FCM06.1 — Automated Support for Traffic Complexity Assessment and Flight Planning interfaces

Download Progress Report

The Traffic Complexity tool continuously monitors and evaluates current and expected traffic loads and estimates the impact of traffic complexity on controllers' workload.

The predicted complexity enables ATFCM to take timely action to adjust capacity or request the traffic profile changes in coordination with Network Manager, ATC and airspace users.

The rigid application of ATFCM regulations based on standard demand thresholds as the pre-dominant tactical capacity measure needs to be replaced by a dynamic working relationship between ANSPs and Network Manager, which evolves towards monitoring of the real controller's workload, the resulting sector capacity and their dynamic management.

As the Trajectory predictability is crucial for complexity management, this objective also addresses the FF-ICE Release 1 implementation and message exchange between NM systems and operational Stakeholders in respect of collaborative flight planning, improving flight plan distribution and enhanced tactical flow management.

This encompasses the exchanges of following messages between NM systems, ATC systems and AU systems such as:

• ATC Flight Plan Proposal (AFP);
• ATC Flight Plan Change message (ACH);
• ATC Flight Plan message (APL);
• eFPL based on FF-ICE.

ANSPs shall provide the automatic AFPs in cases of tactical trajectory changes and process the APL/ACH data from IFPS. The NM system needs to integrate the automatic AFPs from ATC systems. The eFPL will include the 4D trajectory of the flight, as well as flight performance data, in addition to ICAO 2012 FPL data. The first phase should address only the exchange of eFPL between AUs and NM.

The eFPLs distribution will be exploited when ANSP's transition to FF-ICE provisions is achieved, transition that is not considered as mandatory within this objective.

System requirements:

Concerning the traffic complexity tools, it is suggested that ANSPs develop the concept for the complexity tools utilisation before considering the procurement/upgrades of ATM systems with this functionality.

ANSPs have two options:

• Use NM tools and systems
• Develop and install a local traffic complexity tool and connect with NM via the NM B2B Services;

The system requirements below are related to the second option of local traffic complexity tool:

• The Traffic Complexity tool continuously monitors and evaluates current and expected traffic loads and estimates controller's workload.
• It provides a support in the determination of solutions in order to plan airspace, sectors and staff to handle the predicted traffic. It is suggested that ANSPs develop concept for the complexity tools utilisation before considering the procurement/upgrades of ATM systems with this functionality;
• The local complexity tools need to receive process and integrate the EFD (or the NM B2B Services flight updates) provided by NM. This is required in order to supplement the local traffic counts with the flight plan data from ETFMS;
• Additionally, the use of the NM B2B Services for the reception/processing of NM traffic counts and for the provision of traffic monitoring values to NM might also need to be envisaged.

The NM systems adaptation activities:

• Deal with improving the quality of the planned trajectory (processing of tactical ATC information, processing of eFPL, support to mixed mode operations, implementation of traffic count methodologies that do not impact trajectory calculation) thus enhancing NM complexity assessment.
• Implementation of tools in support of traffic complexity will rely on the planned trajectory and allows simulating options optimising the use of available capacity. This will help NM operations identify possible mitigation strategies to be applied at network or local level, in coordination with FMPs and airspace users if applicable.

AFP, APL and ACH

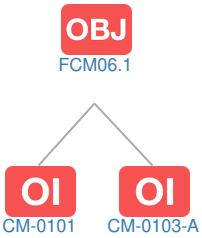
• ANSPs automatically provide AFP message to NM
• The local ATC system shall be capable to process APL and ACH messages sent by IFPS in order to exploit the full benefits of AFP distribution to NM.
• NM systems shall integrate the received AFP and provide APL/ACH messages.

NOTE FOR MILITARY AUTHORITIES: It is the responsibility of each military authority to review this Objective IN ITS ENTIRETY and address each of the SLoAs that the military authority considers RELEVANT for itself. This has to be done on top and above of the review of "MIL" SLoAs which identify actions EXCLUSIVE to military authorities.

Edition	2022
Stakeholders	Air Navigation Service Provider / Network Manager
Type	CP1
Scope	ECAC+
Status	Active

Context

Related Elements



Applicability Area(s) and Timescales

Applicability Area 1: All EU SES States
(All EU SES States)

Applicability Area 2: Albania, Armenia, Bosnia and Herzegovina, Georgia, Israel, Moldova, Montenegro, Morocco, North Macedonia, Serbia, Türkiye, Ukraine, United Kingdom

Timescales	From	By	Applicable to
Initial Operational Capability	01-01-2021	-	Applicability Area 1 + Applicability Area 2
Full Operational Capability / Target date	-	31-12-2022	Applicability Area 1 + Applicability Area 2

Links to ATM Master Plan Level 2

OI Operational Improvment Steps

Code	Title	IOC	FOC	Related Elements
CM-0101	Automated Support for Traffic Load (Density) Management	-	-	OI EN OBJ ICAO
CM-0103-A	Automated Support for Traffic Complexity Assessment	31-12-2020	01-10-2025	SOL OI EN OBJ DS PCP ICAO

SOL Links to SESAR Solutions

Code	Title	Program	Related Elements
No record found			

PCP Links to PCP ATM Sub-Functionalities

Code	Title	Related Elements
No record found		

ICAO ICAO Block Modules: No associated data

References

Applicable legislation
Regulation (EU) No 2019/123 laying down detailed rules for the implementation of air traffic management (ATM) network functions and repealing Regulation (EU) No 677/2011 Regulation (EU) 2021/116 on the establishment of the Common Project One
Applicable ICAO Annexes and other references
None
Deployment Programme 2022
Family 4.3.1 - Automated Support for Traffic Complexity Assessment and Flight Planning Interfaces
Operating Environments
-

Expected Performance Benefits

Safety	Enhanced safety.
Capacity	Increased ATC capacity.
Operational efficiency	-
Cost efficiency	Increased cost efficiency. Reduced fuel and emissions.
Environment	-
Security	-

Stakeholder Lines of Action

Code	Title	From	By	Related Enablers
ASP01	Automatically provide AFP for airborne flights	01-01-2021	31-12-2022	
ASP02	Processing of APL and ACH messages	01-01-2021	31-12-2022	
ASP03	Use NM systems for traffic complexity management	01-01-2021	31-12-2022	
ASP04	Implement Local Traffic Complexity tool	01-01-2021	31-12-2022	
ASP05	Process and Integrate EFD for Local Traffic Complexity Tool	01-01-2021	31-12-2022	
ASP06	Local Traffic Complexity procedures	01-01-2021	31-12-2022	
ASP07	Safety Assessment	01-01-2021	31-12-2022	
ASP08	Training	01-01-2021	31-12-2022	
ASP09	Operational use	01-01-2021	31-12-2022	
NM01	Implement Traffic Complexity supporting tools	01-01-2021	31-12-2022	
NM02	Provide flight update information	01-01-2021	31-12-2022	
NM03	Integration of Automatic AFP in NM systems	01-01-2021	31-12-2022	
NM04	Upgrade the NM systems related to FF-ICE Release 1	01-01-2021	31-12-2022	
NM05	Safety Assessment	01-01-2021	31-12-2022	
NM06	Training	01-01-2021	31-12-2022	
NM07	Operational use	01-01-2021	31-12-2022	

Supporting Material

Title	Related SLoAs
SDM - Standardisation and Regulation support to CP1 deployment 2021, Deliverable D1.1.1 07/2021 https://www.sesardeploymentmanager.eu/publications/deployment-programme	ASP01, ASP02, ASP03, ASP04, ASP05, ASP06, ASP07, ASP08, ASP09, NM01, NM02, NM03, NM04, NM05, NM06, NM07

Consultation & Approval

Working Arrangement in charge	-
Outline description approved in	-
Latest objective review at expert level	-
Commitment Decision Body	-
Objective approved/endorsed in	-
Latest change to objective approved/endorsed in	-