

# NM-27.0 Release notes

Edition: 6

Edition Validity Date: 01/03/2023







# **Important Notifications**

Reminder: The NM-27.0 Release Webinar will take place (remotely only) on the 16/03/2023 – please see Release Webinar.

The NM-27.0 Release Webinar event is detailed via the following EUROCONTROL Event page: <a href="https://www.eurocontrol.int/event/eurocontrols-nm-270-release-webinar">https://www.eurocontrol.int/event/eurocontrols-nm-270-release-webinar</a>.

It is expected that the external OPS manuals (AD OPS, ATFCM OPS and IFPS OPS), which are published in the "Network Operations Handbook", will be published between mid-March and end of March.

#### CR 051715 (see FB1203) - Increased maximum size of an EFD message

Currently, with NM-26.0, the maximum size of an EFD message is 40 KB (40960 bytes).

Some military flights may trigger EFDs which are longer than 40 KB (40960 bytes). When this happens, ETFMS drops these EFDs, which are therefore not shared with the EFD clients.

With NM-27.0, the maximum size of an EFD message will be increased to 65000 bytes, so that less EFD messages will be dropped.

Stakeholders making use of EFD messages are kindly asked to verify that their software consuming EFD messages can cope with EFD messages 65000 bytes long.

# **DOCUMENT CHARACTERISTICS**

Document Title	Document Subtitle (optional)	Edition Number	Edition Validity Date					
NM-27.0 RELEASE NOTES	Use pop-up to enter value.	6	01/03/2023					
	Abstra	ct						
This document describes th software release.	e new and modified fun	ctions delivered by NN	I as part of the NM-27.0					
This document is available a	ıt:							
https://www.eurocontrol.int/g	oublication/network-man	ager-release-notes-nm-2	<u>27</u>					
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Released Issue	×						

TLP STATUS					
Intended for	•	Detail			
Red		Highly sensitive, non-disclosable information			
Amber		Sensitive information with limited disclosure			
Green		Normal business information			
White	×	Public information			

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# **Edition History**

The following table records the complete history of the successive editions of the present document.

Edition No.	Edition Validity Date	Reason
0.1	13/07/2021	Initial edition of the NM-27.0 Pre-release Notes, for NETSYS
1.0	17/03/2022	Initial edition of the NM-27.0 Release Notes, after approval by Director NM (31/01/2022) of the NM-27.0 Release scope
2.0	20/09/2022	More details are provided regarding the migration from NM-26.1 to NM-27.0 – please see 4.2.  Please note a change in the usual migration pattern. Usually, there is a week between the ETFMS and the IFPS migrations. With NM-27.0, this one-week period will be reduced to 2 days.  The NM B2B Focus section has been filled – see 5.6. In particular, note the following developments, not covered by FBs:  Replacement of the PublishSubscribe Service Group Export of ATS units Support access to targetTimeOverFix in Flight Addition of the RestrictionGroup to the grouped Restrictions Link from the NM B2B documentation to external exchange models (AIXM, FIXM) Improvement of the matching in P/S Flight Plan originators Single B2B certificate for multi-function organisations Simple re-synchronisation of a client-side flight list  Re. NM B2B technologies, the upgrade of the technology in support to NM B2B Publish/Subscribe started with NM-26.0, as announced in past NM B2B Release Notes, and will be finalised with NM-27.0. A detailed reminder is provided to NM B2B client engineers in section 5.6.5.2.1.  Some more details provided about Airport/Network Integration FBs (see 5.7).  In FB1191 (ASM-AFUA Process Improvements – see 5.8.1): CR_048723 "Restriction group via AUP/UUP – Future evolutions" is de-scoped from NM-27.0 and will be implemented in the iNM context CR_050625 "ASM Scenarios – Cross-border activations and CDM" is de-scoped from NM-27.0 and will be implemented in the iNM context

	,
	<ul> <li>Please find more detailed changes in the ASM-AFUA CR organisation in the other sections of chapter 5.8.1</li> </ul>
	The FPFDE descriptions of FB1078 "iOAT Flight Plan Implementation – Phase I" and FB1192 "FF-ICE/R1 Services and Tuning" have been refined – see 5.11.1 and 5.11.2 respectively.
	More details provided re. CTM FB1158 "Predictability improvements (yoyo/turn)" and FB1186 "Flight Efficiency – Enhanced GRRT (improved algorithm)" – see 5.9.1.1 and 5.9.1.2 respectively.
	Some CTM FBs have been further detailed – note in particular the OPS TRIAL nature of Occupancy CASA – see 5.9.
	The Study Block SB074 (FRA FLOS) is cancelled, and should be replaced by CRs in relation with FRA Point Type fUsage and FLOS publication – this is still in discussion, more information will be provided when a decision has been formalised – see 5.12.2.
	Operational NM B2B Improvements are more detailed – see 5.15.2.
	Details added on the n-CONECT scope for NM-27.0, including the additional FB1238 "RAD Operational Improvements" – see 5.13.
	The FB1197 (Performance Work Programme), consisting in the provision of ETFMS Fuel data and route charges via NM B2B P/S is removed from this document, as the service is developed for NM internal use only.
	Provisional OPT and PREOPS dates have been added, and the migration schedule updated – see <u>Deployment</u> .
	First publication of the OPT (Operational Testing) Guide – see Operational Testing.
	Additional details provided in CR_048209 (Show TTOT values from Extended DPI on Flight List) of FB1194 "AOP/NOP Integration – Phase VII".
14/10/2022	New CRs have been created in the FB1193 "FRA Improvements", one for the publication of the FRA Point FLOS (Flight Level Orientation Scheme), and others in relation with the IFPS FRA Point Usage checking.
	More details are provided regarding the Occupancy CASA Prototype in FB996.
	See <u>important notification</u> regarding the maximum length of EFD messages at the beginning of this document, as well as in <u>FB1203</u> . Note also the addition of two new CRs as part of <u>FB1203</u> .
	14/10/2022

		CR_041147 of FB1202 concerning DBE points in NM B2B Publish/Subscribe Flight Data is cancelled, it will be properly implemented as part of iNM.  CR_052319 is added to FB1202, to start cherry-pick regulation ids with 'X' instead of "CP".  CR_050310 "C&T STAM RRP" is descoped from FB1198.  In the FPFDE programme, the study SB069 "FF-ICE/R1: Initial Consolidated Feedback (NM/ANSP collaboration)" is postponed to iNM.  The CR_050315 "NIA NM B2B macro-service" is removed from NM-27.0 – see FB1209.  CR_050110 "Implement regulations with different rates on flow subsets within a TV" from FB1205 is descoped.
4.0	24/11/2022	New publications of the OPT (Operational Testing) Guide – see Operational Testing.  CR_041147 in FB1202, about removing references to points from the Flight Data via ids absent from the NM B2B Airspace Structure, is replaced by CR_052415 aimed at exporting the "old DBE point id" with significant points via a new attribute "nmDescriptor".  In FB1191 (ASM-AFUA Process Improvements), as indicated in past communications, please note that the CR_050021 is replaced by CR_052011, 012 and 013.  CR_052013 regarding the activation by FMPs of AUP/RAD restrictions has been refined.  More details regarding Flight Data in FB1078 (iOAT).  The description of FB1192 (FF-ICE/R1 Services and Tuning) has been refined.
		Clarifications on <u>FB1172</u> – NMP Flow Phase 2.  The two existing CRs in <u>FB1205</u> (ATFCM Domain improvements) have been updated, and a third one has been added: CR_052326 – Activation of the PFD loading on ETFMS.  Standalone CRs indicated in the <u>NM B2B Focus</u> section have been grouped as Standalone CRs at the end of the document, with their traditional tabular description – see <u>Standalone CRs</u> .
5.0	02/02/2023	OPT dates have changed: OPT will take place from 15/02/2023 to 30/03/2023 – please see Operational Testing. Note that the next

version of the OPT Instructions will be published around the 08/02/2023.

The NM-27.0 Release Webinar will take place (remotely only) on the 16/03/2023 – please see Release Webinar.

More details provided in CR\_049109 – A-CDM alerts reception – see <u>FB1125 – A-CDM alerts reception and dissemination</u>.

New CR\_052806 – Flights departing from a CDM/ANI airport shall no longer receive the REA status on reception of T-DPI-s only in FB1194.

NEW TACT Rerouting tools source (MIXER): significant increase in proposed route opportunities for AOs covering more flights (will be available in HMIs and NM B2B) – see FB1186.

The description of <u>FB1192</u> (FF-ICE/R1 Services and Tuning) has been improved.

The description of <u>FB1158</u> (Predictability improvements (yoyo/turn)) has been slightly refined.

The scope of <u>FB1199</u> (Best regulations/measures (part 2)) has been further clarified.

The scope of the FBs for ASM-AFUA project has been refined: see Airspace Management and Advanced FUA Strategic Project.

New development related to Artificial Intelligence in the n-CONECT context – NCO-25628 – Forecast of ATFM delay evolution (FADE) – see FB1208.

The description of <u>FB996</u> (Occupancy CASA Prototype) has been updated.

The scope of <u>FB1238</u> (RAD Operational Improvements) has been increased.

More information re. <u>FB1198</u> (Full STAM NM B2B (part 2)) have been provided.

In <u>FB1205</u> (ATFCM Domain improvements), CR\_050112 (Protect zero-rate regulations from any profile shift) has been descoped. A few clarifications have been brought re. other CRs. And a new CR was added in the scope: CR\_052508-Slot Extension for FMPs.

The scope of <u>FB1192</u> (FF-ICE/R1 Services and Tuning) has been refined.

A number of standalone CRs in relation to the Airspace domain have been introduced – please see <u>Standalone CRs</u>.

See also FATHOM loading on D-1.  Reminder: The NM-27.0 Release Webinar will take place (remotely only) on the 16/03/2023 – please see Release Webinar.  The 4th edition of the OPT Instructions have been published on 14/02/2023 – see Operational Testing.  The 2nd edition of the NM-27.0 B2B Documentation has been released on 17/02/2023 – see NM B2B Documentation.  The NM-27.0 CHMI installation details are provided – see Migration Details.  It is expected that the external OPS manuals (AD OPS, ATFCM OPS and IFPS OPS), which are published in the "Network Operations Handbook", will be published between mid-March and end of March – see Network Operations Handbook.  Additional information provided for FB1125 (A-CDM alerts reception and dissemination), FB1194 (AOP/NOP Integration – Phase VII), FB1186 (Flight Efficiency – Enhanced GRRT (improved algorithm)), FB1191 (ASM-AFUA Process Improvements), FB1198 (Full STAM NM B2B (part 2)), FB1078 (iOAT Flight Plan Implementation – Phase I).  The standalone CR_050620 "Support access to targetTimeOverFix in Flight" has been cancelled: will be implemented in iNM context.			
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## 1 Introduction

NM releases include many changes arising from different sources and coordinated via various fora. They allow the development and deployment of new functionalities, which implement the NM business plans.

The NM release notes are designed as a rolling document, moving progressively from prerelease notes (probable contents) to actual release notes, to provide NM service users with an early view of changes, being refined as the release software is developed. This rolling view is aimed at helping NM users to anticipate and assess the impact and opportunities on their operational procedures and/or systems.

With that purpose, this document describes all changes of the NM system delivered by NM as part of the **NM-27.0** software release, limited to those changes deemed to potentially affect operations of external NM service users.

#### NM deploys:

- One major release per year, called xx.0, e.g. 26.0, through which most functional developments of the year are delivered
- One or more minor releases, called xx.y (where y > 0), e.g. 26.1, 26.2, etc., in which
  corrections and tuning are provided, and possibly some functional improvements of the NM
  HMI in particular, the NM B2B interfaces should not be changed in a minor release

### For a major release:

- The first edition of the NM pre-release notes is published around 18 months before the corresponding major release deployment, and is published to NETSYS only
- The first edition of the NM release notes is published around 12 months before the corresponding major release deployment, and the last one around the deployment of the major release

The publication of the release notes for a minor release usually takes place a few months before deployment.

Users who wish to automatically receive by email the new editions of the NM Release Notes (and other communications related to the NM releases) are invited to register at:

http://www.eurocontrol.int/network-operations/self-registration-form

(Choose "Subscribe to receive e-mail notifications when the NM Release Notes are updated" in the field "Purpose of the request").

Questions or comments related to this document should be sent to: nm.releases@eurocontrol.int

Please note that, in case of service interruption/ degradation, the affected users must notify NM (phone call, email) upon identification of the degraded mode.

## 2 User's Guide of the NM Release Notes

## 2.1 Versioning

The NM Release Note versions are called "editions".

The NM Release Note editions are published independently of each other, with changes from the previous edition emphasised in **bold green**.

The editions are published with their edition number clearly indicated in their title and body.

## 2.2 Document Structure

Chapter 3, named Network Development Programmes, reminds the reader about the programmes currently under development, which may bring changes to the NM systems in every NM release.

The context being set, the document provides all available schedule information and notifications regarding the NM release deployment in chapter 4, and the release contents in chapter 5.

Useful references are provided in chapter 6, and abbreviations used across this document in chapter 7.

## 2.3 Focus on NM B2B

Given the high and rising importance of NM B2B for many NM stakeholders, specific sections dedicated to NM B2B are developed within section 5.6.

## 2.4 Description of Changes

The definition of a "Change" in this document is any feature that is changed or added as part of a release, and susceptible to impact the operations of the external NM service user.

Changes are described in a structured table, using the fields described below.

When the change is embodied as an FB (Functional Block), its description is often refined via CRs (Change Requests), for example because the impacted users or applications are not the same – in that case, the pattern below is used to describe CRs of the FB.

FB/CR: Number and name of the change						
Objective	Operational objectives of the change					
Description	Description of the main features of the change					
Users potentially impacted and/or interested	Specifies the categories of NM users potentially (directly) impacted by the change, and/or potentially interested in the change					
NM applications and services changed	Lists the NM applications and services that are changed by the change					
Impact category on external users	Specifies whether the change has a direct impact on external users, and if that is the case, the impact category					
Impact description	Description of the impact on the external users, according to the impact category provided above					

# **Network Manager**

## **NM-27.0 RELEASE NOTES**

Impact on NM Service Specifications	Specifies whether the change has an impact on the NM Service Specifications or not, or if an assessment is to be or being performed
Operational deployment plan	Specifies the way the change will be deployed
Users' testing	Specifies how external users will be able to test the change
Related documentation	List of links to the documents updated or to be updated following the deployment of the change, or simply in relation with the change

# 3 Network Development Programmes

This chapter provides a short description of the NM programmes that the NM developments are implementing.

The majority of these programmes are strategic developments, aiming to achieve the strategic objectives of the NSP (Network Strategy Plan), and are fully aligned with the ATM functionalities defined in the CP1 (Common Projects One) implementing regulation and the corresponding SESAR Deployment Programme.

## **Airport-Network Integration Strategic Project**

The project addresses the full integration of airports and its operations as a component of the ATM network. The project contributes directly to the NSP Strategic Objective 4 (SO4) "Optimise Network Operations" and 5 (SO5) "Develop European connectivity and airport services".

The project aims at minimising airport disruptions and delays, in particular during adverse conditions, and at setting up the collaborative processes and tools improving airport and TMA integration with ATM operations, thereby positively affecting the overall network, as well as local performance.

The project includes the following main areas:

- Improve flight plan/airport slot consistency
- Improve the airport related operational partnership, starting with the integration of AOPs into the Network Operations Plan (including Target Times)
- Implement the Advanced ATC Tower, Airport CDM and AOP/NOP integration concepts

## Airspace Management and Advanced FUA Strategic Project

The project addresses the coordinated airspace management improvements required to achieve the flight efficiency – and indirectly the capacity – RP3 and RP4 targets, both at network and local/FAB level. The project contributes directly to the NSP Strategic Objective 3 (SO3) "Optimise Network Design".

The project focuses on the implementation of improved ASM/ATFCM processes and on the Advanced Flexible Use of Airspace concept, combining operational procedures and technical systems support.

The project aims at:

- Introducing performance-driven operations based on the management of airspace configurations in fixed route network and FRA environments
- Providing processes that support the use of more dynamic and flexible elements
- Describing a seamless, CDM-based process with an advanced real time management of airspace configurations as well as a continuous sharing of information among all ATM partners

The project includes the following main areas:

- ASM solutions to improve network performance
- Dynamic Airspace Configuration and CDM process
- Rolling process ASM/ATFCM process
- ASM operations in FRA environments
- ASM performance monitoring

## **Cooperative Traffic Management Strategic Project (CTM)**

The project addresses the collaborative process of determining and implementing optimal solutions for network operations through continuous information sharing of individual and local preferences, by cooperation between actors in the planning and execution phases of ATM. The project contributes directly to the NSP Strategic Objective 4 (SO4) "Optimise Network Operations".

The project aims at optimising traffic delivery through a transparent cooperative approach involving all operational stakeholders in the ATM network: ATC, Airport, AU and NM operations. It is the interface between local and network operations and aims at improving tactical coordination processes, reducing the gap between planning and execution phases, and enabling the application of flight and flow-specific targeted ATFCM measures, including Target Time measures.

The project includes the following main areas:

- Flight Plan Predictability
- Short Term ATFCM Measures (STAM), including Scenario Management
- Target Times Operations
- Support to (extended) Arrival Sequencing
- Initial User Driven Prioritisation

# **European ATM Information Management System Strategic Project** (EAIMS)

The project addresses the provision of a reference source of aeronautical and airspace data for use in ATM systems and operations, including flight operations and airport operations. The project contributes directly to the NSP Strategic Objective 2 (SO2) "Deploy and integrate interoperable and secure information management systems".

The project aims at providing a shared ATM Network Information Reference that allows planning of all stakeholders to be based on the same data and assumptions, that is the reference for any measure with network impact, and that supports any network-wide activity.

The project includes the following main areas:

- Airspace model evolutions of CACD for compliance with EAD
- Semi-automatic download of EAD data into CACD and associated processes and procedures
- Semi-automatic download of other context information to CACD (such as BADA)
- Improvements of airspace data management CDM processes

## Flight Plan and Flight Data Evolution Strategic Project (FPFDE)

The project addresses the processes and systems required to elaborate and to share the 4D trajectory information for planning purposes, enabling improved quality ATM planning across the European ATM Network. The project contributes directly to the NSP Strategic Objective 5 – Facilitate business trajectories and cooperative traffic management (SO5).

The project aims at ensuring and coordinating a gradual implementation in a harmonised way of the ICAO Flight and Flow Information for a Collaborative Environment (FF-ICE), key enabler for the ICAO concept of Trajectory-Based Operations, while supporting all stakeholders in the transition.

The project includes the following main areas:

- FF-ICE/Release 1 Services, in support of pre-departure operations
- FF-ICE/Release 2 Services, in support of post-departure operations
- OAT flight plan integration
- VFR flight planning support
- Integration of ADS-C (EPP) data

## Free Route Airspace Strategic Project (FRA)

The project addresses the required NM system changes and undertakes airspace design, simulation and validation activities required for FRA implementation, as well as monitoring and reporting on implementation progress. The project contributes directly to the NSP Strategic Objective 3 (SO3) "Optimise Network Design".

The project aims to support the implementation of the FRA concept, as described in the European Route Network Improvement Plan (ERNIP) Part 1 across the NM area.

The project includes the following main areas:

- Network performance and implementation scenarios
- Operations Support (modelling, design, simulations, trials, etc.)
- ATM systems and architecture in support of FRA
- Concept, procedures and change

## NM OPS Service Platform Strategic Project (n-CONECT)

The project addresses the provision of a platform supporting improved NM service interfaces, being the main focus put on the convergence to a single, redesigned HMI for all users, fit for purpose and flexible enough to meet the needs of the different user roles (both internal to NMOC and external). The project contributes directly to the NSP Strategic Objective 2 (SO2) "Deploy and integrate interoperable and secure information management systems".

The project aims at setting up a new NM operational collaboration platform and related processes.

The project includes the following main areas:

- Platform development
- Service management
- Single HMI for internal and external users
- NM B2B Services migration and evolutions

## **Performance Strategic Project**

The NM and Performance IRs stress the need for Monitoring and Reporting (M&R) of performance. The aim of this programme is to provide the data and reporting (including data warehouse and NMIR) that address the M&R needs.

The programme includes a wide variety of activities such as: the adaptation of algorithms or databases, creation of new data sets, modification of interfaces graphical identity, and new reports following users' requests. The changes allow NM to fulfil its commitment on M&R, support other stakeholders with their M&R responsibilities and prepare NM for the next SES reference period.

## **Operations Improvements**

#### **Domain Improvements**

Each release delivers new functionalities and enhancements to current capabilities into operations in line with NM strategic programmes and stakeholder requirements. These cover flight, flow and airspace domains and are facilitated by advances in NM B2B and other data exchanges.

#### **TCF (Transponder Code Function)**

In accordance with the NM mandate for the TCF, CCAMS is operated on behalf of states as one of the possible technological solutions supporting the unambiguous and continuous identification of aircraft.

The final goal is to have the use of the downlinked aircraft identification (e.g. through Mode S) operational in the whole area with CCAMS as a back-up technology. Therefore CCAMS is implemented currently in 19 states and the number of users is expected to increase in the coming years.

## 4 Schedule

The following dates are tentative; they are meant to provide the user with an idea of the main events that take place all along the release development, up to deployment.

These dates are mostly stabilised around 4 months before migration, but can still slightly fluctuate, in which case notifications would be provided via a new edition of these NM Release Notes (see 4.1).

## 4.1 Important Notifications for Release Schedule

<None>

## 4.2 Deployment

Deployment Steps		2023										
	J	F	М	Α	М	J	J	Α	S	0	N	D
Release webinar			16									
Network Operations Handbook publication			30									
OPT Instruction Guide publication	(*)											
Start of PREOPS			21									
Start of OPT		15										
End of OPT			30									
Start of migration				25								
End of migration					2							

(\*) First edition of OPT Guide: 14/10/2022. Second edition of OPT Guide: 28/10/2022. Third edition of OPT Guide: 08/02/2023. Fourth edition of OPT Guide: 14/02/2023.

Please see Operational Testing

#### 4.2.1 Release Webinar

The release webinar is a presentation of the release together with a Q&A session answering user's questions, based on the NM Release Notes, which takes place around two months before migration. Presentations, questions and answers are then published.

The NM-27.0 Release Webinar will take place on 16<sup>th</sup> March 2023. If you wish to attend and have not been invited yet, please write us at nm.releases@eurocontrol.int.

The NM-27.0 Release Webinar event is detailed via the following EUROCONTROL Event page: <a href="https://www.eurocontrol.int/event/eurocontrols-nm-270-release-webinar">https://www.eurocontrol.int/event/eurocontrols-nm-270-release-webinar</a>.

## 4.2.2 Network Operations Handbook

The various documents forming the Network Operations Handbook will be made available around one month before the NM Release migration at:

- The NM Network Operations library: <a href="https://www.eurocontrol.int/library?f%5B0%5D=activity%3A774">https://www.eurocontrol.int/library?f%5B0%5D=activity%3A774</a>
- The NOP Portal ("Network Operations Handbook" portlet) is another way to access it:
  - Public NOP Portal
  - Protected NOP Portal

It is expected that the external OPS manuals (AD OPS, ATFCM OPS and IFPS OPS), which are published in the "Network Operations Handbook", will be published between mid-March and end of March.

## 4.2.3 Operational Testing

The Operational Testing (OPT) enables users to assess the potential impact of the release against their systems or procedures before the release migration.

The OPT period starts one to two months before the operational release migration.

Users are able to:

- Download and test the upgraded CHMI
- Test the upgraded NOP Portal
- Test some functionalities (operational scenario provided)

No registration is required.

Questions related to OPT must be sent to <a href="mm.opt@eurocontrol.int">mm.opt@eurocontrol.int</a>. Clients may also apply for OPT testing via this address.

The NM-27.0 OPT Instructions document is available at:

https://www.eurocontrol.int/publication/operational-testing-instructions

## 4.2.4 Migration Details

The migration of NM systems from NM-26.1 to NM-27.0 will start on the 25/04/2023 and last till 02/05/2023.

<u>Please note a change in the usual migration pattern. Usually, there is a week between the ETFMS and the IFPS migrations. With NM-27.0, this one-week period will be reduced to 2 days.</u>

In the schedule tables below, indicated times are all UTC. Question marks indicate that NM does not know yet the exact times in days, which will be provided in a future edition of these release notes.

Software / Service	Unavailable from	Unavailable till	Remark	Impact during migration					
CHMI software	CHMI software and documentation availability:  • For non NM-managed PC: 08/03/2023 – installation guide:  http://www.nm.eurocontrol.int/chmi_appsoft/NM_27.0/CHMI/chmi2700.msi  • For NM-managed PC: Software will be pushed on 18/04/2023								
ATFCM CHMI activation except AMC CIAM	25/04/2023 21:00	26/04/2023 00:00	Expected downtime 1h30 + No access to NM services via CH 1h30 provision in case of rollback						
AMC CIAM activation	02/05/2023 16:30	02/05/2023 20:00	-	No access to NM services for CHMI AMC positions (using CIAM)					
NOP Portal NM Portal (NMP)	27/04/2023 21:00	28/04/2023 00:00	Expected downtime 1h30 + 1h30 provision in case of rollback	No access to NOP Portal (Public and Protected)					
IFPUV	27/04/2023 22:00	28/04/2023 00:00	Expected downtime 1h00 + 1h00 provision in case of rollback	No Flight Plan validation service via any channel, including CHMI, NOP Portal and NM B2B					
SAFA / ACC3 Services	27/04/2023 22:00	28/04/2023 00:00	Expected downtime 1h00 + 1h00 provision in case of rollback	No access to SAFA and ACC3 services					
CSST	26/04/2023 07:00	26/04/2023 09:00	-	No access to CSST					

System	Unavailable from	Unavailable till	Remark	Impact during migration
ATFCM	ATFCM			
ETFMS, PREDICT	25/04/2023 21:00	26/04/2023 00:00	Expected downtime 1h30 + 1h30 provision in case of rollback	No Flow management services available via any channel, including CHMI, NOP Portal and NM B2B
DWH (Data warehouse)	26/04/2023 00:00	26/04/2023 06:00	-	No Query-Replay in CHMI, some NMIR reports unavailable
Flight Planning				
IFPS	27/04/2023 22:00	28/04/2023 00:00	Expected downtime 1h00 + 1h00 provision in case of rollback	No Flight Plan filing services via any channel, including CHMI, NOP Portal and NM B2B
Airspace and Capacity				
ENV/CACD	02/05/2023 16:30	02/05/2023 20:00	-	No access to ENV CHMI, CIAM, MAP
	No EUUP nor on-line updates will be done in CACD during CACD migration			

## NM B2B services

**Important note:** As the NM B2B services use the NM Backend systems, NM B2B services will be disrupted during the migration of these systems. For example, Flight Planning services will not be available during IFPS migration (cf. above).

Platform		Before PREOPS migration - 21/03/2023 06:00	After PREOPS migration - 21/03/2023 14:00	During migration to OPS From 25/04/2023 21:00 To 26/04/2023 00:00 Expected downtime 1h30 + 1h30 provision in case of rollback	After migration to OPS 26/04/2023 00:00
	NM-25.0	Available	Not available	Not available	Not available
PREOPS	NM-26.0	Available	Available	Not available	Available
	NM-27.0	Not available	Available	Not available	Available
	NM-25.0	Available	Available	Not available	Not available
OPS	NM-26.0	Available	Available	Not available	Available
	NM-27.0	Not available	Not available	Not available	Available

Regarding the NM B2B migration and other detailed information, please refer also to section 5.6, dedicated to NM B2B.

In the tables above, "Expected downtime x hours + y hours provision in case of rollback" means that the system or service should be unavailable maximum x hours in normal circumstances, and maximum (x + y) hours in case a rollback to the previous version would be required.

## 5 Contents

## 5.1 Important Notifications for Release Contents

<None>

## 5.2 Naming Conventions

Naming conventions have been introduced to make the document easier to read:

AIXM: Means AIXM 5.1.1

## 5.3 Supported Browsers and Operating Systems

For its web applications, NM recommends the following browsers:

- Mozilla Firefox
- Google Chrome

For these recommended browser brands, NM undertakes to investigate and attempt to resolve problems that can be reproduced on the latest stable version of that brand – for any other browser brand or version, issues will be analysed and resolution attempted on a best effort basis.

For all its client applications (web applications and CHMI), NM recommends the following operating system (OS): Microsoft Windows 10 64-bit.

For this recommended OS, NM undertakes to investigate and attempt to resolve problems – for any other OS or OS version, issues will be analysed and resolution attempted on a best effort basis.

## 5.4 NM Service Specifications

NMD has created specifications that define the following services provided by the Network Manager:

- Airspace data
- Flight planning
- Flow and capacity management
- Central Code Allocation Management (CCAMS)

These NM Service Specifications cover at a high-level the functionality, performance and interfaces with the environment as well as the definition of the degraded modes of the service delivery.

They support the agreements between the NM as service provider and other organisations and aviation undertakings as users of the services listed above.

The NM Service Specifications will be in due time available upon request to <a href="mailto:nm.sqs@eurocontrol.int">nm.sqs@eurocontrol.int</a>.

## 5.5 Declaration of Suitability for Use (DSU)

The DSU is a formal document published by the NM that provides evidence that a defined constituent meets the applicable baseline.

The NM system in operations is represented by two constituents:

- The NM Business Systems
- The NM Client Layer

The applicable baseline consists of:

- The regulatory baseline, which defines the mandatory requirements specified in relevant EC regulations
- The Means of Compliance (MoC) baseline, which consists of voluntary standards and specifications that the NM uses to ensure compliance with the regulatory baseline

The DSUs contain traceability to the requirements and referenced documents that were used for conformity assessment.

NM will create in due time the DSUs for the two constituents of the NM system in operations for all releases and will make them available upon request to <a href="mailto:nm.sqs@eurocontrol.int">nm.sqs@eurocontrol.int</a>.

## 5.6 NM B2B Focus

This section provides an overview of the NM B2B delivered functional contents, and of technical evolutions that NM considers most relevant for the stakeholders using or considering to use NM B2B.

#### 5.6.1 Contacts

Most NM B2B resources can be found from links in central NM B2B web page: <a href="https://www.eurocontrol.int/service/network-manager-business-business-b2b-web-services">https://www.eurocontrol.int/service/network-manager-business-business-b2b-web-services</a>, including the NM B2B access request form.

#### 5.6.2 NM B2B Documentation

NM B2B Documents	
NM B2B Technical Resources	Folder of various technical documents related to the NM B2B, most importantly the NM B2B Reference Manuals and Release Notes, for the currently supported NM B2B versions
NM B2B Write Access Criteria	Contains the criteria specified for each NM B2B WRITE Service to be fulfilled and followed during the operational validation, prior to enabling an NM B2B client to use that NM B2B WRITE service in NM operations

# <u>Draft</u> NM B2B Reference Manuals are published around 4 months before operational deployment.

Please note that the 2<sup>nd</sup> edition of the NM-27.0 B2B Documentation has been released on 17/02/2023.

## 5.6.3 External Testing and Validation of NM B2B – PREOPS

NM offers a pre-operational (PREOPS) platform that NM B2B users can use for testing purposes. The software to be released in the new NM release is deployed on the PREOPS platform around two months before its deployment in operations, so that users can start working on the new API prior to operational deployment. PREOPS services remain available after the operational release.

The PREOPS platform is not the operational platform. The quality of the PREOPS services may be lower than the quality of the operational services. In particular, availability is not guaranteed 24/7, as support is only available during office hours. Additionally, the quality of the data on the PREOPS platform depends on the specific service groups (please see the NM B2B Reference Manuals for further details).

#### 5.6.4 Main Functional Evolutions

Note the following important developments, not covered by FBs:

## CR 052207: Export of ATS units

The NM B2B API allows the B2B client to provide ANU identifiers in various requests, e.g. to provide the ANU identifiers of interest in a FlightDataCreateSubscriptionRequest. However, only AMC units are exposed by the NM-26.0 B2B Airspace Structure service. This CR consists in additionally exposing:

- The type, ANU id of the units of following types:
  - ÉMP, DPIO
  - ACC, APP, OAC, TWR and UAC
  - The AirTrafficManagementService provided by each FMP (service type and managed airspace) and DPIO (service type and managed airport)
  - The AirTrafficControlService provided by each ATC (ACC, APP, OAC, TWR and UAC) unit (service type, controlled airspace and/or airport)

#### CR 050620: Support access to targetTimeOverFix in Flight

The targetTimeOverFix field becomes a light field. In NM-27.0 B2B, it can be demanded via FlightListBy...

Note that, after NM-27.0 release deployment, the feature will be supported in both NM-26.0 and NM-27.0 B2B versions.

- <u>CR 050607: Export of the airport/heliport group mentioned in restrictions</u>
   In some RAD and Flight Restrictions, the instruction indicates information about groups, like PARIS GROUP, or WESSEX GROUP.
  - RAD restrictions are published on the Network Operations Portal <a href="https://www.nm.eurocontrol.int/RAD/index.html">https://www.nm.eurocontrol.int/RAD/index.html</a>.

     Annex 1: Area definitions contains the definitions of areas. These areas correspond to the AirportHeliportSet features.
  - o The NM B2B Airspace Structure Service exports the feature AirportHeliportSet With NM-27.0, the airport/heliport group name will be exported via the name attribute of the exported AirportHeliportSet features in order to enable the correlation between the restriction airport/heliport group and the corresponding AirportHeliportSet feature.
- <u>CR\_051520</u>: Link from the NM B2B documentation to standard exchange models (AIXM. FIXM)

This development will improve the navigability from the NM-27.0 B2B documentation data types to the standard exchange model (AIXM, FIXM) data types.

- <u>CR 051614: Improvement of the matching in P/S Flight Plan originators</u>
   Until the NM-26.0 B2B, the P/S Flight Plan subscription matches only against the last entered flight plan originator. As a consequence, when for example a CFSP creates a P/S subscription for all flight plans originated by itself, the CFSP does not receive any notification when the flight plan is updated by another organisation (e.g. an ARO or the aircraft operator itself). This development will ensure that a P/S Flight Plan subscription matches against any originator in the flight plan originator list.</u>
- <u>CR\_051017: Single B2B certificate for multi-function organisations</u>
   This CR consists in enabling the provision by the NM B2B client of an explicit end user, identified by its ANU id (see also CR\_052207 above). The NM B2B will verify for each such request the existence of an authorisation association between the certificate ANU id and the possible end user ANU ids (maintained in CACD).
- <u>CR\_051719</u>: Simple re-synchronisation of a client-side flight list
   NM B2B Users use the PSFDs to maintain a client-side flight list up-to-date.
   In case of de-synchronization (due to loss of messages, a crash on the client or simply a maintenance), the NM-26.0 B2B client has no simple way to re-initialise the flight list associated with the subscription. NM B2B users have been asking for a simple and effective way to re-initialise their client-side flight list.
   With NM-27.0, a service will be provided to obtain the most up-to-date info of each flight that matches the subscription.

## **5.6.4.1** Airport-Network Integration

The Airport-Network Integration project adds a new NM B2B service aimed at disseminating A-CDM alerts to A-CDM partners, via R/R and P/S – see FB1125.

#### 5.6.4.2 **ASM-AFUA**

Note the disbanding of the CDR2 in NM-27.0 B2B – see 5.8.1 (CR\_050020 – Single CDR Category).

Due to its complexity, the CR\_050021 (RAD management via AUP/UUP) has been split in smaller parts (CR\_052011, CR\_052012 and CR\_052013) – details are provided in 5.8.1. These CRs introduce significant changes in the NM B2B: a new category of restrictions (AUP/RAD Restriction) will be introduced, and the AUP/UUP used to activate these restrictions.

ASM Scenario usability and flexibility improvements will also be brought, a.o. via NM B2B – see see also 5.8.1.

#### 5.6.4.3 CTM

<u>FB1158</u> implements STA/YY enhancements requiring the adaptation of the NM B2B clients for users interested in the newly provided features in the TURN model.

FB1186 adapts the NM B2B to improve the GRRT function.

With <u>FB1198</u>, the NM B2B usability in support to STAM rerouting measures is improved. Also, ad-hoc STAM rerouting proposals will be enabled for FMPs - to be used initially in trial mode.

The CR\_050322 for FB996 (Occupancy CASA Prototype) provides the first NM B2B system interfaces for OPS trial.

#### 5.6.4.4 FPFDE

With the NM-26.0 release, the implementation of the FF-ICE/R1 Filing Service, Trial Service and Notification Service brought a better alignment of the NM implementation with the ICAO Specification for the FF-ICE/R1 and FIXM4.2 (with some functionalities requiring the support of FIXM4.3). The overall scope of the NM-27.0 FB1192, entirely devoted to NM B2B by nature, caters for items that could not be delivered during NM-26.0 and possible corrections identified during the ongoing validation activities with external partners.

#### 5.6.4.5 FRA

With <u>FB1193</u>, it will be possible to define an ATS Route in CACD as being available in one direction while being not-existing in the other direction. Client applications that receive and process NM B2B Airspace data may be impacted by the changes in the AIXM data. The IFPS validation outcome of flight plan messages may also change.

In addition, the FLOS (Flight Level Orientation Scheme) will be provided via NM B2B Airspace in relation with FRA Point Usage, plus some FRA point type checking executed at IFPS level.

#### 5.6.4.6 Operations Improvements

The <u>FB1202</u> will provide, as in each NM release, most beneficial NM B2B changes requested by NM B2B users:

- CR\_049908 Add IATA Flight number to NM B2B Flight Data when available
   Most relevant for the airports in their process to automate the matching of the aircraft to
   IATA flight number.
- CR\_052415 Export NM descriptor as part of NavAid and DesignatedPoint in NM B2B Airspace Structure – when available, the NM descriptor, also known as the "old DBE point id", will be exported with NavAid and DesignatedPoint features of the NM B2B Airspace Structure, so as to resolve referential integrity issues between Flight data and Airspace data.
- CR\_049216 Flight list on ALTN aerodromes for NM B2B clients

  Through the NM B2B Publish/Subscribe with the FLIGHT\_PLANS topic, the
  alternateAerodrome will be added in the FlightSetDefinitionElement. This
  change will allow the NM B2B clients to easily retrieve the information to which aerodrome
  the flight could be potentially diverted.

The <u>FB1203</u> will deliver, as in each NM release, most beneficial changes improving the NM internal processing of the external data received:

CR 050919 – New triggering event for the PSFDs when MPR is changed

A new PSFD message will be triggered by the change of the MPR (Most Penalising Regulation) or the list of regulations which affects a flight but with no effect on the CTOT.

CR\_051019 – The IOBT and EOBT in ETFMS output on NM B2B
 Through different information received, the NM system uses IOBT and EOBT fields. When IOBT and EOBT are available, both fields will be exposed in PSFDs.

 Note that this is already the case for FUM messages.

<u>FB1205</u> (ATFCM Domain Improvements) assigns a new complexity factor per Traffic Volume.

NMOC has procedures that require manual intervention in IFPS because the published conditions cannot be encoded in the restrictions model (e.g. RMK/NATO). To reduce the manual workload in IFPS, a new condition should be included in the restriction model for searching the remarks in a FPL (RMK/). Consequently, a new 'Flight Properties' condition shall be available in the restriction model for 'Remark (RMK/)' – see FB1206.

#### 5.6.5 Main Technical Evolutions

## 5.6.5.1 NM B2B Lifecycle

#### Essentially:

- There is exactly one major NM release per year, in which NM B2B services may be changed, added, or decommissioned.
- Minor NM releases should not impact NM B2B, apart from very exceptional circumstances, depending on the nature of the change, in which case exceptional communication would take place
- Details about the NM B2B lifecycle can be found in the NM B2B Reference Manuals

### 5.6.5.2 Decommissioning in NM-27.0

With the deployment of NM-27.0, the NM B2B version 25.0 will be decommissioned.

Hence, as part of the NM-27.0 release deployment, two NM B2B versions will co-exist during the lifetime of the NM-27.0 software release: NM B2B versions 26.0 and 27.0.

## 5.6.5.2.1 P/S Upgrade – Discontinuity – Testing Required in NM-27.0

The upgrade of the technology in support to NM B2B Publish/Subscribe started with NM-26.0, as announced in past NM B2B Release Notes, and will be finalised with NM-27.0. This section is a detailed reminder to the attention of the NM B2B client engineers.

As described in the NM-26.0 B2B Release Notes:

- Since its introduction in 2015, the NM B2B Pub/Sub paradigm has seen a continuous growth in adoption and has become a fundamental asset for the daily operations of many NM stakeholders.
- Given the importance of the Pub/Sub and having suffered some glitches in the past on the
  current technology on which the NM Message Brokers are based, NM has put in place a
  more robust Pub/Sub solution. This process leads to the replacement of the existing
  message brokers by new brokers based on another technology.
- The replacement of the message brokers is "transparent" to the client applications because:
  - No changes were introduced to the NM B2B Pub/Sub API, messages, or queue names
  - No changes were introduced to the client certificates or authorisation rules
  - No changes were introduced to the messaging protocol (which remains AMQP 1.0)
- However, without exhaustive testing of every client application, NM cannot exclude any potential impact (e.g. due to different library implementations). For this reason, to avoid any

such risk, NM has decided to keep the previous message brokers untouched in NM-26.0, so that the existing client applications can continue to run as before, and limit the use of the new brokers to the NM-26.0 subscriptions only.

Consequently, the new message brokers had to be exposed at a different URL, as explained in the <u>Service Locations / Message Service section of the Essentials Reference Manual</u>. The client application must download the new server certificate and save it in its trust store.

- In summary, the following Pub/Sub policy had to be defined:
  - Existing subscriptions (and associated queues) created on NM-25.0 will be kept unto uched and therefore remain available as before on the old message broker via the old URL
  - New subscriptions created using the NM-25.0 API will create queues on the old message broker and will be accessible via the old URL
  - New subscriptions created using the NM-26.0 API will create queues on the new brokers and will be accessible via the new URL (please also note the new port number for PENS clients)

The URL values provided in the NM-26.0 B2B Release Notes for connecting to the new B2B Broker and consuming the messages over AMQP 1.0 were as follows. There is no reason that these values would change in NM-27.0, however client engineers are invited to check the NM-27.0 B2B Release Notes around the end of 2022.

- for operational use in normal circumstances:
  - o amqps://pubsub.nm.eurocontrol.int:5671 (for queues over Internet)
  - o amqps://pubsub.nm.eurocontrol.int:15671 (for queues over PENS)
- for operational use in contingency situations (only if declared by NM)

  - amqps://pubsub.contingency.nm.eurocontrol.int:15671 (for queues over PENS)
- for pre-operational use (not available in contingency situations)
  - o amqps://pubsub.preops.nm.eurocontrol.int:5671 (for queues over Internet)
  - o amqps://pubsub.preops.nm.eurocontrol.int:15671 (for queues over PENS)

From the above, it boils down that the following URLs will not be supported anymore with NM-27.0:

- amqps://publish.nm.eurocontrol.int:5671 (was for operational use in normal circumstances)
- amqps://publish.contingency.nm.eurocontrol.int:5671 (was for operational use in contingency situations (only if declared by NM))
- amqps://publish.preops.nm.eurocontrol.int:5671 (was for pre-operational use (not available in contingency situations))

## 5.6.5.2.2 CR\_051510: Replacement of the PublishSubscribe Service Group

The P/S services of all business service groups (General Information, Airspace, Flight and Flow) were defined until the NM-26.0 B2B version in an artificial technical service group: PublishSubscribe. This split was conflicting with the business organisation of the NM B2B services. This CR consists in replacing the PublishSubscribe service group by the following elements:

- new Subscription Management port type in the 'Common' service groups that exposes the business agnostic Subscription Management: SubscriptionList, SubscriptionPause, SubscriptionResume, SubscriptionDeletion
- one XXXSubscriptionCreation, XXXSubscriptionUpdate, XXXSubscriptionRetrieval, XXXSubscriptionHistory pattern per XXX P/S topic in its corresponding service group / port type

After deployment of the NM-27.0 release, the PublishSubscribe service group will still exist, and unchanged, in the NM-26.0 B2B version.

### 5.6.5.3 NM B2B over (New)PENS

The operational use of the NM B2B over (New)PENS has been approved in September 2020 by EASA, and is available. More information can be found in slides 20 and 21 of the EUROCONTROL NM B2B Tech Forum October 2020 presentation: <a href="https://www.eurocontrol.int/event/eurocontrol-nm-b2b-technical-forum-limited-edition">https://www.eurocontrol.int/event/eurocontrol-nm-b2b-technical-forum-limited-edition</a>.

## 5.6.5.4 NM B2B on SWIM Registry

After being a pioneer in the implementation of SWIM, with SWIM services in operations since 2009, EUROCONTROL NM has completed in 2021 the formal processes of assessing the conformance of the NM B2B Services against the EUROCONTROL Specifications for SWIM. The operational NM B2B Services are since then available in the European SWIM Registry as SWIM Compliant Services, in compliance with the CP1 implementing regulation.

As stated on the EUROCONTROL web site, "Hundreds of organisations such as air navigation services providers or aircraft operators that daily use the business to business (B2B) services of the EUROCONTROL Network Manager (NM) are now automatically CP1/SWIM compliant in all information exchanges with NM, following NM's successful completion of the compliance assessment process of its B2B services." Read more at:

https://www.eurocontrol.int/news/early-compliance-eurocontrol-nm-b2b-services-cp1swim-offers-major-benefit-operational

Currently, the European SWIM Registry contains the OPS NM 25.0 and 26.0 B2B versions (both deployed as part of the NM-26.0 release migration). With the deployment of the NM-27.0 release, the European SWIM Registry will contain the NM B2B versions that the release supports in operations following the NM-27.0 release deployment, namely NM-26.0 and NM-27.0 B2B versions.

In general, new NM B2B versions will be uploaded/refreshed in the European SWIM Registry around the release migration time.

## 5.7 Airport-Network Integration Strategic Project

## 5.7.1 FB1125 – A-CDM alerts reception and dissemination

## Objective

The A-CDM alerts are available to A-CDM partners through the local A-CDM information sharing platform. Most of these alerts are intended for AOs and ground handlers to take action either locally or remotely. Airlines, through their IATA representation, have asked the Network Manager to centrally receive these alerts and to disseminate them so that airlines can access the A-CDM alerts for their flights from a single one-stop application. This development would bring a significant improvement to the current way of working, where airlines need to log in to individual local airport systems to check the alerts or they receive them via e-mail upon subscription.

An NM B2B service is required that allows A-CDM airports to share the pre-defined set of their A-CDM alerts with the NM. The alerts that are shared with the NM will then be displayed on the NMP application and be output via NM B2B.

#### CR 049109 - A-CDM alerts reception

A-CDM alerts are generated at individual A-CDM airports whenever inconsistencies are detected based on pre-defined parameters and thresholds.

The NM B2B interface will be enhanced to allow A-CDM airports to share their A-CDM alerts with NM. The NM B2B service is called ACDMAlertRequest. This development will ensure standardization as the alerts will all be provided according to a common format

Hereunder is a list of the A-CDM alerts concerned (this list may evolve in time; it is Not hardcoded in the scope of this change):

Description

Alert code	Description
CDM01	No Airport Slot Available, or Slot already correlated
CDM02	SOBT vs. EOBT discrepancy
CDM03	Aircraft Type discrepancy
CDM04	Aircraft Registration discrepancy
CDM05	First Destination discrepancy
CDM06	Non-Airborne Alert
CDM07	EIBT + MTTT discrepancy with EOBT
CDM07a	EIBT + MTTT discrepancy with TOBT
CDM08	EOBT Compliance Alert
CDM09	Boarding Not Started
CDM10	TOBT Rejected or Deleted
CDM11	Flight not Compliant with TOBT/TSAT
CDM11a	Flight not Compliant with EEZT
CDM12	TSAT not respected by ATC
CDM13	No ATC Flight Plan Available
CDM14	Automatic TOBT Generation not Possible
CDM15	TOBT within night flying restriction
CDM16	TSAT within night flying restriction
CDM17	TTOT possibly subject to night flying restriction
CDM18	SID congestion
CDM19	Not allocated yet
CDM20	Inbound diversion alert
CDM21	Provide new estimate landing time
CDM22	Prepare for diversion (indefinite holding)
CDM23-29	Not allocated yet
CDM30	Updated outdated In-Block Time

	CDM31	Solve gate conflict			
	CDM32	No stand assigned			
	CDM33	Remote Hold Notification			
	CDM34	Return to Stand Notification			
	CDM35-39	Not allocated yet			
	CDM40	Aircraft not ready for de-icing			
	CDM41	De-icing Confirmation needed			
	CDM42	De-icing not confirmed			
	CDM43	De-icing cancelled and TOBT deleted			
	CDM44-49	Not allocated yet			
	CDM50	Alternate Diversion Alert			
	CDM51	Aircraft Not Ready			
	CDM52-58	Not allocated yet			
	CDM59	Boarding Not Ready			
Users potentially impacted and/or interested	A-CDM and AN	A-CDM and ANI Airports			
NM applications	<ul> <li>NM B2B</li> </ul>				
and services	• NMP				
changed	• EFD				
Impact category on external users	Impact on users' systems				
Impact description	to do so. However, this CR does not impact existing NM B2B services.  Due to the above-mentioned new alerts, there are new triggers added into NM systems for EFD clients:  Update_ACDM_Alert: UAA  Update_Flight_Criticality: UFC				
Impact on NM Service Specifications	None				
Operational deployment plan	Deployed in operation along with the release migration				
Users' testing	Will be part of the release OPT (Operational Testing). Note that the EFD-related changes to the NM release cannot be tested on an OPT chain.  NM B2B will be available on the PREOPS platform.				
Related	NM B2B Reference Manual – FlightServices				
documentation	Flight Progress Messages Document				
documentation	A-CDM alerts sharing implementation guide (NEW document)				
	_	DM alerts dissemination			
Description	NM will display the A-CDM alerts received from airports in the NMP application. NMP users will be able to configure the display by selecting the alerts of interest.				
	The A-CDM alerts will also be available via NM B2B (R/R and P/S), in CDMInfo Flight field in the Flight.activeACDMAlerts attribute.				
Users potentially impacted and/or interested	AO or CFSP     A-CDM and ANI Airports				

NM applications and services changed	<ul><li>NM B2B</li><li>NMP</li></ul>		
Impact category on external users	<ul> <li>Impact on procedures</li> <li>Impact on Human-Machine Interfaces</li> <li>Impact on users' systems</li> </ul>		
Impact description	The CR will greatly simplify the AO procedures to receive A-CDM alerts.  AOs willing to receive A-CDM alerts via NM B2B will have to adapt their systems to do so. However, this CR does not impact existing NM B2B services.  In addition, A-CDM alerts will be displayed via the NMP application.		
Impact on NM Service Specifications	None		
Operational deployment plan	Deployed in operation along with the release migration		
Users' testing	Will be part of the release OPT (Operational Testing). NM B2B will be available on the PREOPS platform.		
Related documentation	NM 26.0 – NM B2B Reference Manual – FlightServices A-CDM alerts sharing implementation guide (NEW document) NMP application training material		

# 5.7.2 FB1194 – AOP/NOP Integration – Phase VII

	Improve DPI-related services, progressing with AOP/NOP integration. Improve the way the Target Take Off Time (TTOT) information is displayed on NM systems HMI.		
Objective			
Description	CR_048209 – Show TTOT values from Extended DPI on Flight List  Currently, the corresponding TTOT is not shown in the Flight list when provided in a Predicted-DPI. The CDM Status "p" ("PREDICTED") is not displayed either. The us informed that predicted departure planning information is available for a flight only be consulting the Flight details/data.  Airports can provide three two types of TTOT in a P-DPI (turnaroundTTOT and earliestTTOT and consolidatedTTOT). The change consists in displaying the higher ranking TTOT along with the CDM Status in the Flight list when a P-DPI is received. Note that consolidatedTTOT earliestTTOT has priority over turnaroundTTOT earliestTTOT, which has priority over turnaroundTTOT as it consolidates the AT view alongside the AO and ground handler view. This priority rule will apply to all types that transmit turnaroundTTOT and earliestTTOT.  The concerned HMIs are: NMP, CHMI, NOP Portal and ETFMS HMI.		
Users potentially impacted and/or interested	<ul> <li>AO or CFSP</li> <li>FMP</li> <li>Airports</li> <li>NMOC</li> </ul>		
NM applications and services changed	CHMI     NOP Portal     NMP		
Impact category on external users	Impact on Human-Machine Interfaces		
Impact description	The first A-CDM airports started providing P-DPI in 2022. The TTOT information from P-DPI will not be visible until this change is implemented in NM-27.0.		

Impact on NM Service Specifications	None		
Operational deployment plan	Deployed in operation along with the release migration		
Users' testing	Will be part of the release OPT (Operational Testing)		
Related documentation	NMP application training material CHMI ATFCM Reference Guide NOP Portal Users Manual		
Description	CR_052806 – Flights departing from a CDM/ANI airport shall no longer receive the REA status on reception of T-DPI-s only  Currently, REA status is assigned to a flight departing from a CDM/ANI airport upon reception of a T-DPI-s for that flight. This can be as early as 40 min prior to TOBT, at which point the flight is nowhere near ready.  As a result, many flights are in REA status without being ready to depart which causes multitude of issues to all stakeholders, especially in NMOC where the scope for improving flights from non-CDM airports that are genuinely REA is severely limited. This change will remedy this problem.		
Users potentially impacted and/or interested	<ul> <li>AO or CFSP</li> <li>FMP</li> <li>A-CDM and ANI Airports</li> <li>NMOC</li> </ul>		
NM applications and services changed	<ul><li>ETFMS</li><li>EFD clients</li><li>B2B-PSFD clients</li></ul>		
Impact category on external users	<ul> <li>Impact on Human-Machine Interfaces         The REA status will be reflected more accurately for flights departing from T-DPI-s transmitting airports. The REA status will be visible on the HMIs at or closer to the react event.     </li> <li>Impact on procedures         TWRs may need to adapt their procedures as a result of this change.     </li> </ul>		
Impact description	As a result of the change, a flight departing from a CDM/ANI airport shall receive the REA status:  When the clock reaches TOBT – Px 5 minutes and a T-DPI-s has been received for the flight.  Px shall be a system parameter that can be changed upon system restart and shall be set to 5 minutes initially. Compared to the case today, the flight shall receive the REA status earliest at TOBT – 5 minutes, even when a T-DPI-s had been received earlier than this time.  Note that a flight departing from a CDM/ANI airport may receive the REA status: when a REA message is received according to the usual conditions, as is the case today. This point is not a change and is only mentioned for completeness.  Due to this change the above mentioned new alerts, there are new triggers added into NM systems for EFD clients:  TO_Ready: TRE  The PSFD will be impacted as well, implementation details to be found in NM-27.0 B28 Release Notes.		

Impact on NM Service Specifications	None
Operational deployment plan	Deployed in operation along with the release migration
	Will be part of the release OPT (Operational Testing)
Users' testing	The EFD related changes to the NM release cannot be tested on an OPT chain.
	DPI Implementation Guide
	Flight Progress Messages Document
Dalatad	ATFCM Operations Manual
Related documentation	ATFCM Users Manual
	NMP application training material
	CHMI ATFCM Reference Guide
	NOP Portal Users Manual

# 5.8 Airspace Management and Advanced FUA Strategic Project

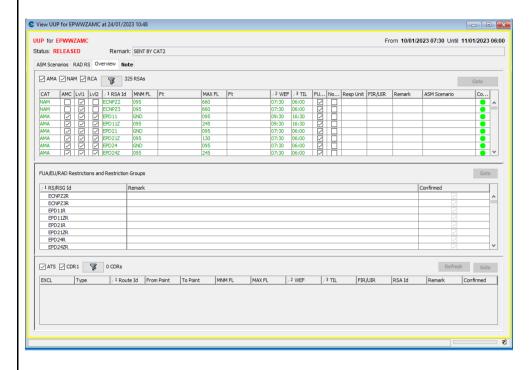
## 5.8.1 FB1191 – ASM-AFUA Process Improvements

Objective	Following the request from several Member States for more flexibility and new capabilities to better apply the AFUA process, the objective of this FB, as part of the ASM-AFUA programme, is to increase system flexibility for further optimisation of airspace usage.			
Description	CR_050020 – Single CDR Category  States are to implement the Single CDR Category (SCC), where only CDR1 will be used and CDR2 and CDR3 will be disbanded. NM systems and ASM Support Tools will			
	support the conversion and re-classification of all conditional routes into SCC of CDR1 category.			
Users potentially impacted and/or interested	<ul><li>Airspace Manager (AMC)</li><li>AO or CFSP</li></ul>			
NM applications and services changed	<ul><li>CIAM</li><li>NM B2B</li><li>NOP Portal</li></ul>			
Impact category on external users	<ul> <li>Impact on procedures</li> <li>Impact on Human-Machine Interface</li> <li>Impact on users' systems</li> </ul>			
Impact description	ASM tools need to be adapted to allow management of a Single CDR Category.  For AOs/CFSPs, the «CDR Type 2 Availability» list will disappear from the EAUP/EUUP. All the information will be retrievable from the «ATS Route and CDR Type 1 Closure» list (in the future «SCC» to replace « CDR Type1 »).  CDRs import to / export from NM Systems will be as follows:  CDR1 → CDR1  CDR2 → To be disbanded  CDR3 → ATC Discretion  (All other internal CDR types to remain as they are)  CON ditional Routes published as either CDR or CDR1 will be downloaded in NM Systems as CDR1 only.  CDR CASTAR  Reads both inputs as CDR1  CDR within NM Systems:  CDR within NM Systems:  CDR CDR1 → CDR1. No impact  CDR2 → To be disbanded (*)  CDR3 → To remain CDR3 internally only (exported at ATC Discretion)			



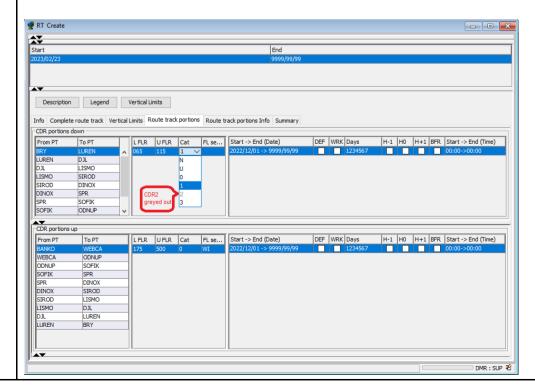
## CIAM:

In CIAM, CDR2 no longer in the possible CDR category (removed from the AUP screen).



## ENV:

In ENV, CDR2 no longer in the possible CDR category (greyed out).

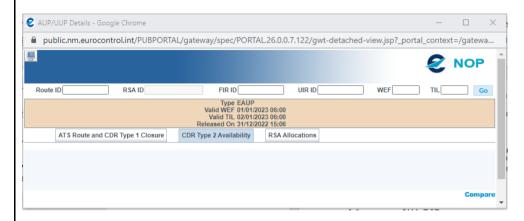


#### CDRs in B2B:

CDR2 category is to be disbanded and in principle ASM Local Tools shall not transmit CDR2 at all after NM-27.0 (they are already covered if their database downloads the data from ENV).

#### CDRs on NOP Portal:

In AUP/UUP details; CDR Type 2 Availability tab will disappear (see picture):



- In ATS Route (Upstream and Downstream displaying the availability details of the selected Air Route for the selected Target Date) in Category column; where result is "3: for non-plannable conditional route used only at short notice on ATC instructions." shall be renamed with "ATC Discretion: for non-plannable conditional route used only at short notice on ATC instructions."
- In Flights / Flight Details / Alternate Routes tab; where result for CDR is "3: for non-plannable conditional route used only at short notice on ATC instructions." shall be renamed with "ATC Discretion: for non-plannable conditional route used only at short notice on ATC instructions."
- (\*) CDR2s should be migrated to the new single CDR category (CDR1) by April 2023. We understand that some Member States may not be fully ready for NM-27.0, therefore the decision to allow any CDR2's in the NM system to remain was ultimately taken. However, it has been lately confirmed that all the States participating in the AUP/UUP process with NM have already successfully completed the transition.

Impact on («CDR2» to be removed):

NM AIRSPACE DATA SERVICE SPECIFICATION
 2.3.3 Consolidated European airspace use plan

Impact on NM Service Specifications This service component, delivered by the Central Airspace Data Function (CADF), includes preparation and release of a consolidated daily European Airspace Use Plan (EAUP) and European Updated Airspace Use Plans (EUUPs).

The EAUPs and EUUPs provide information about opening and closure of the conditional routes (CDRs) due to activation (unavailability) of airspace areas or zones reserved for the exclusive use of an airspace user (e.g., military aviation) or due to other unexpected events.

AIXM – DIGITAL NOTAM SERVICE SPECIFICATION

	EUROCONTROL Guidelines for Pre-digital NOTAM Templates
Operational deployment plan	Deployed in operation along with the release migration.
Users' testing	Will be part of the release OPT (Operational Testing).  NM B2B will be available on the PREOPS platform.
Related documentation	FUA – AMC/CADF Operations Manual CHMI ASM Function Reference Guide NM B2B Technical Resources NOP Portal User Manual
	CR_052011 - Adapt ENV Restriction model for dynamic activation
Description	NM systems shall support dynamic activation of Restrictions. NM systems shall support configuration of Restrictions that are available for dynamic activation via AUP/UUP.
Users potentially impacted and/or interested	<ul> <li>Airspace Manager (AMC)</li> <li>Flow Management Position (FMP)</li> <li>AO or CFSP</li> </ul>
NM applications and services changed	CIAM     NM B2B     NOP Portal
Impact category on external users	<ul> <li>Impact on procedures</li> <li>Impact on Human-Machine Interface</li> <li>Impact on users' systems</li> </ul>
	RAD Restrictions will be directly manageable through the AUP/UUP mechanism (no more need for fictitious Triggering Zones to activate the restrictions via the AUP).
Impact description	A new category of restrictions (AUP-RAD Restriction) will be introduced, to be differentiated from the existing FUA and FUA-RAD restrictions which are both directly linked to an RSA. A dependent applicability ONLY on time on Timetable - activation periods (MON-TUE-WED-THU-FRI) will be introduced so that the restrictions will be linkable to time.
Impact on NM Service Specifications	None
Operational deployment plan	Deployed in operation along with the release migration.
Users' testing	Will be part of the release OPT (Operational Testing).  NM B2B will be available on the PREOPS platform.
Related documentation	FUA – AMC/CADF Operations Manual CHMI ASM Function Reference Guide NM B2B Technical Resources NOP Portal User Manual
-	CR_052012 - Activation of single dynamic RAD Restrictions from AUP
Description	RAD Restrictions shall be directly manageable through the AUP/UUP mechanism (no more need for fictitious Triggering Zones to activate the restrictions via the AUP). NM systems shall support dynamic activation of RAD Restrictions for limited time periods.

Users potentially impacted and/or interested  NM applications and services changed	<ul> <li>Airspace Manager (AMC)</li> <li>Flow Management Position (FMP)</li> <li>AO or CFSP</li> <li>CIAM</li> <li>NM B2B</li> <li>NOP Portal</li> </ul>		
Impact category on external users	<ul><li>Impact on procedures</li><li>Impact on Human-Machine Interface</li><li>Impact on users' systems</li></ul>		
lmpact description	<ul> <li>CIAM:         <ul> <li>New tab "AUP RAD RS"</li> <li>2 frames:</li></ul></li></ul>		
Impact on NM Service Specifications	None		
Operational deployment plan	Deployed in operation along with the release migration		
Users' testing	Will be part of the release OPT (Operational Testing). NM B2B will be available on the PREOPS platform.		
Related documentation	FUA – AMC/CADF Operations Manual CHMI ASM Function Reference Guide NM B2B Technical Resources NOP Portal User Manual		
Description	CR_052013 – FMP access to AUP activation of dynamic RAD Restrictions  Based on national decision, NMOC will pre-define the responsible AMC or FMP for every AUP-RAD Restriction.  AMC is mandatory, FMP is optional:  • If FMP is defined, only the FMP can control the AUP-RAD Restriction activation		

	<ul> <li>if no FMP is defined, only the AMC can control the AUP-RAD Restriction activation.</li> <li>The data is entered by NMOC upon request of the States. Based on national decision, FMP shall be able to manage directly the AUP-RAD information until DRAFT (providing a proper coordination procedure in place at local level between FMP and AMC); AMC remains responsible for the consolidation of the AUP/UUP (READY).</li> <li>Simplified solution for FMP access to AUP activation of dynamic RAD Restrictions.</li> </ul>
Users potentially impacted and/or interested	<ul> <li>Airspace Manager (AMC)</li> <li>Flow Management Position (FMP)</li> <li>AO or CFSP</li> </ul>
NM applications and services changed	<ul><li>CIAM</li><li>NM B2B</li><li>ACA File</li></ul>
Impact category on external users	<ul> <li>Impact on procedures</li> <li>Impact on Human-Machine Interface</li> <li>Impact on users' systems</li> </ul>
Impact description	CIAM:  Grant FMPs access to the AUP for activation of AUP-RAD Restrictions:  FMPs have "read" access to the full AUP contents;  FMPs have "write" access to the activation of the AUP-RAD Restrictions under their responsibility (Until DRAFT)  AMCs stay in full control of the AUP consolidation (READY)  Yet, AMCs do NOT have "write" access to the activation of the AUP-RAD Restrictions that are under the responsibility of the FMP (Until DRAFT), if the FMP has been pre-defined as the responsible actor for those AUP-RAD Restrictions  Simplified solution for FMP access to AUP activation of dynamic RAD Restriction  Principles:

- Single responsible per AUP-RAD Restriction:
  - Only one single (logical) user can update the AUP-RAD Restriction activations: Either the AMC or the FMP and they are mutually exclusive.
  - There can be multiple FMP users per AUP/UUP, but only one FMP (one token) per AUP-RAD Restriction.

#### Access:

- All AMC and FMP users have read and write access to AUP-RAD Restriction activations.
- Only a single AMC or FMP has the rights to update a specific AUP-RAD Restriction activation.
- The user that has the update right is defined in the ENV Restriction data:
  - Every AUP-RAD Restriction has a responsible AMC (mandatory) and optionally a responsible FMP,
    - If an FMP is given → only the FMP can do the activations
    - If no FMP is given → only the AMC can do the activations

The definition of the "responsible AMC" is also used to link the AUP-RAD Restriction to the corresponding AUP/UUP.

- Multiple FMPs per AUP:
  - There can be multiple FMP users per AUP, but only one single FMP user for each individual AUP-RAD Restriction.
  - It is also possible that the AMC is responsible for part of the AUP-RAD Restriction.

#### Limitations:

- No system support for coordination between FMP and AMC:
   NM systems do not provide support for coordination between FMP and AMC:
   FMP AUP RAD access should therefore be locally supported by a manual coordination process between AMC and FMP(s).
  - FMP can update AUP-RAD Restriction activations when AUP is in INTENT or DRAFT status.
  - AMC does not know when FMP is working on the AUP-RAD Restriction activations.
  - AMC does not know when FMP is ready
     → requires manual coordination process (e.g. predefined timeslot for FMP updates, workable for AUP, burdensome for UUP).
  - No Multi-User Locking System of AUP-RAD Restriction activations
     AMC can promote AUP at any time to READY → when AUP is
    - READY, FMP cannot update the AUP-RAD Restriction anymore (possible manual workaround solution: AMC to demote AUP back to DRAFT, allowing FMP to update the AUP-RAD Restriction)
    - Potential loss of work of the FMP if no manual coordination is carried out.
       (Remark: manual coordination is more complicated for UUP)
- No system support for multiple physical users (no Multi-User Locking¹):

NM systems do not provide support for «multi-user access» to dynamic RAD Restrictions Activations: only a single user can update the AUP-RAD Restriction activations and it is either the AMC or the FMP and

they are mutually exclusive (there can be multiple FMP users per AUP/UUP, but only one FMP (one token) per each AUP-RAD Restriction).

- No Multi-User Locking System needed: the single user just updates the AUP-RAD Restriction activations.
- o No other user can update the AUP-RAD Restriction activations
  - If FMP is responsible → The AMC cannot update the AUP-RAD Restriction activations.
- There can be multiple physical users for a single FMP or AMC
   → Multiple physical users for the same FMP or AMC can
   accidentally overwrite the AUP-RAD Restriction data of each
   other
  - $\rightarrow$  Requires local manual coordination process Recommendation:
    - ✓ Avoid multiple physical users to work simultaneously at the same Flow Management Position (FMP).
    - ✓ If multiple physical users at the same Flow Management Position (FMP), always use the "Refresh" button before creating activations and coordinate between physical users.

#### NM B2B:

- Separate services allow FMPs to <u>dynamically manage RAD Restrictions</u> without touching the rest of the AUP
- All the aforementioned technological changes imply CACD/CIAM as well as local ASM system adaptations. To verify the need of modification for CFSPs/AOs systems for the changes related to the new type of restriction.
- Backward compatibility is ensured with the NM B2B version 26.0

#### ACA Format:

- It includes Restriction Activations in "ACA" file import/export
- Changes in the contents for the Airspace Use Plan (AUP) Template (New GOLF list – AUP/RAD Restrictions)

GOLF	AUP/RAD Restri	ctions	
Number	Designator	Validity Period	Responsible Unit / Remarks
Sequence number starting with [1] for the first item.	AUP/RAD Restriction ID published in the RAD Document and according to the ERNIP Part 1 coding rules.	Date/time groups indicating the start and the end of the period of unavailability.	FMP responsible with the AUP/RAD Restriction management.

<sup>&</sup>lt;sup>1</sup> Locking is performed in multi-user mode databases and prevents users from reading data being changed by other users and it prevents multiple users from changing the same data at the same time. The absence of a Multi-User Locking System is a system limitation.

	Changes in the contents for the Updated Airspace Use Plan (UUP)     Template (New GOLF list – AUP/RAD Restrictions)				
	•	<ul> <li>The AUP/RAD restrictions will appear in list GOLF in case of new</li> </ul>			
	•	relaxation; The AUP/RAD res	strictions will disap	pear from list <b>GOLF</b>	in case of
		cancellation.			
		GOLF	AUP/RAD Restr	rictions	
		Number	Designator	Validity Period	Responsible Unit / Remarks
		Sequence number starting with [1] for the first item.	AUP/RAD Restriction ID published in the RAD Document and according to the ERNIP Part 1 coding rules.	Date/time groups indicating the start and the end of the period of unavailability.	FMP responsible with the AUP/RAD Restriction management.
				•	
Impact on NM Service Specifications	None				
Operational deployment plan	Deployed in operation along with the release migration.				
Users' testing		of the release OP <sup>-</sup> I be available on th	• •	<b>-</b> /	
Related documentation	FUA – AMC/CADF Operations Manual CHMI ASM Function Reference Guide NM B2B Technical Resources NOP Portal User Manual				
	CR_050624	– ASM Scenario	usability and flex	kibility improveme	nts
Description	nevertheles attention to usage of th	s, findings during t the need of additio	he Italian Operational improvementsespect to both ASN	∕l Scenario Monitorir	
Users potentially impacted and/or interested	Airspac     AO or C	ce Manager (AMC) CFSP			
NM applications and services changed	<ul><li>CIAM</li><li>NM B2E</li></ul>	3			

Impact on procedures

Impact on users' systems

Impact on Human-Machine Interface

Impact category

on external

users

lmpact description	<ul> <li>Conflicting / Clashing Scenarios (scenarios that cannot be activated simultaneously) shall be monitored, both at National and X-Border level. Data will need to be defined, indicating which ASM Scenarios are conflicting ones.</li> <li>It shall be possible to delete one RSA from an existing ASM Scenario Activation (not possible in NM-26.0 implementation)</li> <li>The Scenario ID limitation for monitored ASM Scenario, cloned from managed ASM Scenario, shall be overcome: it shall be possible to have an ASM Scenario managed and monitored with the same Scenario ID</li> <li>P3 activation of one RSA, (being all the remaining areas of a managed scenario already allocated with AUP or previous UUP) with a UUP is currently not triggering the monitoring of the scenario (ONLY monitored scenario cloned from the managed scenario) because the overlapping conditions are not met. The warning in case of activation of a "managed and monitored" ASM Scenario in case of P3 activation of one area with a successive UUP will be implemented with the NM-27.0 release.</li> </ul>
Impact on NM Service Specifications	None
Operational deployment plan	Deployed in operation along with the release migration.
Users' testing	Will be part of the release OPT (Operational Testing). NM B2B will be available on the PREOPS platform.
Related documentation	FUA – AMC/CADF Operations Manual CHMI ASM Function Reference Guide NM B2B Technical Resources NOP Portal User Manual

# 5.9 Cooperative Traffic Management Strategic Project (CTM)

#### 5.9.1 CEs Having a Direct Impact on Operations of External NM Users

# 5.9.1.1 FB1158 – Predictability improvements (yoyo/turn)

Objective	Improve the flow predictability by improving STA/YY and intruder functions			
<b>Objective</b> Description	<ul> <li>CR_050215 – STA/YY enhancement</li> <li>This change will improve YY/TURN tool and related messages, based on the Users/YYDG feedback, in the following ways:         <ul> <li>YY profiles identification algorithm will be tuned to avoid reporting of redundant/duplicate YY profiles</li> <li>IFPS YY PROF error message will be improved to better describe rejected YY</li> <li>TURN OPLOG record will contain DCT distance from the ADEP/ADES and will present TURN value with 2 decimals</li> <li>TURN profiles flagging in front-end applications will be enhanced by introducing an additional category of TURNs. This new category of turns will be added to distinguish between non-critical turns that are considered "resolvable" (e.g. linked with flight-planning or airspace design requirements) or not.</li> <li>IFPS will REJ 180 deg turns identified within radius of 60NM around ADEP/ADES or below FL200 (not applicable to M,X flight type, helicopters, round-robin flights, turn at connecting point, turn not completely "visible"), unless</li> </ul> </li> </ul>			
Users potentially impacted and/or interested	<ul> <li>turn is intended and stated accordingly in ITEM18 with RMK/ PROFTURNINT.</li> <li>FMP</li> <li>Airspace User (Civil)</li> <li>AO or CFSP</li> <li>NMOC</li> </ul>			
NM applications and services changed	<ul> <li>FLOW system</li> <li>CHMI: CIFLO, CIAO</li> <li>NOP Portal</li> <li>NM B2B</li> <li>NMP Flight</li> </ul>			
Impact category on external users	<ul> <li>Impact on Human-Machine interfaces</li> <li>Impact on users' systems</li> </ul>			
Impact description	Users need to adapt their systems (NM B2B) and procedures to use the new features and accommodate additional category of Turn			
Impact on NM Service Specifications	None			
Operational deployment plan	Deployed in operation along with the release migration			
Users' testing	Will be part of the release OPT (Operational Testing).  NM B2B will be available on the PREOPS platform.			
Related documentation	Network Operations Library Yo-Yo and sharp-turn angle flight plans identification - Guidelines CHMI ATFCM Reference Guide NOP Portal User's Manual NM B2B Technical Resources			

# 5.9.1.2 FB1186 – Flight Efficiency – Enhanced GRRT (improved algorithm)

Objective	The main objectives of this FB are to improve the NM rerouting tools algorithm, to provide additional information to users to better assess available routes and allow the distribution of enhanced information about the opportunities for AOs after each run of the group rerouting tool (GRRT) by the NM system.  An additional main objective is to enhance NM B2B access to NM rerouting tools results.		
Description	<ul> <li>Changes in this FB will consist in:</li> <li>Enhancing rerouting algorithms (vertical, horizontal, time)</li> <li>Improving RRPs for the purposes of FEI (Flight Efficiency Initiative)</li> <li>Introducing user's response to OPP/RRP and integration within NMP Flight</li> <li>Local rerouting features and parameters</li> <li>Improving GRRT Template management and advanced traffic selection</li> <li>Structured OPLOG (part 2)</li> <li>NEW TACT Rerouting tools source (MIXER): significant increase in proposed route opportunities for AOs covering more flights (will be available in HMIs and NM B2B)</li> </ul>		
Users potentially impacted and/or interested	<ul> <li>Airspace User (Civil)</li> <li>AO or CFSP</li> <li>ANSP/FMP</li> <li>NMOC</li> </ul>		
NM applications and services changed	<ul> <li>FLOW system</li> <li>CHMI: CIFLO, CIAO</li> <li>NOP Portal</li> <li>NMP Flight</li> <li>NM B2B</li> </ul>		
Impact category on external users	<ul> <li>Impact on Human-Machine interfaces</li> <li>Impact on users' systems</li> <li>Impact on procedures</li> </ul>		
Impact description	Users need to adapt their systems (NM B2B) and procedures to use the new features. NM-26.0 B2B users will not be impacted.		
Impact on NM Service Specifications	None		
Operational deployment plan	Deployed in operation along with the release migration		
Users' testing	Will be part of the release OPT (Operational Testing).  NM B2B will be available on the PREOPS platform.		
Related documentation	Network Operations Library Network Operations Flight Efficiency User's Manual CHMI ATFCM Reference Guide NOP Portal User's Manual NM B2B Technical Resources		

# 5.9.1.3 FB1198 – Full STAM NM B2B (part 2)

Objective	As from NM-26.0 and to solve a local peak in demand during D without applying a regulation, FMPs are able to offer rerouting proposals to aircraft operators based on pre-defined and agreed scenarios. ANSPs are now asking for more flexibility and dynamicity to be able to offer such reroutings without relying on scenarios.
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Additionally, today there are many rerouting proposals being offered by different initiators, reasons and times for one flight or aircraft operator, which are now transparent to the Network. Aircraft operators are now asking the NM to harmonise, centralise and reconcile them, which goes in line with the future implementation of FF-ICE enabling trajectory negotiations between NM and AOs. In this case, STAM RRPs are seen as another input coming from FMPs that NM will be using used in such trajectory negotiations.

#### The objectives of this FB are:

- 1. Enable an efficient STAM RRP review process and impact results (for FMP and NM)
- 2. Enable generation of STAM RRPs in a more flexible way for FMPs via B2B and encourage FMPs to use alternative measures to regulations to solve targeted overloads when possible
- 3. Fix generation of impact results and MCDM data to provide accurate and correct data to FMPs and AOs
- 4. Increase understanding of STAM RRP objective and awareness of the problematic area for Aircraft Operators
- 1. Enhance system support for NMOC to be able to reconcile FMP and NM rerouting measures in order to provide added value to aircraft operators
- 2. Make STAM RRP operations more flexible for ANSPs in order to encourage them to use more proactive measures (instead of reactive)
- 3. Remove unnecessary workload in STAM RRP operations through automation and a more efficient process

CR\_050312 – Enable full process of ad hoc rerouting measures (on trial mode only)

Enable generation of rerouting measures on spot by an FMP via the NM B2B Web service called Rerouting Creation

- This service will now make optional the selection of a pre-defined scenario
- This service uses the NM rerouting functionality called GRRT (Group Rerouting Tool) from NM

Enable NM to approve/reject an FMP STAM rerouting measure on a flight-by-flight basis

• This provides a less conservative review process (before the approval was based on an all-or-nothing approach)

Each ACC will be able to submit 15 ad-hoc STAM rerouting proposal measures per day (with no limit in the number of flights per measure)

This limitation is subject to change in the future if needed.

<u>Debug generation of STAM rerouting measure impact results (for NM and FMP).</u>
<u>Knowing that STAM rerouting measure generates proposal flights in the system:</u>

- Before, the impact results of a STAM rerouting measure considered all proposals in the system (from other measures like MCP)
- Now, the impact results of a STAM rerouting measure considers only the proposals generated by that measure

Description

Enable creation of ad-hoc rerouting measures by an FMP via NM B2B (i.e. unlink ReroutingCreation NM B2B service from scenarios). It should be easy for an NM B2B user to create and submit to NMOC an ad-hoc rerouting measure request. I.e. all the complexity of the GRRT (manage of cost criteria and RAD constraints etc.), which is the tool in-house that is used to generate rerouting proposals via NM B2B by externals, shall not be pushed to the external user. For STAM RRPs, the user shall be able to just provide the time period where their problem appears, the constraints the rerouting shall satisfy and the targeted flights. For advanced users with their own route proposal catalogue, another option will be offered to provide the trajectory segment that changes in relation to the original route (so the NM B2B service can generate the full field 15 using the stitching functionality). NMOC staff will be able to approve a rerouting measure per flight (instead of measure as done in NM-26.0). FMPs will only be able to submit 5 ad-hoc STAM RRP measures per day (with no limit in terms of flights within the measure). This number is subject to change in the future if needed. FMP Users potentially **ANSP** impacted and/or AO or CFSP interested **NMOC** NM applications FLOW system CHMI. NOP and services NM B2B changed Impact category Impact on Human-Machine interfaces on external Impact on users' systems users This CR impacts FMPs that operate or are preparing to operate STAM RRP procedures **Impact** and have their own B2B tool certified and connected to the relevant NM B2B services. description This CR also impacts AOs who are willing to check STAM RRPs via NOP and CHMI. Impact on NM FM service specification (Cherry picking rerouting proposals - STAM RRP) Service Specifications Operational Deployed in operation along with the release migration deployment plan Will be part of the release OPT (Operational Testing). Users' testing NM B2B will be available on the PREOPS platform. STAM RRP - NM B2B deployment quidelines Related **EUROCONTROL - Network Operations Procedure Updates** documentation LZ (eurocontrol.int) CR\_050313 - Automation and harmonisation of STAM RRP measures Description Enable point to point impact information sharing via B2B containing only measure and flight impact on onloaded TVs.

•	This improvement	speeds	up the overall	MCDM process.
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 Depending on the impact of the measure, the STAM rerouting request will be sent directly to Aircraft Operator (if no impact) or to NM for approval (if impact beyond borders).

<u>Comments and relevant coordination information between FMP and NMOC and FMP and AOs are now visible and displayed for NM during the STAM RRP review process</u>.

New means will be provided for the FMP to specify FMP-FMP coordination outcomes or details (for NMOC awareness and overall traceability) and any other relevant comment addressed to NMOC staff via B2B

Basic point to point impact information will be enabled for FMPs via B2B to understand the impact received by STAM rerouting measures in their AoR and be able to decide whether to approve or not such measures.

Users potentially impacted and/or interested	FMP     ANSP     NMOC
NM applications and services changed	<ul><li>FLOW system</li><li>NM B2B</li></ul>
Impact category on external users	Impact on users' systems
Impact description	This CR is addressed to FMPs that operate or are preparing to operate STAM RRP procedures and have their own B2B tool certified and connected to the relevant NM B2B services.
Impact on NM Service Specifications	None
Operational deployment plan	Deployed in operation along with the release migration
Users' testing	Will be part of the release OPT (Operational Testing). NM B2B will be available on the PREOPS platform.
Related documentation	STAM RRP - NM B2B deployment guidelines  EUROCONTROL - Network Operations Procedure Updates  LZ (eurocontrol.int)

# CR\_050314 – Facilitate AO's role in the STAM RRP process • FPFD service will include the option to filter specifically for proposal flight information • Update of the comment field of a STAM RRP message: 'Purpose is STAM, to avoid a potential future regulation' • MCDMMeasureTopic P/S service will be debugged, reflecting the same data as in the R/R service

Originator of the Rerouting proposal available in NOP, CHMI and NMP Flight

There will be an update on the Flight Data P/S topic. The filter of this P/S service will include now the option to be notified upon any proposal flight existing in the NM systems. Amongst other reasons, proposal flights are created whenever there is a STAM rerouting proposal for a flight.

There will be a new B2B Publish/Subscribe service for rerouting measures (similar to the regulation P/S service) which will provide all the relevant information about the rerouting proposal measure existing in the NM systems.

The sentence 'purpose is STAM, to avoid a potential future regulation' in comment field of RRP message (AFTN and B2B) will be added.

The MCDMMeasureTopic P/S service will be corrected to reflect the same data as in R/R service.

The initiator of the rerouting proposal will be provided via NM B2B (FlightAtfcmReroutingLocation), NOP, CHMI and NMP Flight.

Users potentially impacted and/or interested	<ul><li>FMP</li><li>ANSP</li><li>AO or CFSP</li><li>NMOC</li></ul>	
NM applications and services changed	<ul> <li>FLOW system</li> <li>CHMI, NOP</li> <li>NMP Flight</li> <li>NM B2B</li> </ul>	
Impact category on external users	<ul> <li>Impact on Human-Machine interfaces</li> <li>Impact on users' systems</li> </ul>	
Impact description	Airspace users could be notified and could receive STAM RRPs and corresponding data via PS as well.  No potential NM B2B backward incompatibilities are envisaged. Receiving and managing STAM RRPs will be still possible via traditional means (AFTN, NOP, CHMI) and NMP Flight.	
Impact on NM Service Specifications	None	
Operational deployment plan	Deployed in operation along with the release migration	
Users' testing	Will be part of the release OPT (Operational Testing). NM B2B will be available on the PREOPS platform.	
Related documentation	STAM RRP - NM B2B deployment guidelines  EUROCONTROL - Network Operations Procedure Updates  LZ (eurocontrol.int)	

#### 5.9.1.4 FB996 – Occupancy CASA prototype

	In the course of NM-26.0 developments, a prototype for regulating in terms of Occupancy Counts (Occupancy CASA) was introduced in the ETFMS baseline for validating the concept and the benefits of this type of regulation in an operational environment.
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In order to proceed with live trials and a possible deployment in operations, the prototype has to be enhanced with further capabilities, already available for conventional entry regulations.

Please note that Occupancy CASA will be available for operational use in NM-27.0, but ONLY for trial purposes with TRIAL participants MUAC and ENAIRE.

#### CR\_050318 - Occupancy CASA - Slot manipulation

Occupancy CASA prototype should be enhanced for allowing the flight actions available for conventional CASA regulations, such as:

- Force CTO
- Slot extension
- Free slot (aka "unforce flight")
- Swap slots

The following operations shall not be available (not relevant/useful for an occupancy regulation):

- Block slot
- Book slot
- Unblock / unbook slot
- Assign slot
- New slot
- Create slot
- Delete slot

#### Description

All type of flight operations (i.e., exclude flight from regulation, re-include flight in regulation, manual exemption, and flight de-activation) are applicable as well for occupancy regulations and shall be tested as well.

The following operations are not available if the regulation type is Occupancy:

- · Assign a flight to another slot
- · Create SIP for flight

If the regulation type is Occupancy, a value of zero shall be assumed for the Window Width (i.e., a warning will be displayed if the new slot reference time is earlier than ETO of the flight).

An occupancy regulation has no normal / pending / equipment / supplementary rates. Instead, it is defined with a list of sub-periods, each one containing a sustained capacity, a peak capacity, and a pending capacity.

The pending capacity is not an integer, it is expressed in percentage of the sustained capacity.

Note: in this release, CASA will calculate delays based on sustained and pending capacities only. The peak capacity will be used only to update the OTMV values.

Users potentially
impacted and/or
interested

- FMP (in trial)
- NMOC

#### NM applications and services changed

ETFMS/EHMI

Impact category on external users	None
Impact description	None
Impact on NM Service Specifications	None
Operational deployment plan	Deployed in operation along with the release migration for TRIAL ONLY
Users' testing	Will be part of the release OPT (Operational Testing) (to be confirmed).  NM B2B will be available on the PREOPS platform.
Related documentation	Related Ols Occupancy CASA Validation plan
	CR_050319, CR_050320, CR_050321 – Occupancy CASA – NMOC tooling
Description	Slot List of an occupancy regulation shall be available.  A regulation of type Occupancy has no pre-defined slots, but an entry will be created in the Slot List for each non-suspended flight affected by the regulation and for each booking in the regulation (under some conditions), so that the same interface can be used.
	The regulation editor behaves the same way as for entry regulations, with some adaptations.  NMOC shall also provide support for occupancy regulations in the following screens of EHMI:  Regulation list (in ATFM Measures Display)  Load graph
Users potentially impacted and/or interested	• NMOC
NM applications and services changed	No external interface or service impacted
Impact category on external users	None
Impact description	None
Impact on NM Service Specifications	None
Operational deployment plan	Deployed in operation along with the release migration for TRIAL ONLY
Users' testing	Will be part of the release OPT (Operational Testing)
Related documentation	Related Ols

	CR_050322 - Occupancy CASA - System interfaces
Description	NM B2B shall support the creation, update or cancellation of occupancy regulations (directly or via a regulation creation / update proposal). Impacted systems are ETFMS, CUA and NOP (regulation editor shall support the new format, but occupancy regulations are read-only).
	B2C shall partially support the retrieval of occupancy regulations, i.e., the occupancy regulations shall appear in the regulation list and can be displayed in Regulation Description / Details, but without the new attributes. Display of the new sub-periods (with occupancy capacities) is not supported.
	Impacted systems are ETFMS, CHMI ATFCM and NOP.
	DWH shall support the archiving of occupancy regulations (and adapt NMIR and postops reports). Impacted systems are ETFMS and DWH (and CHMI Archive but this is common with CHMI ATFCM).
	As CHMI ATFCM and NOP will soon be deprecated, the full support for occupancy regulations will be implemented in NMP Flow.
Users potentially impacted and/or interested	FMP     NMOC
NM applications and services changed	• NM B2B
Impact category on external users	<ul><li>Impact on users' systems</li><li>Impact on operational procedures</li></ul>
	The NM-26.0 version of regulation services will remain unchanged.  Moving to NM-27.0 B2B will be necessary to retrieve Occupancy regulations.
	During the announced trials, if the Occupancy Regulation is the MPR, then the AO/FMP will not be able to see it.
Impact description	https://ost.eurocontrol.int/sites/B2BWS/Shared%20Documents/Forms/AllItems.aspx?RootFolder=%2Fsites%2FB2BWS%2FShared%20Documents%2F1%20%2D%20Technical%20Resources%2FNM%20B2B%20Version%2027%2E0%2F00%20LATEST%20EDITION&FolderCTID=0x01200037F732650B6D644FBE6D47DE27783292&View=%7B5D3794F1-3B70-4BA4-80CC-DAE12923DC10%7D
	https://ost.eurocontrol.int/sites/B2BWS/Shared%20Documents/Forms/AllItems.aspx?RootFolder=%2Fsites%2FB2BWS%2FShared%20Documents%2F7%20%2D%20Business%20Documentation&FolderCTID=0x01200037F732650B6D644FBE6D47DE27783292&View=%7B5D3794F1-3B70-4BA4-80CC-DAE12923DC10%7D
	Occupancy regulations will be visible in NOP and CHMI. B2C services shall partially support the retrieval of occupancy regulations, i.e., occupancy regulations shall appear in the regulation list and can be displayed in the Regulation Description/Details. In particular, the display of the new sub-periods (with occupancy capacities) is not supported.
	Occupancy regulations should appear in the NMP Flow application very much like in the CHMI.

	The first Occupancy regulations are expected to occur in the first two weeks of May 2023 during the OPS trial. The second phase of the OPS trial may take place in July 2023.  Particularly during the OPS trial, ENAIRE and MUAC will submit occupancy regulations by phone and if NM B2B is used, they will have to pass the operational acceptance validation activities.
Impact on NM Service Specifications	None
Operational deployment plan	Deployed in operation along with the release migration for TRIAL ONLY
Users' testing	Will be part of the release OPT (Operational Testing).  NM B2B will be available on the PREOPS platform.
Related documentation	NM B2B Technical Resources Related Ols Occupancy Validation trial plan

# 5.9.2 CEs Having an Indirect Impact on Operations of External NM Users, via NMOC

# 5.9.2.1 FB1199 – Best regulations/measures (part 2)

Objective	FB 1199 focuses on providing the Network Manager with an overview on the status of the Network via specific indicators. The aim is to anticipate necessary changes in NM staffing/ops room configuration, to quickly perform briefings and to provide NM management with key indicators, hence the KPIs provide benefit to the whole Network including indirect impact on external NM users.
Description	CR_048813 - KPIs for Measure Efficiency
	Network KPIs will be implemented into the ETFMS display to help NMOC to monitor, better support FMPs and anticipate disruption of the operation.
	Network metrics provided on a continuous timeline and integrating predict data:
	<ul> <li>The difference between number of planned sectors vs number of opened sectors</li> <li>Number of modifications per regulation</li> </ul>

- 5.10 European ATM Information Management System Strategic Project (EAIMS)
- 5.10.1 CEs Having a Direct Impact on Operations of External NM Users

None.

- 5.10.2 CEs Having an Indirect Impact on Operations of External NM Users, via NMOC
- 5.10.2.1 FB1195 RAD & Military Airspaces Download (continued)

Objective	To compare and download new or modified military airspaces directly from EAD/SDO into CACD, and RAD from users' RAD inputs
Description	The CASTAR application is used operationally. This change completes recently added data object types to the list of downloadable data and introduces a new feature to compare and upload RAD data with CACD.

#### 5.10.2.2 FB1232 – CASTAR Operational Usability Improvements

Objective	Various usability improvements, from NMOC feedback
Description	The CASTAR application is used operationally. This change enhances the operational usability of the tool, based on NMOC's feedback.

# 5.11 Flight Plan and Flight Data Evolution Strategic Project (FPFDE)

#### 5.11.1 FB1078 – iOAT Flight Plan Implementation – Phase I

	The objective of this FB is to initiate the implementation of improved Operational Air Traffic (iOAT) flight plan in NM systems.
Objective	iOAT flight plan operational scope is strictly limited to IFPZ and addresses only OAT flights conducted in controlled airspace under IFR.
	The overall implementation will be performed in a stepped manner, comprising several phases starting with the NM-27.0 release and later continuing within the
	iNM framework.
	This FB addresses the Phase I of the implementation and focuses on the flight
	planning aspects.  With this FB the NM systems will be able to receive, process and distribute iOAT flight
	plans.
	The initial area of application for iOAT flight plans will be an "iOAT Region" composed of three voluntary participating States, namely Belgium, France and Germany plus MUAC (including the Dutch Upper Airspace), and not the entire IFPZ. This initial implementation will contain:
	The use of iOAT flight plans only for OAT flights conducting their entire flight profile within the iOAT Region
	<ul> <li>An initial focus is placed on the round robin (or navigational) kind of iOAT flights, not containing any STAY (RSA, HOLDING or AERODROME) along the route in Item 15 as researched and developed in the previous SESAR activities</li> </ul>
	<ul> <li>On specific request of military authorities, there will be put in place several operational and technical solutions to accommodate also flights involving reserved/restricted airspace (RSA) using the STAY indicator in Item 15 as it is in operations today and the RMK/RSA ID mechanism (explained below)</li> </ul>
	<ul> <li>The use of STAY and STAYINFO indicator will be maintained for iOAT flight plans as it is described today in IFPS Users Manual</li> </ul>
	Semantic and syntax check
	<ul> <li>The use of "M" in Item 8 and "EUR/OAT" indicator in Item 18 at the same time to indicate iOAT flight plans</li> </ul>
Description	<ul> <li>In the output of IFPS, the EUR/OAT sub-field of Item 18 will be located between PBN/ and NAV/ sub-fields</li> </ul>
Description	Correct reception and processing
	It is mandatory that military aeronautical data to be inserted in CACD in the
	correct format (ICAO Annex 15) – temporary exemption: waypoints accepted in 5 alphanumeric codes (5ANC): ex. MRA01. In the future, the military authorities need to consider aligning the MIL waypoints with the ATC pronounceable 5 Letter Name Code (5LNC) as described in ICAO documentation
	The addressing will be done either to a unique AFTN address (like for
	France and Germany) or following the Volumetric Airspace Penetration (VAP) principle, to the assigned ATS unit for that particular airspace (like in Belgium); the re-addressing field in the FPL message will be also used
	Distribution based on the civil and military (both ATS and Air Defence units) operational stakeholders' part of the "iOAT Region" and declared ready for receiving and processing the iOAT flight plans
	<ul> <li>Transmission and reception of iOAT flight plans and the associated flight plan messages using legacy systems (AFTN). No B2B discussion has been initiated with the military authorities.</li> </ul>
	<ul> <li>The Pilot States decided to receive the iOAT flight plans in the ICAO flight plan format, not ADEXP</li> </ul>
	<ul> <li>The EFDs and P/S FD (Publish/Subscribe Flight Data) will reflect the better handling of the OAT portions, e.g. instead of having long DCT traversing some not visible elementary sector and resulting in possibly imprecise elementary</li> </ul>

- sector entries in the airspace profile, ETFMS will now produce better elementary sector entries where it could properly "expand/check" the real iOAT set of points
- NM will receive CPRs for the iOAT flights via ADS-B, but the iOAT portions will remain invisible
- All restrictions existing in CACD will be reviewed and updated, if necessary, from
  the perspective of their applicability to the iOAT flight plans. The default value
  set to all restrictions will be "non-applicable to iOAT" "Non-iOAT" (meaning
  non-applicable to iOAT flight plans), with the States having the possibility
  to make changes by setting the value to "iOAT only" or "All flights" via the
  MIL ENV Coordinator
- For the FUA and EU Restrictions, if they are set to the value "Non-iOAT", all the iOAT flight plans will accepted, no matter them being national or foreign (transit)
- For the FUA and EU Restrictions, if they are set to the value "All flights, all the flights plans, GAT and iOAT, will be rejected. For avoiding this, the iOAT flight plan originators can use in Item 18 the RMK/RSA ID mechanism, where the RSA ID is the CACD RSA ID as specified in RAD Annex 2C
- For iOAT flight plans IFPS will accept FLs ending in "5"
- Different speed profiles for iOAT Flight Plans: IFPS shall ignore errors related to speeds operated at different altitudes/Flight Levels for flights filing under iOAT conditions (existence of EUR/OAT in Item 18)
- For the specific system processing in Germany and MUAC, the German iOAT flight plan originators will use RMK/OAT. This information from RMK/will not be parsed and distributed by NM. NM will receive, process and distribute the pure iOAT flight plans and the mixed GAT/iOAT while maintaining the capabilities to receive, process and distribute the mixed GAT/OAT flight plans as they are in use today. Pure OAT flight plans will not be processed and distributed, as it is also the case in nowadays operations.
- Concerning the ATFCM aspects, the military authorities of the Pilot States
  expressed two clear requests: iOAT flight plans not to be subject to ATFM
  measures and iOAT flight plans not to be subject to CACD Restrictions
  unless indicated otherwise by the MIL ENV Coordinator. iOAT flight plans
  will not be included in the counts as they have the invisible status in
  ETFMS.
- The iOAT flight plans can be seen in ETFMS in the flight list only when using the functionality "Shor VFR/OAT", without any clear indication which flight is VFR and which one is OAT
- As requested by NDOP, detailed transition and expansion plans will be put in place for the further developments and implementations of iOAT flight plans in the short and medium term
- NM and CMC will draft in the near future "Guidelines for iOAT flight plan implementation by new States"
- The related documentation needs to be updated as well as the training packages for NM and the Pilot States

Users potentially impacted and/or interested	<ul><li>Airspace User (Military)</li><li>ANSP</li></ul>
NM applications and services changed	FPL (IFPS)     CACD
Impact category on external users	<ul> <li>Impact on users' systems</li> <li>Impact on users' procedures</li> </ul>
Impact description	Users of iOAT flight plan will need to adapt their systems and procedures to use the new features

Impact on NM Service Specifications	None
Operational deployment plan	Deployed in operation along with the release migration
Users' testing	Will be part of the release OPT (Operational Testing)
Related documentation	EUROCONTROL Guidelines for a harmonised and improved OAT FPL implementation iOAT flight plan implementation – Phase I Extended Release Notes  IFPS User's Manual

# 5.11.2 FB1192 – FF-ICE/R1 Services and Tuning

Objective	With the NM-26.0 release, the implementation of the FF-ICE/R1 Filing Service, Trial Service and Notification Service brought a better alignment of the NM implementation with the ICAO Specification for the FF-ICE/R1 and FIXM4.2. The overall scope of this FB caters for items that could not be delivered during NM-26.0 and possible corrections identified during the ongoing validation activities with external partners.  Some of the functionalities included in this FB will require the support of FIXM4.3.
Description	The following functionalities are included within the scope of this FB:  For an eFPL with the Filing Status NOT_ACCEPTABLE due to re-evaluation, NM will provide a valid route proposal (as Negotiating route/trajectory elements – not 4D points), if one can be found, and the corresponding errors  The Aircraft identification will be included in the FilingReply  SIDs / STARs will be removed from translated FPL Item 15 in NM output (based on existing individual ANSPs requirements)  NM will check that route element start points belong to route to next element  NM will provide the Operator Flight Plan Version in eFPL messages distributed  The received GUFI and Aircraft Identification, Departure Aerodrome and Destination Aerodrome information items of the message received will be cross-checked upon reception of an eFPL associated message (Update, Cancel or Notification). If GUFI and eFPL associated message information items do not match, an Error will be provided.  NM will accept eFPLs with remarks in lowercase  The Route text translated by NM from an eFPL route/trajectory group will be improved:  It will contain no DCT indication between successive significant points defined by geographical coordinates or by bearing and distance. The FPL route (Field 15) included in the translated FPL will also be updated accordingly.  For Westbound Oceanic flights, it will include a speed (as Mach number)/level indication at the corresponding Oceanic entry point. The FPL route (Field 15) included in the translated FPL already contains this indication.  NM will provide the "Error Comment" information together with Error or Warning messages included in NM feedback and corresponding updates for FF-ICE message may require special handling, for example when a specific flight needs a highlight following a coordination/agreement prior filing, between the message submitter and NMOC staff.

Users potentially impacted and/or interested	<ul><li>Airspace User (Civil)</li><li>AO or CFSP</li><li>ANSP</li></ul>
NM applications and services changed	<ul><li>FPL (IFPS)</li><li>NM B2B</li></ul>
Impact category on external users	Impact on users' systems
Impact description	Users of the FF-ICE services will have to adapt their systems to be able to benefit from the implementation of the elements listed above under Description.
Impact on NM Service Specifications	None
Operational deployment plan	Deployed in operation along with the release migration
Users' testing	Will be part of the release OPT (Operational Testing).  NM B2B will be available on the PREOPS platform.
Related documentation	NM B2B Technical Resources IFPS User's Manual

#### 5.12 Free Route Airspace Strategic Project (FRA)

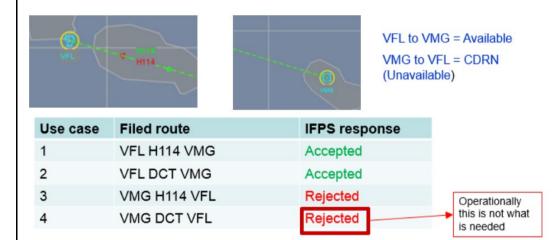
#### 5.12.1 FB1193 – FRA Improvements

#### Objective Developments to improve NMOC efficiency in support to FRA

#### CR\_049315 - Allow definition of route segments that are available/not-defined

Currently when an ATS Route is published as being available in one direction, when that route is defined in CACD, the opposite direction has to be defined as being either available or unavailable. This CACD definition is inconsistent, because the opposite direction does not exist and it is not allowed to file the ATS route designator in the FPL, but in FRA environment it is allowed to file DCT on the segment.

Currently, the common practice and possibility in NMOC is to define the opposite direction as being unavailable, thereby in FRA environment having the DCT filed in a FPL is rejected by IFPS.



#### Description

With this CR, it will be possible to define an ATS Route in CACD as being available in one direction while being not-existing in the other direction.

In order to do this, NM will make use of the existing CDRU value (Undefined – currently used for ATS routes outside of vertical limits) – so, for an ATS route segment, CDRU will be used to allow in opposite direction an undefined portion:

Extend use of value of CDRU (Undefined) in opposite direction



Use Case	Filed Route	IFPS Response
1	VFL H114 VMG	Accepted
2	VFL DCT VMG	Accepted
3	VMG H114 VFL	Rejected
4	VMG DCT VFL	Accepted

Users potentially impacted and/or interested

- Airspace Users (Civil)
- Airspace Users (Military)
- AO or CFSP

	<ul><li>ARO</li><li>ANSP</li></ul>
NM applications and services changed	<ul> <li>CACD</li> <li>FPL (IFPS)</li> <li>FLOW (ETFMS)</li> <li>NM B2B</li> </ul>
Impact category on external users	<ul><li>Impact on users' procedures</li><li>Impact on users' systems</li></ul>
Impact description	Systems that receive and process NM B2B Airspace data may be impacted by the changes in the AIXM data.  The IFPS validation outcome of flight plan messages may change.
Impact on NM Service Specifications	None
Operational deployment plan	Deployed in operation along with the release migration
Users' testing	Will be part of the release OPT (Operational Testing)
Related documentation	TBD
Description	CR_052312 – Publication of FRA Point FLOS (Flight Level Orientation Scheme)  In accordance with ERNIP Part 1, Chapter 10 Free Route Airspace, the FLOS over relevant FRA significant point is one of the specific information which States may publish in AIPs. The FLOS data is also important especially at in the strategic phase, if there are exemptions from general rules for direction of cruising levels in some particular State.  Similarly to the publication of ATS routes FLOS data via NM B2B Airspace, the NM B2B (Airspace) will also support and publish a new data field called "FLOS (Flight Level Orientation Scheme)" in the FRA Point Type Usage model, available for all types of FRA Points.  The FLOS will expose the "Direction of cruising level" field (values will be: empty field, ODD, EVEN, ODD/EVEN, or EVEN/ODD (same as ODD/EVEN).  Important Note: The FRA FLOS (EVEN/ODD) attached to relevant FRA point is for information purposes only, similarly as current FLOS on ATS routes (exits as FL Series) defined in CACD. Currently, ATS route FLOS (EVEN/ODD) is also for information purposes only. This FLOS is not "hard" checked by IFPS for compliance between the FPL and what is published by States - meaning that if in FPL FL filed is ODD but in ATS route on that segment is EVEN, IFPS does not complain. The same will apply for FRA points FLOS.
Users potentially impacted and/or interested	Airspace Users
NM applications and services changed	<ul> <li>CACD</li> <li>CHMI Airspace</li> <li>NM B2B (Airspace Structure)</li> </ul>
Impact category on external	<ul> <li>Impact on Human-Machine interfaces</li> <li>Impact on users' systems</li> <li>Impact on operational procedures</li> </ul>

Impact description	The new publication will not impact the NM-26.0 B2B
Impact on NM Service Specifications	None
Operational deployment plan	Deployed in operation along with the release migration
Users' testing	Will be part of the release OPT (Operational Testing) NM B2B will be available on the PREOPS platform.
Related documentation	NM B2B Technical Resources

#### CR\_052314 - FRA Point Type Usage & Automated FRA Restrictions generation

The Change Request is related to CACD Significant Points:

- Sub-categorisation of Point Types PWP and NVA as en-route and terminal/aerodrome; and
- Definition of FRA significant points relevance; and
- Vertical Point Type definition.

The CR provides the following to NMOC:

- Property Vertical Range for points:
  - oPoints are not always available at all levels;
  - NAVAIDs have vertical radius;
  - Waypoints can serve e.g. as boundary point only at given levels;
  - o FRA usage E, X, I, A, D.
- Property Radius for NAVAIDs:
  - o NAVAIDs cannot be used for long DCTs beyond their radius;
  - Some NAVAIDs are not useable for long distance DCT segments (beyond their range).

An additional feature is the automatic creation of FRA restrictions from the FRA Point Usage data.

#### Description

CACD will also include the FRA points time applicability and relevance of FRA (A) / FRA (D) points to particular aerodrome/s. The table below represents a fictitious example of FRA Point Type Usage in CACD.

RS	Role	Element Type	Element	ld	MIN FL	MAX FL	Start → End Date	H-1	H0	H+1	BFR	Days	Start → End Time
	FRA-A	Aerodrome or Aerodrome Set	EGPXFRA	EGPK	FL095	FL245	2019/09/24 → 9999/99/99					1234567	04:00 22:00
•	FRA-D	Aerodrome or Aerodrome Set	EGPXFRA	EGPK	FL095	FL245	2019/09/24 → 9999/99/99					1234567	04:00 22:00
	FRA-I	Airspace	-	-	FL095	FL660	2019/09/24 → 9999/99/99					1234567	04:00 22:00
	FRA-E	Airspace border or Airspace volume	-	-	FL095	FL660	2019/09/24 → 9999/99/99					1234567	04:00 22:00
•	FRA-X	Airspace border or Airspace volume	-	-	FL095	FL660	2019/09/24 → 9999/99/99					1234567	04:00 22:00

- RS: Existence of restriction generated for relevant FRA point when ticked CACD generates automatically a restriction;
- Role: FRA relevance: FRA-A, FRA-D. FRA-I, FRA-E, FRA-X. For FRA (EX) there are two separate records with same information.
- Element Type:
  - For FRA-A or FRA-D point relevance to FRA Airspace Volume or FRA Airspace Border and Aerodrome or Aerodrome Set (two or more aerodromes);
  - For FRA-I point relevance to FRA Airspace Volume;

	<ul> <li>For FRA-E or FRA-X point relevance to FRA Airspace Border or FRA Airspace Volume;</li> <li>Element Id: Only for FRA-A or FRA-D point relevant FRA Airspace Volume and Aerodrome or Aerodrome Set;</li> <li>MIN FL: FRA point lower vertical limit (FL);</li> <li>MIN FL: FRA point upper vertical limit (FL);</li> <li>Start → End Date: FRA point applicability: expressed as YYYY/MM/DD;</li> <li>H-1, H0, H+1, BFR: applicability reference to Holiday and Busy Friday, respectively;</li> <li>Days: FRA point applicability: expressed as day/s of the week 1234567;</li> <li>Start → End Time: FRA point applicability: expressed as hh:mm.</li> </ul>			
	that these special cases can be manually processed by NMOC/ADS staff for now.			
Users potentially impacted and/or interested	Airspace Users			
NM applications and services changed	• CACD			
Impact category on external users	Impact on users' systems			
Impact description	TBD			
Impact on NM Service Specifications	None			
Operational deployment plan	Deployed in operation along with the release migration			
Users' testing	Will be part of the release OPT (Operational Testing)			
Related documentation	TBD			
	CR_052026 – IFPS check against FRA Point Usage			
Description	IFPS will consider the FRA Point Usage when validating a Flight Plan.			
Users potentially impacted and/or interested	Airspace Users			
NM applications and services changed	Flight Planning (IFPS)			
Impact category on external users	<ul> <li>Impact on Human-Machine interfaces</li> <li>Impact on users' systems</li> <li>Impact on operational procedures</li> </ul>			
Impact description	<ul> <li>(FRA context only for internal usage in CACD to generate the FRA restrictions).</li> <li>A point can be:</li> <li>FRA-E FRA Entry Point</li> <li>FRA-X FRA Exit Point</li> <li>FRA-I FRA Intermediate Point</li> <li>FRA-A FRA Arrival Point</li> </ul>			

	FRA-D FRA Departure Point
Impact on NM Service Specifications	None
Operational deployment plan	Deployed in operation along with the release migration
Users' testing	Will be part of the release OPT (Operational Testing)
Related documentation	TBD
	CR_052315 – Point Type Usage for iOAT
Description	In the point usage menu an additional category shall be added: iOAT. IFPS shall raise an error and reject a flight plan using such points in non-iOAT FPLs and without being conform to this point usage definition. The only usage allowed for non-iOAT part of a flight plan is when the point is used to change from iOAT to GAT or conversely.
Users potentially impacted and/or interested	Airspace Users
NM applications and services changed	Flight Planning (IFPS)
Impact category on external users	<ul> <li>Impact on Human-Machine interfaces</li> <li>Impact on users' systems</li> <li>Impact on operational procedures</li> </ul>
Impact description	None
Impact on NM Service Specifications	None
Operational deployment plan	Deployed in operation along with the release migration
Users' testing	Will be part of the release OPT (Operational Testing)
Related documentation	TBD

# 5.13 NM OPS Service Platform Strategic Project (n-CONECT)

# 5.13.1 FB1208 – Corrections & Tuning of NMP Flight

Description	This is a corrections and tuning functional block for the NMP Flight - minor additions, defect corrections, usability improvements of the HMI based, derived from user feedback, as well as unfinished features from previous releases.  Cf. below "NCO-25628 - FADE - Forecast of ATFM delay evolution".
Users potentially impacted and/or interested	<ul><li>Airspace Users</li><li>AO or CFSP</li><li>NMOC</li></ul>
NM applications and services changed	NMP Flight
Impact category on external users	Impact on Human-Machine Interface
lmpact description	Quality improvements of the NMP Flight
Impact on NM Service Specifications	None
Operational deployment plan	Deployed in operation along with the release migration
Users' testing	Will be part of the release OPT (Operational Testing)
Related documentation	User guide and new video tutorials for the most common use cases
	NOO OFFICE FOR A CATEMALL AND (CARE)
	NCO-25628 – Forecast of ATFM delay evolution (FADE)
Description	This change will introduce a new (optional) column in the NMP Flight List that shows two delay-prediction indicators (ATFM delay evolution trend & predicted delay). These indicators are provided by an Artificial Intelligence-AI system.
Description	This change will introduce a new (optional) column in the NMP Flight List that shows two delay-prediction indicators (ATFM delay evolution trend & predicted delay). These
Description	This change will introduce a new (optional) column in the NMP Flight List that shows two delay-prediction indicators (ATFM delay evolution trend & predicted delay). These indicators are provided by an Artificial Intelligence-AI system.  The new column is in addition to the current 'DELAY' column. The user has the
Description  Users potentially impacted and/or interested	This change will introduce a new (optional) column in the NMP Flight List that shows two delay-prediction indicators (ATFM delay evolution trend & predicted delay). These indicators are provided by an Artificial Intelligence-AI system.  The new column is in addition to the current 'DELAY' column. The user has the possibility to choose the 'old' DELAY column and/or the new FADE DELAY column.
Users potentially impacted and/or	This change will introduce a new (optional) column in the NMP Flight List that shows two delay-prediction indicators (ATFM delay evolution trend & predicted delay). These indicators are provided by an Artificial Intelligence-AI system.  The new column is in addition to the current 'DELAY' column. The user has the possibility to choose the 'old' DELAY column and/or the new FADE DELAY column.  This information will be gradually onboarded.
Users potentially impacted and/or interested  NM applications and services	This change will introduce a new (optional) column in the NMP Flight List that shows two delay-prediction indicators (ATFM delay evolution trend & predicted delay). These indicators are provided by an Artificial Intelligence-AI system.  The new column is in addition to the current 'DELAY' column. The user has the possibility to choose the 'old' DELAY column and/or the new FADE DELAY column.  This information will be gradually onboarded.  • AO or CFSP • NMOC
Users potentially impacted and/or interested  NM applications and services changed  Impact category on external	This change will introduce a new (optional) column in the NMP Flight List that shows two delay-prediction indicators (ATFM delay evolution trend & predicted delay). These indicators are provided by an Artificial Intelligence-AI system.  The new column is in addition to the current 'DELAY' column. The user has the possibility to choose the 'old' DELAY column and/or the new FADE DELAY column.  This information will be gradually onboarded.  • AO or CFSP • NMOC

Operational deployment plan	Deployed in operation along with the release migration		
Users' testing	Will be part of the release OPT (Operational Testing)		
Related documentation	User guide and new video tutorials for the most common use cases		

#### 5.13.2 FB1172 – NMP Flow Phase 2

Objective	To enhance the NMP Flow application with functionalities required to meet CP1 functionalities.			
Description	This FB continues the FB1140 of NM-26.0 and 26.1 to provide users of the NMP Flow application (FMPs and TWRs) with additional functionalities to meet CP1 requirements. Amongst other new features, NMP Flow will provide new load monitoring, sector view, counts functionalities, as well as the capability to digitally request MCP regulations to NM.			
Users potentially impacted and/or interested	<ul><li>FMP</li><li>TWR</li><li>NMOC</li></ul>			
NM applications and services changed	NMP Flow			
Impact category on external users	Impact on Human-Machine Interface			
Impact description	New HMI interfaces of existing Flow functions, and new ones. Current CHMI interfaces will remain available minimizing the impact of the new functionalities made available via the NMP Flow.			
Impact on NM Service Specifications	None			
Operational deployment plan	Deployed in operation along with the release migration			
Users' testing	Will be part of the release OPT (Operational Testing)			
Related documentation	ATFCM Manual changes, NMP User Guide and help FLOW update			

# 5.13.3 FB1238 – RAD Operational Improvements

Description	This is a functional block for the NMP RAD - additions, corrections, usability improvements of the HMI, management of RAD Annex 4 and some grammar adaptations based on user's (RMG, NM RAD Team) feedback. This change contains, amongst others, changes to the RAD DMR workflow, forces users to use the existing grammar in some particular cases, defines clearer usage of the date definition formats, corrects bugs, and changes the formatting of the RAD export/output files.		
Users potentially impacted and/or interested	<ul> <li>Airspace Users</li> <li>AO or CFSP</li> <li>NMOC</li> <li>National and Local RAD coordinators, ENV Coordinators</li> </ul>		
NM applications and services changed	NMP RAD		

Impact category on external users	Impact on Human-Machine Interface
Impact description	Quality improvements of the NMP RAD application
Impact on NM Service Specifications	None
Operational deployment plan	Deployed in operation along with the release migration
Users' testing	Will be part of the release OPT (Operational Testing)
Related documentation	NMP Online help

# 5.14 Performance Strategic Project

# 5.15 Operations Improvements

# 5.15.1 FB1204 – Flight Planning Improvements

	CR_049115 - Additional comment required for FPL message association rejections
	There is a requirement for the IFPS to help improve the understanding of FPL message originators when rejecting an FPL for which an FPL is found to be already existing through message association.
Decemention	With this CR, a new comment shall be included in the rejection.
Description	***- COMMENT FPL ALK504 EGLL2140-VCBI DOF/200921 IS ALREADY EXISTING. TO MODIFY THE EXISTING FPL OR TO FILE A NEW FPL PLEASE REFER TO THE IFPS USERS MANUAL.***
	Please note that the Flight Plan Validation service will not return this message, as this service is rendered through a "side" system that does not have access to the flight plan database.
	Airspace Users (Civil)
Users potentially	Airspace Users (Military)
impacted and/or interested	AO or CFSP  ABO
Interested	ARO     ANSP
NM applications and services changed	• FPL (IFPS)
Impact category	Impact on users' systems
on external	Impact on users' procedures
users	
Impact description	The IFPS operational reply message of type REJ may contain a new comment.
Impact on NM Service Specifications	None
Operational deployment plan	Deployed in operation along with the release migration
Users' testing	Will be part of the release OPT (Operational Testing)
Related documentation	TBD

# 5.15.2 FB1202 – NM B2B Improvements

Objective	This FB, as in every release, implements the most beneficial NM B2B changes requested by NM B2B users
	CR_049908 - Add IATA Flight number to NM B2B Flight Data
Description	When available the IATA Flight number information will be shared through NM B2B services. This data is most relevant for the airports in their process to automate the matching of the aircraft to IATA flight number.

Users potentially impacted and/or interested	AO or CFSP     ANSP
NM applications and services changed	<ul><li>NM B2B R/R and P/S</li><li>NMP Flight</li></ul>
Impact category on external users	Impact on users' systems
Impact description	Since NM B2B P/S users subscribe to a specific version of an NM B2B P/S topic (e.g. flight data for NM-26.0), they receive versioned topic messages. Therefore, the change does not affect past NM B2B versions.
Impact on NM Service Specifications	None
Operational deployment plan	Deployed in operation along with the release migration
Users' testing	Will be part of the release OPT (Operational Testing)
Related documentation	Flight Management Use Cases NM-26.0  NM B2B Technical Resources
Description	CR_052319 – Cherry-pick regulation ids will start with 'X' instead of 'CP'  Today, the Regulation Id for the Network Cherry Pick regulation type starts with two letters 'CP'.  Endorsed by the ODSG#56 (agreed by NMOC and FMPs), the requirement to replace 'CP' by 'X' will free an additional character (from the limited number of 8 characters) to the Regulation ID when an MCP is requested by the FMPs.
Users potentially impacted and/or interested	FMP     NMOC
NM applications and services changed	FLOW system     NM B2B
Impact category on external users	Impact on users' systems
Impact description	The Mandatory Cherry Pick Regulation Proposals received using the NM B2B services shall start with 'X' instead of 'CP'
Impact on NM Service Specifications	None
Operational deployment plan	Deployed in operation along with the release migration
Users' testing	Will be part of the release OPT (Operational Testing)
Related documentation	ATFCM Operations Manual NM B2B Technical Resources
Description	CR_049216 - Flight list on ALTN aerodromes for NM B2B clients Through the NM B2B Publish/Subscribe with the FLIGHT_PLANS topic, the alternateAerodrome will be added in the FlightSetDefinitionElement. This

	change will allow the NM B2B clients to easily retrieve the information to which aerodrome the flight could be potentially diverted.
Users potentially impacted and/or interested	AO or CFSP     ANSP
NM applications and services changed	<ul> <li>NM B2B R/R and P/S</li> <li>NOP</li> <li>CHMI ATFCM and CHMI Archive</li> <li>NMP Flight</li> </ul>
Impact category on external users	<ul> <li>Impact on users' systems</li> <li>Impact on Human-Machine interfaces</li> </ul>
	Since NM B2B P/S users subscribe to a specific version of an NM B2B P/S topic (e.g. flight data for NM-26.0), they receive versioned topic messages. Therefore, the change does not affect past NM B2B versions.  It will be possible to build a Flight List on Altn on NOP and CHMI ATFCM/Archive.
Impact description	Example:    Main 18 Sep 1802
Impact on NM Service Specifications	None
Operational deployment plan	Deployed in operation along with the release migration
Users' testing	Will be part of the release OPT (Operational Testing)
Related documentation	NM B2B Technical Resources
Description	CR_052415 – Export 'nmDesignator' as part of NavAid and DesignatedPoint features in NM B2B Airspace Structure  NM Publish/Subscribe Flight data could refer to so-called 'old DBE point ids' (e.g. when exposing point profiles), which are not exported in the NM B2B Airspace Structure (points are exported, but not using these particular NM ids). The removal of these references from the NM Publish/Subscribe Flight data should be achieved via iNM, but in

	the meanwhile it asked many times to get these references via the NM B2B Airspace Structure.
Users potentially impacted and/or interested	All NM B2B Flight, Flow and Airspace users
NM applications and services changed	• NM B2B
Impact category on external users	Impact on users' systems
Impact description	No impact on NM-26.0 B2B version.  Re. NM-27.0, NM B2B users willing to resolve 'old DBE point ids' will have to extract the new 'nmDesignator' attribute value from the concerned NavAid and DesignatedPoint features.
Impact on NM Service Specifications	None
Operational deployment plan	Deployed in operation along with the release migration
Users' testing	Will be part of the release OPT (Operational Testing)
Related documentation	NM B2B Technical Resources

# 5.15.3 FB1203 – Corrections and tuning of external data processing

Objective	This FB, as in every NM release, implements the most beneficial changes improving the NM internal processing of the external data received
Description	CR_050919 – New triggering event for the EFDs/PSFDs when MPR is changed A new EFD/PSFD will be triggered by the change of the MPR (Most Penalising Regulation) (or the list of regulations) which affects a flight but with no effect on the CTOT.  EFD – ETFMS Flight Data PSFD – Publish/Subscribe Flight Data
Users potentially impacted and/or interested	<ul><li>AO or CFSP</li><li>ANSP</li></ul>
NM applications and services changed	ETFMS – FLOW     NM B2B P/S
Impact category on external users	Impact on users' systems
Impact description	More EFDs/PSFDs will be triggered.
Impact on NM Service Specifications	None
Operational deployment plan	Deployed in operation along with the release migration

Users' testing	Will be part of the release OPT (Operational Testing) for the NM B2B P/S. The EFD related changes to the NM release cannot be tested on an OPT chain.
Related documentation	Flight Progress Messages Document  NM B2B Technical Resources
	CR_051715 – Increase maximum size of the EFD message
Description	Currently, with NM-26.0, the maximum size of an EFD message is 40 KB (40960 bytes). Some military flights may trigger EFDs which are longer than 40 KB (40960 bytes). When this happens, ETFMS drops these EFDs, which are therefore not shared with the EFD clients.  With NM-27.0, the maximum size of an EFD message will be increased to 65000 bytes, so that less EFD messages will be dropped.  EFD – ETFMS Flight Data
Users potentially impacted and/or interested	<ul><li>AO or CFSP</li><li>ANSP</li></ul>
NM applications and services changed	• ETFMS – FLOW
Impact category on external users	Impact on users' systems
Impact description	Users of EFD messages should verify that their software consuming EFD messages can cope with EFD messages 65000 bytes long
Impact on NM Service Specifications	None
Operational deployment plan	Deployed in operation along with the release migration
Users' testing	The EFD related changes to the NM release cannot be tested on an OPT chain.
Related documentation	Flight Progress Messages Document
	CR_052111 - No EFD nor PSFD for a DAU event on a terminated flight
Description	The DAU (Dynamic Airspace Update) event can trigger many additional EFDs in a very short time causing a long EFD queue in the NM system, causing sometimes a significant delay in the delivery of EFD messages to the end user.  With NM-27.0, once the flight is set in the FLTSTATE TE (Terminated), there are no EFDs triggered by the DAU event.
Users potentially impacted and/or interested	<ul><li>AO or CFSP</li><li>ANSP</li></ul>
NM applications and services changed	• ETFMS – FLOW
Impact category on external users	None

Impact description	The external applications using the EFD data are already able to consume the EFDs triggered by the DAU event. However, EFD consumers must be aware of this behavioral change.
Impact on NM Service Specifications	None
Operational deployment plan	Deployed in operation along with the release migration
Users' testing	The EFD related changes to the NM release cannot be tested on any OPT chain.
Related documentation	Flight Progress Messages Document
Description	CR_051019 – The IOBT and EOBT in ETFMS output on legacy and NM B2B Through different information received, the NM system uses IOBT and EOBT fields. When IOBT and EOBT are available, both information will be exposed in the NM output (legacy and NM B2B services). It is already the case of FUM messages.
Users potentially impacted and/or interested	<ul><li>AO or CFSP</li><li>ANSP</li><li>Airports</li></ul>
NM applications and services changed	NM B2B P/S
Impact category on external users	Impact on users' systems
lmpact description	Client systems have to be able to cope with both fields when received from NM
Impact on NM Service Specifications	None
Operational deployment plan	Deployed in operation along with the release migration
Users' testing	Will be part of the release OPT (Operational Testing)
Related documentation	NM B2B Technical Resources
Description	CR_051412 – Allow diversion change when subsequent information confirms it  The diversion in ETFMS can be triggered by the CPR data received with CPR_ADES different from FPL_ADES. In case the diversion is wrongly triggered by the CPRs any subsequent CPR data could not correct this initial diversion. Through this CR we will identify specific operational cases when the subsequent CPR data should be considered for second diversion or return to initial FPL_ADES.
Users potentially impacted and/or interested	<ul><li>AO or CFSP</li><li>ANSP</li></ul>
NM applications and services changed	None (fine tuning of an existing functionality)

Impact category on external users	TBD
Impact description	Flights wrongly flagged as diverted based on the external data received could be set back to the original ADES different ADES based on subsequent CPR data received
Impact on NM Service Specifications	None
Operational deployment plan	Deployed in operation along with the release migration
Users' testing	TBD
Related documentation	Flight Progress Messages Document

### 5.15.4 FB1205 – ATFCM Domain improvements

	CR_050109 – Assign a complexity factor per TV
Description	When providing capacities today, FMPs are not able to monitor the counts evolution against specific complexity factors and update the allocated capacity inside the different time period, accordingly.  The purpose of this CR is to provide the ability for FMPs to set a complexity coefficient per TV flow which will update the capacity of the TV according to the expected counts.  The process to introduce the new complexity factor is foreseen as follows:  The TV capacity is equivalent to a complexity coefficient of 100% (maximum
	<ul> <li>complexity - the most pessimistic scenario)</li> <li>FMPs to identify and analyse the importance of specific flows</li> <li>Assign a complexity coefficient according to the analysis of these selected flows</li> <li>In turn, the system will automatically adjust the monitoring value according to the complexity coefficients and the expected traffic</li> <li>The complexity information will be provided by the FMPs, according to their criteria, per TV.</li> </ul>
Users potentially impacted and/or interested	• FMP
NM applications and services changed	Airspace system (ENV)     ETFMS     CHMI     NMP Flow
Impact category on external users	<ul> <li>Impact on Human-Machine interfaces</li> <li>Impact on users' systems</li> </ul>
Impact description	The NM B2B change will not cause any incompatibility in the past NM B2B versions.
Impact on NM Service Specifications	None

Operational deployment plan	Deployed in operation along with the release migration
Users' testing	Will be part of the release OPT (Operational Testing)
Related documentation	TBD
	CR_052326 – Activation of the PFD loading on ETFMS
Description	Predict Flight Data predicts the demand based on the flight data from relevant previous days of operation. It is available in pre-tactical operations, and will now become available in tactical operations. Multiple use cases (e.g. the creation of regulations capturing long haul traffic) could potentially benefit from this data.  The end users (NM or its users) will be able to select between displaying or not the PFDs in their interfaces. This will bring significant benefits in terms of NMOC-FMP coordination while enabling more efficient measure design and traffic monitoring for FMPs.  Flights predicted by PFDs will be replaced in NM systems as soon as the corresponding
	Flight Plan is filed by the AO. PFDs will be removed from the demand prediction at EOBT – 4h if no matching flight plan is filed by the AO.  When a Flight Plan and a PFD compete for the same slot within a regulation, the actual filed Flight Plan will always take priority.
Users potentially impacted and/or interested	• FMP
NM applications and services changed	<ul> <li>CHMI</li> <li>NOP Portal</li> <li>NMP Flow</li> <li>NM B2B</li> </ul>
Impact category on external users	<ul><li>Impact on Human-Machine interfaces</li><li>Impact on users' systems</li></ul>
Impact description	<ul> <li>NMP Flow and CHMI will offer the user the possibility to display PFD data in counts, load displays and flight list.</li> <li>Retrieval of PFD related data via B2B will also be available via services for retrieving counts and flight lists.</li> </ul>
Impact on NM Service Specifications	FM service specification Section 2.3.5: Traffic forecast simulations are now also available in ETFMS with the use of PFDs
Operational deployment plan	Deployed in operation along with the release migration
Users' testing	Will be part of the release OPT (Operational Testing)
Related documentation	TBD
Description	CR_052508-Slot Extension for FMPs  This change aims to allow all FMPs to be able submit slot extension request via the eHelpDesk service.

	This will be visible in both NOP Portal and NMP interfaces.
	This will bring significant benefits to NMOC & Airspace Users as the need for critical phone calls will be avoided.
	Please note that it is already available to have slot extension requests from FMPs (used by UK/Netherlands and some other FMPs) but it requires cumbersome process and individual token adaptations. This change will allow possibility for slot extension request for all FMPs equally.
Users potentially impacted and/or interested	• FMP
NM applications and services changed	<ul> <li>CHMI</li> <li>NOP Portal</li> <li>NMP Flow</li> <li>NM B2B</li> </ul>
Impact category on external users	<ul> <li>Impact on Human-Machine interfaces</li> <li>Impact on users' systems</li> </ul>
Impact description	CHMI, NOP Portal, NMP Flow and NM B2B will offer the user the possibility to submit slot extensions. NM-26.0 B2B clients will not be impacted.
Impact on NM Service Specifications	FM service specification
Operational deployment plan	Deployed in operation along with the release migration
Users' testing	Will be part of the release OPT (Operational Testing)
Related documentation	TBD

### 5.15.5 FB1206 – NM Restriction Model Enhancements

Description	CR_043209 – RAD published conditions related to information present in the RMK/ field of the FPL  NMOC has procedures that require manual intervention in IFPS because the published conditions cannot be encoded in the restrictions model (e.g. RMK/NATO). To reduce the manual workload in IFPS, a new condition should be included in the restriction model for searching the remarks in a FPL (RMK/).  Consequently, a new 'Flight Properties' condition shall be available in the restriction model for 'Remark (RMK/)'.
Users potentially impacted and/or interested	FMP     AO or CFSP
NM applications and services changed	<ul> <li>CACD</li> <li>FLOW (ETFMS)</li> <li>FPL (IFPS)</li> <li>DWH</li> </ul>

	<ul> <li>CHMI</li> <li>NMP Airspace</li> <li>NMP RAD</li> <li>NM B2B (AIXM)</li> </ul>
Impact category on external users	TBD
Impact description	Detailed impact is under analysis and will be shared in the next publication of these Release Notes
Impact on NM Service Specifications	None
Operational deployment plan	Deployed in operation along with the release migration
Users' testing	Will be part of the release OPT (Operational Testing). NM B2B will be available on the PREOPS platform.
Related documentation	IFPS User's Manual

## 5.16 Standalone CRs

-	CD 050007. From out of ATC conits
	CR_052207: Export of ATS units
Description	The NM B2B API allows the B2B client to provide ANU identifiers in various requests, e.g. to provide the ANU identifiers of interest in a FlightDataCreateSubscriptionRequest. However, only AMC units are exposed by the NM-26.0 B2B Airspace Structure service. This CR consists in additionally exposing:  • The type, ANU id of the units of following types:  • FMP, DPIO  • ACC, APP, OAC, TWR and UAC  • The AirTrafficManagementService provided by each FMP (service type and managed airspace) and DPIO (service type and managed airport)  • The AirTrafficControlService provided by each ATC (ACC, APP, OAC, TWR and UAC) unit (service type, controlled airspace and/or airport)
Users potentially impacted and/or interested	All NM B2B users (needing to resolve ANU ids)
NM applications and services changed	NM B2B
Impact category on external users	Impact on users' systems
Impact description	None
Impact on NM Service Specifications	None
Operational deployment plan	Deployed in operation along with the release migration
Users' testing	Will be part of the release OPT (Operational Testing)
Related documentation	NM B2B Technical Resources
-	CR_050620: Support access to targetTimeOverFix in Flight
<b>Description</b>	The targetTimeOverFix field becomes a light field. In NM-27.0 B2B, it can be demanded via FlightListBy
Users potentially impacted and/or interested	All NM B2B users (accessing targetTimeOverFix in Flight)
NM applications and services changed	• NM B2B
Impact category on external users	- Impact on users' systems

Impact description	Note that, after NM-27.0 release deployment, the feature will be supported in both NM-26.0 and NM-27.0 B2B versions.
Impact on NM Service Specifications	None
Operational deployment plan	Deployed in operation along with the release migration
Users' testing	Will be part of the release OPT (Operational Testing)
Related documentation	NM B2B Technical Resources
	CR_050607: Export of the airport/heliport group mentioned in restrictions
	In some RAD and Flight Restrictions, the instruction indicates information about groups, like PARIS_GROUP, or WESSEX_GROUP.  RAD restrictions are published on the Network Operations Portal
	https://www.nm.eurocontrol.int/RAD/index.html.
Description	<ul> <li>Annex 1: Area definitions contains the definitions of areas. These areas correspond to the AirportHeliportSet features.</li> </ul>
	The NM B2B Airspace Structure Service exports the feature AirportHeliportSet
	With NM-27.0, the airport/heliport group name will be exported via the name attribute of the exported AirportHeliportSet features in order to enable the correlation between the restriction airport/heliport group and the corresponding AirportHeliportSet feature.
Users potentially impacted and/or interested	All NM B2B users (needing to resolve airport/heliport groups in restrictions)
NM applications and services changed	NM B2B
Impact category on external users	Impact on users' systems
Impact description	No change in NM-26.0. NM-27.0 adaptation is only needed if the user wants to resolve airport/heliport groups in restrictions.
Impact on NM Service Specifications	None
Operational deployment plan	Deployed in operation along with the release migration
Users' testing	Will be part of the release OPT (Operational Testing)
Related documentation	NM B2B Technical Resources
	CR_051520: Link from the NM B2B documentation to standard exchange models (AIXM, FIXM)
Description	This development will improve the navigability from the NM-27.0 B2B documentation data the standard exchange model (AIXM, FIXM) data types.

NM applications and services changed   NM B2B	Users potentially impacted and/or interested	All NM B2B users (documentation)
on external users  Impact description  Impact on NM Service Specifications  Operational deployment plan  Users' testing N/A  Related documentation  CR_051614: Improvement of the matching in P/S Flight Plan originators  Until the NM-26.0 B2B, the P/S Flight Plan subscription matches only against the last entered flight plan originator. As a consequence, when for example a CFSP creates a P/S subscription for all flight plans is updated by another or granisation (e.g. an ARO or the aircraft operator itself).  This development will ensure that a P/S Flight Plan subscription matches against any originator in the flight plan originator list.  Users potentially impacted and/or interested  NM applications and services changed  Impact category on external users  Impact description  Impact on NM Services  Impact on NM Service Specifications  Operational deployment plan  Users' testing  Will be part of the release OPT (Operational Testing)  NM B2B Technical Resources	and services	• NM B2B
Impact on NM   Service   Specifications   None   None	on external	None
Service Specifications Operational deployment plan Users' testing Related documentation  CR_051614: Improvement of the matching in P/S Flight Plan originators Until the NM-26.0 B2B, the P/S Flight Plan subscription matches only against the last entered flight plan originator. As a consequence, when for example a CFSP creates a P/S subscription for all flight plans originated by itself, the CFSP does not receive any notification when the flight plan is updated by another organisation (e.g. an ARO or the aircraft operator itself).  This development will ensure that a P/S Flight Plan subscription matches against any originator in the flight plan originator list.  Users potentially impacted and/or interested NM applications and services changed Impact category on external users Impact description Impact on NM Service Specifications Operational deployment plan Users' testing Related documentation  NM B2B Technical Resources  NM B2B Technical Resources  NM B2B Technical Resources  NM B2B Technical Resources	•	Documentation only
Users' testing   N/A	Service	None
Related documentation  CR_051614: Improvement of the matching in P/S Flight Plan originators  Until the NM-26.0 B2B, the P/S Flight Plan subscription matches only against the last entered flight plan originator. As a consequence, when for example a CFSP creates a P/S subscription for all flight plans originated by itself, the CFSP does not receive any notification when the flight plan is updated by another organisation (e.g. an ARO or the aircraft operator itself).  This development will ensure that a P/S Flight Plan subscription matches against any originator in the flight plan originator list.  Users potentially impacted and/or interested  NM applications and services changed  Impact category on external users  Impact matches against any  Impact on NM B2B  Impact on NM Service Specifications  Operational deployment plan  Users' testing  Will be part of the release OPT (Operational Testing)  NM B2B Technical Resources	•	N/A
CR_051614: Improvement of the matching in P/S Flight Plan originators	Users' testing	N/A
Until the NM-26.0 B2B, the P/S Flight Plan subscription matches only against the last entered flight plan originator. As a consequence, when for example a CFSP creates a P/S subscription for all flight plans originated by itself, the CFSP does not receive any notification when the flight plan is updated by another organisation (e.g. an ARO or the aircraft operator itself).  This development will ensure that a P/S Flight Plan subscription matches against any originator in the flight plan originator list.  Users potentially impacted and/or interested  NM applications and services changed  Impact category on external users  Impact description  Impact on NM Service Specifications  Operational deployment plan  Users' testing  Will be part of the release OPT (Operational Testing)  NM B2B Technical Resources		NM B2B Technical Resources
entered flight plan originator. As a consequence, when for example a CFSP creates a P/S subscription for all flight plans originated by itself, the CFSP does not receive any notification when the flight plan is updated by another organisation (e.g. an ARO or the aircraft operator itself).  This development will ensure that a P/S Flight Plan subscription matches against any originator in the flight plan originator list.  Users potentially impacted and/or interested  NM applications and services changed  Impact category on external users  Impact description  Impact on NM Service Specifications  Operational deployment plan  Users' testing  Will be part of the release OPT (Operational Testing)  NM B2B Technical Resources		CR_051614: Improvement of the matching in P/S Flight Plan originators
impacted and/or interested  NM applications and services changed  Impact category on external users  Impact description  Impact on NM Service Specifications  Operational deployment plan  Users' testing  NM B2B  NM B2B  Impact on users' systems  None  Deployed in operation along with the release migration  Will be part of the release OPT (Operational Testing)  NM B2B Technical Resources	Description	entered flight plan originator. As a consequence, when for example a CFSP creates a P/S subscription for all flight plans originated by itself, the CFSP does not receive any notification when the flight plan is updated by another organisation (e.g. an ARO or the aircraft operator itself).  This development will ensure that a P/S Flight Plan subscription matches against any
and services changed  Impact category on external users  Impact description  Impact on NM Service Specifications  Operational deployment plan  Users' testing  NM B2B  Impact on users' systems  Impact None  None  Deployed in operation along with the release migration  Users' testing  Will be part of the release OPT (Operational Testing)  NM B2B Technical Resources	impacted and/or	AO/CFSP
on external users  Impact description  Impact on NM Service Specifications  Operational deployment plan  Users' testing  None  Impact on NM None  None	and services	• NM B2B
Impact on NM Service Specifications  Operational deployment plan  Users' testing  Will be part of the release OPT (Operational Testing)  Related documentation  None  Deployed in operation along with the release migration  Will be part of the release OPT (Operational Testing)  NM B2B Technical Resources	on external	Impact on users' systems
Service Specifications  Operational deployment plan  Users' testing  Related documentation  None  Deployed in operation along with the release migration  Will be part of the release OPT (Operational Testing)  NM B2B Technical Resources	•	None
deployment plan  Users' testing  Related documentation  Will be part of the release OPT (Operational Testing)  NM B2B Technical Resources	Service	None
Related documentation NM B2B Technical Resources		Deployed in operation along with the release migration
documentation NM B2B Technical Resources	Users' testing	Will be part of the release OPT (Operational Testing)
Description CR_051017: Single B2B certificate for multi-function organisations		NM B2B Technical Resources
	Description	CR_051017: Single B2B certificate for multi-function organisations

	This CR consists in enabling the provision by the NM B2B client of an explicit end user, identified by its ANU id (see also CR_052207 above). The NM B2B will verify for each such request the existence of an authorisation association between the certificate ANU id and the possible end user ANU ids (maintained in CACD).
Users potentially impacted and/or interested	Potentially all NM B2B users
NM applications and services changed	NM B2B
Impact category on external users	Impact on users' systems
Impact description	None
lmpact on NM Service Specifications	None
Operational deployment plan	Deployed in operation along with the release migration
Users' testing	Will be part of the release OPT (Operational Testing)
Related documentation	NM B2B Technical Resources
Description	NM B2B Users use the PSFDs (P/S Flight Data messages) to maintain a client-side flight list up to date. In case of de-synchronization (due to loss of messages, a crash on the client or simply a maintenance), the NM-26.0 B2B client has no simple way to re-initialise the flight list associated with the subscription. NM B2B users have been asking for a simple and effective way to re-initialise their client-side flight list. With NM-27.0, a service will be provided to obtain the most up-to-date info of each flight that matches the subscription.
Users potentially impacted and/or interested	All NM B2B users using P/S Flight Data
NM applications and services changed	NM B2B
Impact category on external users	Impact on users' systems
lmpact description	Much simpler re-synchronisation of a client-side flight list
Impact on NM Service Specifications	None

Users' testing	Will be part of the release OPT (Operational Testing)
Related documentation	NM B2B Technical Resources
accamentation	
	CR_051510: Replacement of the PublishSubscribe Service Group
Description	The P/S services of all business service groups (General Information, Airspace, Flight and Flow) were defined until the NM-26.0 B2B version in an artificial technical service group: PublishSubscribe. This split was conflicting with the business organisation of the NM B2B services. This CR replaces the PublishSubscribe service group by the following elements:  • new Subscription Management port type in the 'Common' service groups that exposes the business agnostic Subscription Management: SubscriptionList, SubscriptionPause, SubscriptionResume, SubscriptionDeletion • one XXXSubscriptionCreation, XXXSubscriptionUpdate, XXXSubscriptionRetrieval, XXXSubscriptionHistory pattern per XXX P/S topic in its corresponding service group / port type
Users potentially impacted and/or interested	All NM B2B users using Publish/Subscribe
NM applications and services changed	NM B2B
Impact category on external users	Impact on users' systems
Impact description	After deployment of the NM-27.0 release, the PublishSubscribe service group will still exist, and unchanged, in the NM-26.0 B2B version
Impact on NM Service Specifications	None
Operational deployment plan	Deployed in operation along with the release migration
Users' testing	Will be part of the release OPT (Operational Testing)
Related documentation	NM B2B Technical Resources
	CR_051112 - New concept of Gate
Description	With the purpose of better capturing the traffic in the FRA context, CACD will allow to create a new kind of air block, called "Gate".  A Gate must be based on minimum 2 points and maximum 2000 points  The Gate will be automatically generated by the system  The width of the Gate will be defined between 2 and 16 NM  The maximum angle of turn is defined at 120 degrees  The Gate is to be used in an airspace that can be used in RL, TV, FW and RS

	A :
Users potentially impacted and/or	Airspace users     FLOW     FLIGHT
interested	FLIGHT     NMOC/AD
NM applications and services changed	CHMI/AD
Impact category on external users	None.
Impact description	Pure data change
Impact on NM Service Specifications	None
Operational deployment plan	Deployed in operation along with the release migration
Users' testing	Will be part of the release OPT (Operational Testing). NM B2B will be available on the PREOPS platform.
Related documentation	NM CACD OPERATIONS MANUAL

	CR_052108 – Script to replace old RAD Appendix text with RAD ANNEX
Description	RAD Appendix texts are renamed with the new agreed RAD annexes. Consequently, this change updates CACD RAD-RSs in bulk with new naming conventions:  • 'Appendix 7'> 'ANNEX 2C'  • 'Appendix 3'> 'ANNEX 2A'  • 'Appendix 4'> 'ANNEX 3B'  • 'APP3'> 'RAD ANNEX 2A'  • 'APP4'> 'RAD ANNEX 3B'
Users potentially impacted and/or interested	Airspace Users
NM applications and services changed	• CACD
Impact category on external users	Impact on Human-Machine interfaces
Impact description	New naming convention will be visible in CHMI-Airspace HMI
Impact on NM Service Specifications	None
Operational deployment plan	Deployed in operation along with the release migration
Users' testing	Will be part of the release OPT (Operational Testing)

Related documentation	None	
Description	CR_052107 – 'NM' origin ID in FlowRestrictionOrigin  The 'NM' origin ID represents NM restrictions for particular ATFCM Measures. This origin ID is planned to be used from NM-27.0 onwards for NM ATFCM measures imposed for capacity release problems. The NM & airspace user will be able to use 'NM' as a valid FlowRestrictionOrigin.	
Users potentially impacted and/or interested	NM     Airspace Users	
NM applications and services changed	CACD-ENV	
Impact category on external users	<ul> <li>Impact on Human-Machine interfaces</li> <li>Impact on operational procedures (TBC)</li> </ul>	
Impact description	Change in CACD validation rules to allow 'NM' as a valid FlowRestrictionOrigin – with this change, the NM origin will be made visible via CHMI-Airspace and NM B2B	
Impact on NM Service Specifications	None	
Operational deployment plan	Deployed in operation along with the release migration	
Users' testing	Will be part of the release OPT (Operational Testing)	
Related documentation	NM CACD OPERATIONS MANUAL	
	CR_052016 - Load EFD Events for D-1	
Description	EFD_EVT NM system archiving/DWH information is widely used in NM Reportings. It is notably used as part of the FATHOM dashboard, see below FATHOM Eurocontrol analysis tool info. FATHOM is used by hundreds of users from ANSPs, Airlines and Airports. Currently FATHOM dashboard only support D-2 information.	
	With this change, FATHOM report and dashboards could start to support D-1 (data from previous day) information which is requested by many airspace users. To do this change, NM Archiving/DWH will start to update EFD_EVT with D-1 data.	
	Background information about FATHOM -Network Manager interactive analysis tool: <a href="https://www.eurocontrol.int/tool/network-manager-interactive-analysis-tool">https://www.eurocontrol.int/tool/network-manager-interactive-analysis-tool</a> EUROCONTROL's interactive analysis tool FATHOM allows users to access comprehensive data giving insights into traffic, punctuality, schedule and air traffic flow management (ATFM) delay, fuel burn, route charges, route length and flight time. Users can quickly determine how their actual performance compares to their planned performance, and take measures to adapt their planning in the future. FATHOM is a concrete deliverable of the Operational Excellence Programme put in place by the EUROCONTROL Network Manager to improve the efficiency and sustainability of air traffic in Europe and share operational performance data with the aviation community.	

Users potentially impacted and/or interested	Airspace Users
NM applications and services changed	<ul><li>DWH</li><li>EC Reporting</li></ul>
Impact category on external users	Impact on Human-Machine interfaces over EC-Reporting/Analysis Tools
Impact description	After deployment of the NM-27.0 release, D-1 (previous day) data will start to be stored. Later this new data will be also reflected to FATHOM reporting-analysis tool.
Impact on NM Service Specifications	None
Operational deployment plan	Deployed in operation along with the release migration
Users' testing	It is not part of OPT test session. It will become visible when later EC-Reporting/Analysis tools updated by using this data.
Related documentation	None

# 6 Documentation

Operational Manuals/Guides		
ATFCM User's Manual	Operational description of the NM ATFCM related actions, information and message exchange	
ATFCM Operations Manual	Intended to provide Flow Management Positions (FMPs) and EUROCONTROL's Network Manager (NM) with common understanding of their roles in delivering the most effective Air Traffic Flow and Capacity Management (ATFCM) services to Air Traffic Control (ATC) and Aircraft Operators (AOs)	
Yo-Yo and sharp-turn angle flight plans identification - Guidelines	This document describes the NM System tool for the detection of the Yo-Yo and sharp-turn angle flight plans (Turn) by aircraft operators (AOs) and flow management positions (FMPs) using the NM System. It also describes the conditions for rejection of critical Yo-Yo and TURN profiles by IFPS.	
CHMI ATFCM Reference Guide	This reference guide is intended for the users of the ATFCM Collaboration Human Machine Interface (CHMI) application	
API Implementation Guide	Provides an overview and description of the available API services	
DPI Implementation Guide	Provides an overview and description of the available DPI services	
IFPS User's Manual	The manual is intended to contain all the necessary procedures and information in order for users to be able to construct, transmit or when necessary to correct, flight plan and associated update messages. Procedures for the distribution of such messages after processing by the IFPS are also described.	
Flight Plan Guide and IFPS Errors Guide	The Flight Plan Guide allows users to search for the correct format to be used for the different fields of the ICAO Flight Plan via an on-line database.  The IFPS Errors Guide is an electronic version of the error definitions published in the NM IFPS User's Manual.	
Flight Progress Messages  Document	Contains a description of messages from and to systems external to the NM which have been identified as Flight Progress Messages. It contains both messages from/to the Integrated initial Flight Plan Processing System (IFPS) to/from the Enhanced Tactical Flow Management System (ETFMS) and the Centralised SSR Code Assignment and Management System (CCAMS).	
FUA – AMC/CADF Operations Manual	Provides guidance to the Airspace Management Cell (AMC) and the EUROCONTROL/NM Centralised Airspace Data Function (CADF) personnel to help them perform their daily tasks and to prepare and release the consolidated European Airspace Use Plan (EAUP) and European Updated Airspace Use Plan(s) (EUUP(s) daily.	
Network Operations Flight Efficiency User's Manual	The purpose of this document is to frame the support of the flight efficiency initiative within the NMOC such as support to flight plan originator to improve their flight planning, support to major airspace design project etc. This document contains also all procedures applicable for Flight Efficiency support. Correct and accurate application of the procedures contained in this document is essential to the achievement of consistent support to the flight plan originators.	
CHMI ASM Function Reference Guide	User guide for the ASM users of the CHMI	

NOP Portal User's Manual	Reference source for using the NOP Portal
CCAMS User's Manual	Frames the support of the CCAMS operations and explains all procedures applicable for CCAMS operations
NMIR User's Guide	This document contains information for new users, the list of NMIR dashboards, their contents in term of available reports and the mapping between the migrated previous NMIR reports and the NMIR dashboards (Annex 1). The process to access the NMIR is also detailed.

NM B2B Documents	
NM B2B Technical Resources	Folder of various technical documents related to the NM B2B, most importantly the NM B2B Reference Manuals and Release Notes, for the currently supported NM B2B versions.
NM B2B Write Access Criteria	Contains the criteria specified for each NM B2B WRITE Service to be fulfilled and followed during the operational validation, prior to enabling and agreeing that an NM B2B client to use that NM B2B WRITE service in NM operations.

### **Other Documents**

Network Operations Library A collection of EUROCONTROL/NM documents related to Network operations and operations planning

## **7 ABBREVIATIONS**

AB	AirBlock
ACA	AUP/UUP Compilation(/Composition) Application
ACC	Approach Control Centre or Area Control Centre
ACC3	Air Cargo or Mail Carrier operating into the Union from a Third Country Airport
A-CDM	Airport-Collaborative Decision Making
ACH	ATC flight plan Change
ACK	IFPS Acknowledgement Message
AD	Airspace Data
ADES	Aerodrome of Destination
ADEXP	ATS Data Exchange Presentation
A-DPI	Airport-Departure Planning Information
ADS	Automatic Dependent Surveillance
ADS	NM Airspace Data Section
ADS	Airspace Data Service
ADS-B	Automatic Dependent Surveillance - Broadcast
AFP	ATC Flight Plan
AFTN	Aeronautical Fixed Telecommunication Network
AFUA	Advanced Flexible Use of Airspace
AIP	Aeronautical Information Publication
AIRAC	Aeronautical Information, Regulation and Control
AIS	Aeronautical Information Services
AIXM	Aeronautical Information Exchange Model
AMA	AMC Manageable Area
AMAN	Arrival Manager
AMC	Airspace Management Cell
ANI	Advanced Network Integrated (ANI) airports
ANSP	Air Navigation Service Provider
AO	Aircraft Operator
Aol	Area of Interest
AOP	Airport Operations Plan
AoR	Area of Responsibility
AOWIR	Aircraft Operator What-if Reroute
API	Arrival Planning Information
APL	ATC Flight Plan
APOC	Airport Operations Centre
APP	Approach Control
APR	Aircraft (Operator) Position Report
ARO	Air Traffic Services Reporting Office
ARR	Arrival Message
ASM	Airspace Management
ASMSG	Airspace Management Sub-Group
ATC	Air Traffic Control
ATFCM	Air Traffic Flow and Capacity Management
ATFM	Air Traffic Flow Management

ATM	Air Traffic Management
ATS	Air Traffic Services
AU	Airspace User
AUA	ATC Unit Airspace
AUAD	AUA Delegation
AUAG	ATC Units Airspaces Group
AUP	Airspace Use Plan
B2B	Business-to-Business
B2C	Business-to-Consumer
BADA	Base of Aircraft Data
C&T	Corrections and Tuning
CAA	Civil Aviation Authority
CACD	Central Airspace and Capacity Database (new name of ENV)
CADF	ECAC Centralized Airspace Data Function
CAP	Collaborative Advance Planning (DSNA tool)
CASA	Computer Assisted Slot Allocation
CASTAR	Computer Aided Synchronization Tool for Airspace Repositories
CCAMS	Centralised SSR Code Allocation and Management
CDM	Collaborative Decision Making
C-DPI	Cancel-Departure Planning Information
CDR	Conditional Route
CE	Change and Enhancement - or Central Europe
CfC	Closed for Cruising
CFSP	Computerised flight plan service provider
CHG	Modification Message
CHMI	Collaboration Human Machine Interface
CIAM	Collaboration Interface for AMCs
CIAO	Collaboration Interface for AO
CIFLO	Collaboration Interface for Flow management position
CITO	Collaboration Interface for Tower
CNL	Cancellation Message
CNS	Communications, Navigation, Surveillance
COM	Communication
COM	Committee of Management
CP1	Common Project One
CPA	Collaboration Portal Application
CPR	Correlated Position Report
CR	Change Request
CS	Combined Sector
CSST	Call-Sign Similarities Tool
CTFM	Current Tactical Flight Model
CTM	Cooperative Traffic Management
СТО	Calculated Time Over
СТОТ	Calculated Take-Off Time
CTA	Control Area
CTR	Control Zone

DAC	Dynamic Airspace Configuration
DCB	Demand and Capacity Balancing
DCT	Direct
DEP	Departure message
DES	De-Suspension Message
DLA	Delay or Delay Message
DLE	Delay or holding on route
DPI	Departure Planning Information
DSNA	Direction des Services de Navigation Aérienne
DSU	Division Support Unit
DWH	Data Warehouse system
EAD	European AIS Database
EAIMS	European ATM Information Management Service
EASA	European Union Aviation Safety Agency
EAUP	European Airspace Use Plan
EC	European Commission
ECAC	European Civil Aviation Conference
EDDP	Leipzig Halle Airport
EET	Estimated Elapsed Time
EFD	ETFMS Flight Data
eFPL	FF-ICE flight plan
EHMI	ETFMS HMI
EIBT	Estimated In-Block Time
ENV	NM Environment System (former name of CACD)
ENVCOOR	National Environment Coordinator
EOBT	Estimated Off Block Time
ERNIP	European Route Network Improvement Plan
ERR	Error Message
ES	Elementary Sector
ESP	Elementary Sector Part
eSS	Enhanced Slot Swapping
ETFMS	Enhanced Tactical Flow Management System
EU	European Union
EUROCONTROL	European Organization for the Safety of Air Navigation
EUUP	European Update airspace Use Plan
FAAS	Flight Assessment and Alert System
FAB	Functional Airspace Block
FAM	Flight Activation Monitoring
FB	Functional Block
FCM	Flight Confirmation Message
FEI	Flight Efficiency Initiative
FF-ICE	Flight and Flow Information for a Collaborative Environment
FIXM	Flight Information Exchange Model
FL	Flight Level
FLS	Flight Suspension Message
FMP	Flow Management Position

FPFDE	Flight Plan and Flight Data Evolution
FPL	Flight Plan message (ICAO format)
FPP	Flight Plan Processing
FRA	Free Route Airspace
FSA	First System Activation message
FSPD	Flight Specific Performance Data
FTFM	Filed Tactical Flight Model
FUA	Flexible Use of Airspace
GAT	General Air Traffic
GRRT	Group Re-Routing Tool
GUFI	Globally Unique Flight Identifier
HMI	Human-Machine Interface
12	Incident Type 2
IAF	Initial Approach Fix
IAP	Instrument Approach Procedure
IATA	International Air Transport Association
ICAO	International Civil Aviation Organization
ID	Identifier
iDAP	integrated Digital ATFCM Platform
IDLA	Individual Delay (message)
IFPS	Integrated Initial Flight Plan Processing System
IFPUV	IFPS Unit for Validation
IFPZ	IFPS Zone
IFR	Instrument Flight Rules
iOAT	improved OAT
IR	Implementing Rule
KPI	Key Performance Indicator
M&R	Monitoring and Reporting
MCDM	Measure Collaborative Decision Making
MIN	Minimum
MoC	Memorandum of Cooperation
MSG	Message
MTTT	Minimum Turn-Round Time
MV	Monitoring Value
N/A	Not Applicable
NAM	Non AMC manageable Area
NATS	National Air Traffic Services (UK)
NAV	Navigation
NCAP	Network Collaborative Advance Planning (DSNA tool)
NCO	n-CONECT
n-CONECT	network-COmmoN Enhanced Collaborative ATM
NIA	Network Impact Assessment
NID	Network Impact Display
NM	Nautical Mile
NM	Network Manager
NMD	Network Management Directorate

NMIR	NM Interactive Reporting
NMOC	Network Manager Operations Centre
NMP	NM Portal
NMVP	Network Manager Validation Platform
NOP	Network Operations Plan
NOP	Network Operations Portal
NOTAM	Notice to Airmen
NPP	Network Performance Plan
NPZ	No Planning Zone
NRC	National RAD Coordinator
NSP	Network Strategy Plan
OAI	Target Time-Over Arrival Planning Information
OAR	ATFM Rerouting
OAT	Operational Air Traffic
ODSG	Operations and Development Sub-Group
OPP	Opportunity
OPS	Operations
OPT	Operational Testing
ORGN	Originator
OS	Operating System
OTMV	Occupancy Traffic Monitoring Values
P/S	NM B2B Publish/Subscribe
PC	Provisional Council
PCP	Pilot Common Project
PDI	Predicted Departure Planning Information
P-DPI	Predicted DPI
PFD	Predicted Flight Data
PMS	Point Merge System
PREDICT	Variant of TACT used for Pre-Tactical Work
PSFD	Publish/Subscribe Flight Data (NM B2B)
PTR	Profile Tuning Restriction
R	Restricted Area
R	Right
R&D	Research and Development
R/R	NM B2B Request/Reply
RAD	Route Availability Document
REA	Ready Message
RFI	Ready For Improvement Message
RFR	Re-route after reroute cancellation
RJT	Rerouteing Rejection message
RL	Reference Location
RP3	Reference Period 3
RP4	Reference Period 4
RQS	Requested Supplementary Information Message
RRM	Rerouting Proposal Creation
RRN	Rerouting Notification Message

RRP	Rerouting Proposal Message
RSA	Restricted Airspace
RSI	CASA Revoke slot proposal
RTFM	Regulated Tactical Flight Model (by ATFM Measures)
RWY	Runway
SAFA	Safety Assessment of Foreign Aircraft (Programme)
SAM	Slot Allocation Message
SB	Study Block
SCC	Single CDR Category
SCR	Single Constrained Route
SES	Single European Sky
SESAR	Single European Sky ATM Research
SIBT	Scheduled In-Block Time
SID	Standard Instrument Departure
SIP	Slot Improvement Proposal Message
SITA	Société Internationale de Télécommunications Aéronautiques
SLC	Slot Cancellation message
SMM	Slot Missed Message
SO	Strategic Objective
SOBT	Scheduled Off-Block Time
SPA	Slot Improvement Proposal Acceptance Message
SRC	Safety Regulation Commission
SRJ	Slot Proposal Rejection message
SRM	Slot Revision Message
SSP	CASA STAM Proposal
SSR	Secondary Surveillance Radar
STA	Sharp Turn Angle
STAM	Short-Term ATFCM Measures
STAR	Standard Terminal Arrival
SWIM	System-Wide Information Management
SWM	SIP Wanted Message
TACT	Tactical System (predecessor of ETFMS)
TAI	Target Take-Off Arrival Planning Information
TB	Technical Block
TBD	To Be Determined, To Be Defined
TCF	Transponder Code Function
TLP	Traffic Light Protocol
TMA	Terminal Control Area
TOBT	Target Off Block Time
TP	Terminal Procedure
TP	Transport Protocol
TP	Trajectory Prediction
TSAT	Target Start-up Approval Time
TTL	Technical Team Leader
TTL	Time Table List
TTOT	Target Take Off Time
1101	Target Take Off Tillie

TV	Traffic Volume
TWR	Aerodrome Control Tower
UCD	Update MCDM Data
URL	Uniform Resource Locator
UTC	Coordinated Universal Time
UUP	Updated Airspace Use Plan
VFR	Visual Flight Rules
WG	Working Group
WKTRC	Wake Turbulence Category
WTC	Wake Turbulence Category
XCD	eXtended Conditions
YY	YoYo (as in YoYo flight)



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