- ✈ New Capabilities Mechanisms are in place to support exchange and synchronization of individual trajectory intent/projections (FDP/FMS/DST) for use across planning and tactical operations Enhancement of automated coordination between ATS facilities supporting seamless delivery of Agreed trajectory Support for flight-specific, dynamic constraint and separation application considering operator constraints, preferences and capabilities.
- ✈ Description Mechanisms are in place to support exchange of intent allowing for advanced applications which can synchronize and share a common trajectory intent agreed to facilitate TBO in execution. The use of synchronized trajectories by automation and for ATC Coordination support a wider range of operational techniques within and across ANSP boundaries. Constraints are applied only where and when necessary and tailored to flight-specific capabilities.
- ✈ **Maturity Level Concept**





# FICE-B4/1 Integrated flight information management system for end-to-end global flight planning

- ✈ Main Purpose
- ✈ New Capabilities
- ✈ Description
- ✈ **Maturity Level Concept**



## FICE-B4/2 Real-Time Participation of operators in flight information

- ✈ Main Purpose
- ✈ New Capabilities
- ✈ Description
- ✈ **Maturity Level Concept**



## NAM/CAR Level of ASBU Element implementation

- ✈ Around 70% of implementation of FICE-B0/1 Automated basic inter facility data exchange (AIDC).
- ✈ Only ICAO region with implementation of AIDC and NAM/ICD automation protocols.
- ✈ In Central American region using AIDC/PAC protocol not only for ACC coordination, also for APP-ACC coordination.
- ✈ Need to improve safety in the coordination between CAR and SAM regions using AIDC.
- ✈ Many connections between the CAR States postponed due to the COVID-19 pandemic.



# GANP- PERFORMANCE OBJECTIVE CATALOGUE

- ✈ Efficiency
- ✈ Capacity
- ✈ Predictability
- ✈ Safety
- ✈ Security
- ✈ Environment
- ✈ Cost effectiveness
- ✈ Interoperability
- ✈ Access and equity
- ✈ Participation by the ATM community
- ✈ Flexibility



# GANP-KPI: Key Performance Indicator

KPI01 Departure punctuality

KPI02 Taxi-out additional time

KPI03 ATFM slot adherence

KPI04 Filed flight plan en-route extension

KPI05 Actual en-route extension

KPI06 En-route airspace capacity

KPI07 En-route ATFM delay

KPI08 Additional time in terminal airspace

KPI09 Airport peak capacity

KPI10 Airport peak throughput

KPI11 Airport throughput efficiency

KPI12 Airport/Terminal ATFM delay

KPI13 Taxi-in additional time

KPI14 Arrival punctuality

KPI15 Flight time variability

KPI16 Additional fuel burn

KPI17 Level-off during climb

KPI18 Level capping during cruise

KPI19 Level-off during descent



# AIDC Task Force Activities

- ✈ Update Regional AIDC Implementation action plan Update AIDC States implementation Status
  - ✈ Identify new actions supporting by MCAAP project (as AIDC Mission, AIDC workshop, others).
  
- ✈ Update action plan according with ICAO GANP new version.  
<https://www4.icao.int/ganpportal/>
  - ✈ Development a regional evaluation of ASBU FICE Elements.
  - ✈ Update AIDC Action Plan for ANI/WG and GREPECAS.
  - ✈ Analyses KPI that apply in coordination with ANI/WG Task Forces.



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THANK YOU