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# ATFCM OPERATIONS MANUAL

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## Edition Change Record

Section	Amendment notes
1. INTRODUCTION	
2. ATFCM OVERVIEW	2.3. state name changed to Republic of North Macedonia; 2.5. daily D-1 briefing e-conference is removed
3. PARTNERS	
4. STRATEGIC PHASE OF OPERATIONS	4. and 4.4.: reference to a renamed document updated to "Provision of CACD Data"
5. PRE-TACTICAL AND TACTICAL PHASES OF OPERATIONS	5.1.1. automatic AIM for TaxiTime update is removed; 5.5.2. D-1 briefing e-conference is removed; 5.6.2. Regulation measure removed from examples of measures that can be used in combination with MCP Regulations; 5.7.1.2. updated cases of flight deactivation of terminated flights and added automatic deactivation by the C-DPI UNDOADPI; 5.7.1.4. added that request for exclusion from regulation can be also made via E-Helpdesk or B2B; 5.7.2.4. section renamed to CTOT improvement management, request conditions clarified for FMP/TWR, added remark that request can be made also via the E-Helpdesk or B2B, NM request evaluation precised; 5.7.2.5. section split in 3 parts for clarity, request conditions clarified for each originator, added remark that request can be made also via the E-Helpdesk, request evaluation conditions moved to NM tasks part, NM tasks in case of request refusal clarified and introduced possibility to send the next available CTOT; 5.7.2.8. inclusion of automatic de-suspension of a manually suspended 'V' flight; 5.7.4. added TWRUPDATE A-DPI possible after FLS; 5.8. and 5.8.1. opening of the E-Helpdesk to FMPs and TWRs; Former 5.9.7. Dynamic capacity management for Geneva ACC sectors – obsolete local procedure is removed; 5.9.7.1. updated standard capacity of GCCINB to 35; 5.9.8. change in main demand peaks for LEIB arrivals and increase in global capacity values; 5.9.11. inserted new local procedure Manual suspension for traffic to/from Nice airport (LFMN) and Lyon airport (LFLL)
6. PROCEDURES IN UNUSUAL CIRCUMSTANCES	
7. POST OPERATIONS PHASE	7.1. precision of Post Ops team tasks - inclusion of daily briefing between DOM and Post Ops and assistance with the Performance Adjustment Process; 7.2. precision of the feedback provided by operational staff and Post Ops follow-up actions; 7.5. inclusion of Post Ops support to the Performance Adjustment Process
8. COMMUNICATION / CDM PROCESSES	8.3.1. daily D-1 briefing e-conference is removed and attendance to FAA conference open to both NM tactical and/or pre-tactical teams
9. ATFCM CONTINGENCY OPERATIONS	
10. DEFINITIONS	
11. DICTIONARY OF ABBREVIATIONS	
12. CONTACTS	12. opening of the E-Helpdesk to FMPs and TWRs
13. ANNEX A – FLIGHT DATA	13.5. change of FAM parameter from 25 to 20 minutes, FAM explanation improved

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Section	Amendment notes
14. ANNEX B – AIRPORT CDM (A-CDM)	14.5.1. editorial corrections; 14.5.2. change of FAM parameter from 25 to 20 minutes, addition of new A-DPI TWRUPDATE type, removal of tac activation by T-DPI-s; 14.5.5. removal of tac activation by T-DPI-s
15. ANNEX C – SLOT ALLOCATION PROCESS	
16. ANNEX D – TRAFFIC VOLUMES	16.4.5. Skip In and Skip Out parameter added on Traffic Volume
17. ANNEX E – COUNTS	17.5 removal of tac activation by T-DPI-s
18. ANNEX F – ASM – ATFCM PROCESS	18.5.2. alignment of EAUP issue time
19. ANNEX G – RAD	19.2. note on RAD structure simplified
20. ANNEX H – REGULATORY REPORTING PROCESS	
21. ANNEX I – ACC CONTINGENCY PLAN FORM	
22. ANNEX J – ATFCM MESSAGE TYPES	

Amendments to the ATFCM Operations Manual are indicated in **RED** with revision bars.

Significant deletions of text are indicated with the symbol ✂

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## 1. INTRODUCTION

### 1.1. PURPOSE

The ATFCM Operations Manual is 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**).

### 1.2. SCOPE

The ATFCM Operations Manual is designed to provide guidance and procedures for all EUROCONTROL NM and FMP staff involved in the delivery of ATFCM services.

### 1.3. INTENDED AUDIENCE

The ATFCM Operations Manual is intended for all EUROCONTROL NM and FMP staff involved in operational air traffic flow and capacity management.

### 1.4. STRUCTURE

The ATFCM Operations Manual is made up of 14 chapters and 9 annexes.

### 1.5. INTERPRETATION OF WORDS

To ensure a common understanding of meaning of words in this document, the following shall apply:

- **'Shall'**, **'is to'**, **'are to'**, and **'must'** mean that the instruction is mandatory.
- **'Will'** is only used for informative or descriptive writing, e.g. 'AOs will file .....' is not an instruction.
- **'Should'** means that it is strongly advisable that an instruction is carried out; it is recommended or discretionary. It is applied where the more positive 'shall' is unreasonable but nevertheless a controller would have to have a good reason for not doing so.
- **'May'** means that the instruction is permissive, optional or alternative, e.g. 'a controller may seek assistance ...' but would not if he / she did not need it.

### 1.6. PROCEDURES

Within this manual, the procedures covering the operational execution of ATFCM are, as far as possible, presented in boxed text to aid operational staff to quickly and easily identify them.

### 1.7. EXCEPTIONS FOR FMPS

Special agreements regarding ATFCM procedures between the NM and certain FMPs may exist in Annex 2 of the concerned NM Agreement; where such exist, they may allow exemptions from the relevant procedures detailed in this manual.

### 1.8. VALIDITY

The application of this manual is in line with the operational implementation of the NM software releases, with edition numbering of the manual reflecting the relevant software release. Incremental numbering shall be used to indicate interim updates. This document shall not be used operationally before the date of the NM software release with which it corresponds.

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## 2. ATFCM OVERVIEW

Air Traffic Flow and Capacity Management (ATFCM) is one of the constituent parts of Air Traffic Management (ATM). The Network Manager Operations Centre (NMOC) provides an ATFCM service to airspace users throughout the European Civil Aviation Conference (ECAC) states. The NMOC is the successor of the Central Flow Management Unit (CFMU).

The International Civil Aviation Organisation (ICAO) defines ATM as:

- Airspace Management (ASM).
- Air Traffic Flow and Capacity Management (ATFCM).
- Air Traffic Control (ATC).

As with any other commodity, airspace is a valuable resource, particularly when subject to high demand. Since airspace is a fixed volume, ASM is a vital activity, involving the planning, sector definition, use and management of airspace to satisfy the needs of the users in the most efficient and equitable manner. However, economic activity and the surge in demand during certain periods, mean that the available air traffic control capacity needs a smoothing and protection mechanism to avoid overloads and to make the most efficient use of the airspace by providing dynamic flow management.

In this sense, ATFCM endeavours to make airspace and aerodrome capacity meet traffic demand and, when the latest capacity opportunities have been exhausted, make the demand meet the maximum available capacity. The latter part may result in flow measures which imply the allocation of individual aircraft departure times (slots), as appropriate, to combat bottlenecks and reduce safety risks as much as possible. Throughout all this activity, there is continuous communication and exchange of information with all the European air traffic control units and aircraft operators.

### 2.1. GOVERNING PRINCIPLES

ATFCM procedures, roles and responsibilities in this document have been established in line with:

- a) **ICAO** procedures as defined in the ICAO Doc. 4444, EUR SUPPs Doc 7030 and **ICAO** Doc. 7754, vol. II. These procedures are amended following the **ICAO** consultation process.
- b) Procedures specific to the ATFCM operations according to the policy and strategy developed and approved by the responsible EUROCONTROL bodies.
- c) **Commission Regulation** (EU) 677 / 2011 on ATM Network function (NM regulation), Article 15 – Detailed working arrangements and processes for operations.
- d) **Commission Regulation** (EU) 677 / 2011 on ATM Network function (NM regulation), Annex VI.4 Operations Manuals.
- e) **Commission Regulation** (EU) 255 / 2010 on air traffic flow management (ATFM regulation) relevant articles.

### 2.2. NETWORK MANAGER (NM) AGREEMENTS

EUROCONTROL concluded NM Agreements (previously known as Letters of Agreement or LoAs) with the operational stakeholders which address administrative, legal, technical and operational matters relating to the Network Manager services they subscribe to. The NM Agreements include annexes which contain references to the contact points and applicable documentation. There is one particular annex (Annex 2) detailing the operational arrangements for the specific ACC(s).



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## ATFCM OPERATIONS MANUAL

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### 2.3. AREAS COVERED

The NM Central Airspace and Capacity Database (**CACD**) covers several different geographical areas that have common and uncommon elements.

The Flight Plan Message (FPM) Distribution Area (**FPM DIST**) is the area in which the IFPS is responsible for the distribution of flight plans and associated messages.

The ATFCM Area is the area in which the NM is responsible for the provision of ATFCM. It comprises the following states:

Albania, Armenia, Austria, Belgium, Bosnia and Herzegovina, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Georgia, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Moldova, Monaco, Montenegro, Morocco, the Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, the Republic of **North** Macedonia, Turkey, Ukraine and the United Kingdom of Great Britain and Northern Ireland.

Certain states are cooperating with the NM by exchanging data with the NM and participating in the NM ATFCM service. These States are described as cooperating States and the NM collectively refers them as the ATFCM Adjacent Area. The NM provides them with limited ATFCM services based on an NM Agreement which details the service level provision.

Additionally, the FMPs of these FIRs may request to apply ATFCM measures for the airports within the FIR or for significant points at the interface between the FIR and the ATFCM Area.

The NM may apply ATFCM measures to flights which:

- Depart from within the ATFCM area.
- Enter the ATFCM area after departing from an adjacent Flight Information Region (**FIR**) within the ATFCM Adjacent Area.

The latest update of the list of adjacent FIRs may be found on the website:

[http://www.nm.eurocontrol.int/STATIC/NM\\_AREA/](http://www.nm.eurocontrol.int/STATIC/NM_AREA/)

### 2.4. ATFCM PHASES

The ATFCM provision in the ECAC region is carried out in four phases:

**Strategic flow management** takes place **seven days or more prior to the day of operations** and includes research, planning and coordination activities through a Collaborative Decision Making (CDM) process. This phase comprises a continuous data collection with a review of procedures and measures directed towards an early identification of major demand / capacity imbalances (such as: axis management, air shows, major sport events, military exercises, etc.). When imbalances are identified, the NM is responsible for the overall coordination and execution of strategic ATFCM planning to optimise all available capacity and achieve performance targets. The output of this phase is the Network Operations Plan (NOP).

**Pre-tactical flow management** is applied during the **six days prior to the day of operations** and consists of planning and coordination activities. This phase studies the demand for the day of the operation, compares it with the predicted available capacity on that day, and makes any necessary adjustments to the plan that was developed during the Strategic phase. The main objective of the pre-tactical phase is to optimise efficiency and balance demand and capacity through an effective organisation of resources (e.g., sector configuration management, use of scenarios, etc.) and the implementation of a wide range of appropriate ATFCM measures. The work methodology is based on a CDM process between the stakeholders (e.g. the NM, FMPs, AOs). The output is the ATFCM Daily Plan (ADP) published via ATFCM Notification Message (ANM) / Initial Network Plan (INP) and via the NOP portal.

**Tactical flow management** takes place **on the day of operations** and involves considering, in real time, those events that affect the ADP and making the necessary modifications to it. This phase is aimed at ensuring that the measures taken during the strategic and pre-tactical phases are the minimum required to solve the demand / capacity imbalances. The need to adjust the original plan may result from disturbances such as staffing problems, significant meteorological phenomena, crises and special events, unexpected limitations related to ground or air

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# ATFCM OPERATIONS MANUAL

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infrastructure, etc. and taking advantage of any opportunities that may arise. The provision of accurate information is of vital importance in this phase, since it permits short-term forecasts, including the impact of any event and maximises the existing capacity without jeopardising safety.

**Post operational analysis** is the final step in the ATFCM planning and management process and takes place **following the tactical phase of operations**. During the post operations analysis phase, an analytical process is carried out that measures, investigates and reports on operational processes and activities throughout all domains and external units relevant to an ATFCM service. All stakeholders within the ATFCM service should provide feedback on the efficiency of the ADP (ATFM measures and delays, the use of predefined scenarios, etc.), flight planning and airspace data issues. This phase compares the anticipated outcome (where assessed) with the actual measured outcome, generally in terms of delay and route extension, while taking into account performance targets. The final result of this phase is the development of best practices and / or lessons learnt for improving upon those operational processes and activities.

## 2.5. COLLABORATIVE DECISION MAKING (CDM)

Collaborative Decision Making is a process which allows decisions to be taken by those best positioned to make them on the basis of the most comprehensive, up-to-date accurate information and ensuring that all concerned stakeholders are given the opportunity to influence the decision. This enables decisions agreed collaboratively to reach performance objectives and enable particular flights to be dynamically optimised to reflect near or real-time events.

A decision to implement and execute ATFCM measures within the Area of Responsibility (AoR) of an FMP shall normally be preceded by a CDM process. This process provides the various organisations with the opportunity to update each other continuously on events from the strategic level to the real-time in a timely and accurate manner. To be efficient and reach the required objectives, CDM must be:

- an **inclusive** process;
- a **transparent** process;
- a process that **builds trust** between the parties involved.

The organisation and structure of the ATFCM CDM process has been designed to ensure that the affected stakeholders, service providers and airspace users alike, can discuss airspace, capacity / demand and flight efficiency issues through regular sessions and formulate plans that consider all pertinent aspects and points of view. The discussions occurring during the CDM activities shall lead to a consensus view and solution implying an official commitment of each participant.

In the Strategic phase the focus is made on analysing major and significant events as well as anticipated capacity shortfalls for individual ACCs / airports. The result is a set of agreed ATFCM measures / solutions to be considered for implementation in the pre-tactical and tactical phases. Conferences and briefings take place in advance to consider these ATFCM events (e.g. axis conferences) following the CDM process.

ATFCM measures considered in pre-tactical / tactical phases could be extracted from pre-agreed strategic ATFCM measures or envisaged as ad-hoc measures to respond to a new situation triggered by a change either in traffic demand or ATC system capacity. The CDM process occurs daily and may be scheduled more frequently depending on the traffic and capacity situation. The output of these daily conferences is the ATFCM daily plan (ADP).

The ADP is then constantly updated during the day of operations through further CDM processes. Tactical briefings and conferences are scheduled depending on the traffic patterns and their intensity applicable to the area.

Participants should include involved **NM staff**, **ANSPs** (FMP and ATS units), **AOs** (chief or senior dispatchers and the AO Liaison Cell), affected **military authorities** and **airport authorities**, as applicable.

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When, despite all attempts, an agreement cannot be reached, the implementation of a specific regulation shall ultimately be the responsibility of the FMP, however a monitoring and eventual escalation process to higher management should be envisaged if such a situation endures.

Whereas the final decision on the regulation implementation is for the FMP, the details on the regulation itself should be coordinated with the NM except if otherwise specified through particular instruction.

The implementation of a Network measure (e.g. level capping, rerouteing) affecting the area of responsibility of **multiple FMPs** remains the responsibility of the NM who shall ensure the Network benefit through the CDM process.

Measures within the area of responsibility of an **individual FMP** remain the responsibility of that FMP. In such cases, the NM should be informed.

### 2.6. ATFCM SOLUTIONS TO CAPACITY SHORTFALLS

Following the SES concept of Collaborative Decision Making (CDM), the NM shall consider continuously and pro-actively all possible ATFCM solutions through a continual and seamless process as from the strategic planning until the execution of operations.

The anticipation of any event according to new information allows to minimise its impact on the Network or to take benefit of any opportunity and fine tune the plan accordingly.

To resolve capacity shortfalls and improve the management of the Network capacity whilst minimising constraints, the following ATFCM solutions have to be considered, as depicted in the figure following below. These solutions will have to be thoroughly evaluated before a decision to implement them could be taken.

Where overloads are detected and the CDM process is initiated, different ATFCM solutions should be considered between the NM and the respective FMP(s). A general description of the steps to provide those solutions can be found below:

- Optimise the utilisation of available capacity.

A number of solutions are considered that should result in maximising capacity in line with profile of traffic demand.

- Sector management.
  - Sector configuration.
  - Number of sectors.
  - Collapsing / splitting sectors.
- Balancing arrival / departure capacity.
- Flight list assessment (flights of minor workload).
- Negotiate extra capacity.
  - Monitoring values.
  - Occupancy counts.
- ATFCM / ASM (civil / military coordination).
- Reduce traffic complexity.
- Holding pattern.

And / or

- Utilise other available capacities.

Encompasses ATFCM solutions that aim to shift traffic demand into areas where capacity is available.

- Rerouteing.
  - Flows.

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Flights.

- FL management.
- Advancing traffic.
- FMP tactical ATFCM measures.

FMP FL management.

FMP rerouteing.

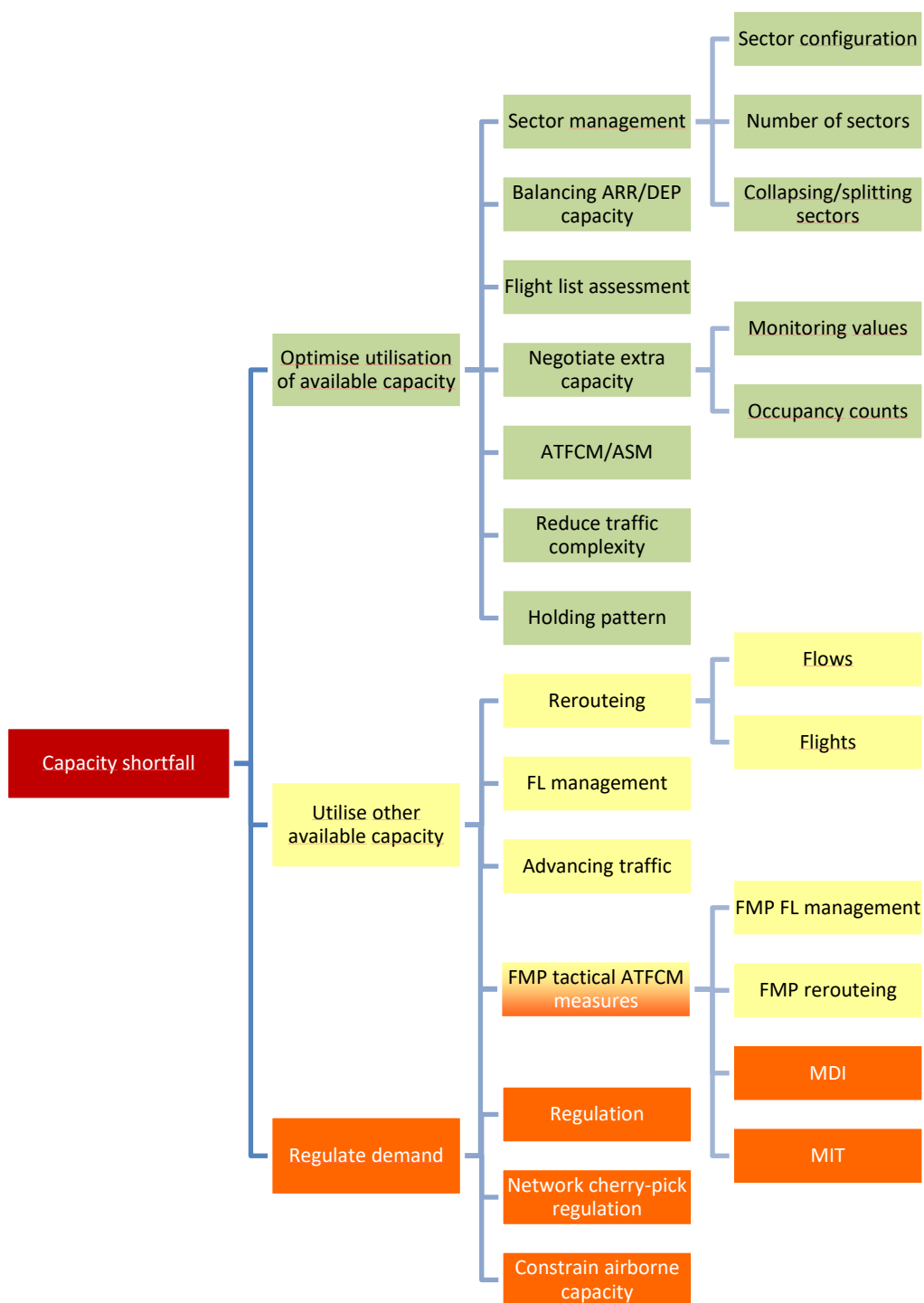
And / or

- Regulate the demand.

Constraints will be imposed to traffic by the solutions set out under the heading. It consists of real-time optimisation of capacity / demand across Europe, and delay management where aircraft are affected by a regulation in order to offer alternatives and minimise delay. Flights taking place on that day receive the benefit of ATFCM, which includes the allocation of individual aircraft departure times, rerouteings to avoid bottlenecks and alternative flight profiles to maximise efficiency.

- Regulation.
- Network cherry-pick regulation.
- FMP tactical ATFCM measures.
  - Minimum Departure Intervals (MDIs).
  - Miles in Trail (MIT).
- Constrain airborne capacity.

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ATFCM Solutions to capacity shortfalls

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## ATFCM OPERATIONS MANUAL

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### 2.7. NM ATFCM SYSTEMS

The Flow and Capacity Management systems are at the heart of the Air Traffic Flow and Capacity Management (ATFCM) services provided by the Network Manager. Their purpose is to provide information about current and anticipated air traffic demand and capacity in the European airspace and to provide tools to support planning, execution and monitoring of ATFCM measures.

The Flow and Capacity Management systems receive data from the flight plan processing systems:

- **Integrated Initial Flight Plan Processing System (IFPS)** and
- **Repetitive Flight Plan (RPL)**,

and the **Central Airspace and Capacity Database system (CACD)**, as well as live **ATC data** from the Air Navigation Service Providers (ANSP), **AO Position Reports (APRs) messages** and **meteorological (MET) data** from a meteorological service provider.

The Flow and Capacity Management systems archive information into the Historical Information Management systems, the **Data Warehouse (DWH)**.

The Flow and Capacity Management systems include the following:

The **Enhanced Tactical Flow Management System (ETFMS)** compares traffic demand, regulated demand and load against capacity to assess possible imbalances in the European airspace and allows the implementation of measures to resolve these imbalances in the traffic, such as regulations or rerouteing.

The **PREDICT** system compares forecasted traffic and capacity to evaluate the load situation for the following days (up to 6 days in advance). ATFCM measures may be implemented in this system in order to assess their impact before being applied in ETFMS. It uses the Demand Data Repository (DDR) to enrich historical data with expected demand.

The simulation tool, **SIMulation and EXperiment (SIMEX)**, is used in strategic, pre-tactical and tactical ATFCM operations. It enables Network Operations staff to simulate ATFCM measures or restrictions before applying them to the previous systems.

A functionality called **OPTI-mise CON-figuration (OPTICON)** helps in the choice of sector configuration and to enable better assessment of impact of the change of configuration. OPTICON functionality is provided by PREDICT, the ETFMS and SIMEX as well.

The **Data Distribution System (DDS)** is used to distribute real-time ETFMS flight data (EFD) to NM operational stakeholders concerned as significant flight data updates occur in the ETFMS. DDS functionality is provided by the ETFMS.

The **Network Operations Plan (NOP) Portal** is an interface that provides a consolidated view of the different aspects of the NOP and gives access to a set of services to support the NOP preparation and dissemination activities.

It is a Web application that provides secured access to, and interaction with, relevant NM information / content, applications and business processes and resources for selected targeted audiences, delivered in a personalised manner (including customisation).

The public version of the NOP contains information to assist parties involved in ATM operations. However, some elements which are subject to a service agreement are only accessible from the Protected NOP.

Having access to the up-to-date information of the Network situation allows the different actors to more dynamically plan and manage the Network.

The **Collaboration Human Machine Interface (CHMI)** is a standalone application which provides an interface for the Network Operations systems allowing users to display data (such as information on regulations, flight lists, etc.) and graphical information (such as routes, route attributes, airspaces, flight plan tracks, etc.) via map displays. This real time information enables Collaborative Decision Making (CDM) between all partners.

To accommodate most operational stakeholders' needs, several customised CHMI products have been developed:

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- [CIAO](#): CHMI for Aircraft Operators.
- [CIFLO](#): CHMI for Flow Management Positions – to allow FMPs to access ETFMS, PREDICT, SIMEX, CACD and DWH data.
- CIREN: CHMI for Environment Coordinators Collaboration – to allow environment coordinators from each country to access pre-validation information prior to the AIRAC data release date.
- [CITO](#): CHMI for Airport Towers.
- [CIAM](#): CHMI for Airspace Management Cells.

The [NM B2B](#) is an interface provided by EUROCONTROL for accessing its services and sharing information. The NM B2B provides access to both data and services via a system-to-system interface over the internet, allowing NM customers to exploit and use the EUROCONTROL information in their own systems, according to their business needs.

This interoperability with EUROCONTROL's partners is vital in order to ensure fast and efficient data sharing across the 'ATM value chain' and more dynamic operations, as specified in the Network Operations Plan.



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**3. PARTNERS****3.1. FLOW MANAGEMENT POSITION (FMP)****3.1.1. General Duties**

The FMP's role is, in partnership with the NM, to act in such a manner so as to provide the most effective **ATFCM** service to **ATC** and **AOs**.

An FMP is responsible for ensuring the local promulgation, by the appropriate means (national NOTAM, AIP, ATM operational instruction, etc.) of procedures which affect ATC Units or operators within the FMP's area. FMPs shall monitor the effectiveness of such procedures.

Whatever the organisation, the ANSP responsible for the FMP(s) within a State is responsible for establishing local procedures, ensuring the NM is in possession of all relevant data during each ATFCM phase and for checking the accuracy of that data.

Each FMP area of responsibility is normally limited to the area for which the parent ACC is responsible including the area(s) of responsibility of associated Air Traffic Services (ATS) units as defined in the NM Agreement. However, depending on the internal organisation within a State, some FMPs may cover the area of responsibility of several ACCs, either for all ATFCM phases or only for part of them.

All FMPs within the NM area have equal status. The size of individual FMPs will vary according to the demands and complexities of the area served.

The FMP shall ensure that, as detailed below, the NM has all relevant data to enable it to carry out its responsibilities in all phases of the ATFCM operations. The FMP shall provide the NM with data and changes thereto as follows:

- Sector configurations and activations (pre-tactical and tactical phases).
- Monitoring values (pre-tactical and tactical phases).
- Traffic volumes (always).
- Flows to be associated to a reference location (always).
- Taxi times and runway configurations (pre-tactical and tactical phases).
- Monitoring values of aerodromes / sets of aerodromes / points (pre-tactical and tactical phases).
- Details or events or information that will have an impact on capacity at an aerodrome or ACC (always)
- Feedback on new or trial procedures (post operations phase).

The FMP shall provide the NM with 'local knowledge', including any data or information which could be considered as necessary or useful in the effective and efficient execution of the ATFCM task. The NM shall advise the FMP of any events or information which will or may affect the service provided by its parent ACC(s).

The FMP shall be the local ATFCM partner for the ACC(s), other ATS units (military and civil) within the FMP area of responsibility and local Aircraft Operators.

The NM and the FMP are jointly responsible for providing advice and information to ATC as may be required, and to Aircraft Operators as defined in the NM Agreement.

Nevertheless, from a practical point of view, the FMP will be the focal point for ATFCM matters within its area and (depending on the local organisation) is likely to take the lead in advising, educating and assisting other ATS Units (ATSUs) and, where possible, Aircraft Operators within that area.

The FMP task covers 24 hours and shall be carried out by staff who are adequately trained and competent. In the event that an ACC is unable to provide the agreed staffing for a particular period or duty, the NM is to be advised and alternative arrangements agreed.



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**3.1.2. FMP Manager**

Every ACC in the NM area shall have a person designated as being charged with responsibility for all ATFCM activities in the ACC and within its area of responsibility. This person, known as the FMP Manager, shall act as the focal point for administrative and organisational matters in dealings with the NM. An FMP Manager may be responsible for several ACCs.

The FMP Manager shall be required to meet the following criteria:

- a) Have extensive knowledge of the overall ATM operations in the area of responsibility of the ACC(s).
- b) Have an extensive understanding of the ATM operations in adjacent ACCs.
- c) Have a comprehensive knowledge of the NM organisation and its systems.
- d) Have undergone appropriate ATFCM training.
- e) Have an extensive understanding of the factors influencing aircraft operations in so far as they may affect ATFCM.

The FMP manager role may be in addition to other tasks carried out by the individual depending on local arrangements.

**3.1.3. FMP Controller**

Operational duties carried out by an FMP will be the responsibility of an FMP controller. The dedicated Flow Management Position will be staffed by an FMP controller who may rotate with others from other duties or may be employed as a permanent FMP controller depending on local arrangements.

An FMP controller shall be required to meet the requirements of ESARR5 and:

- a) Have extensive knowledge of the overall ATC / ATFCM operations in the area of responsibility of the ACC(s).
- b) Should have, in accordance with local requirements, extensive ATC experience and have good knowledge and understanding of ATC matters in the area of responsibility of the ACC(s) in accordance with local requirements.
- c) Have an extensive understanding of ATC / ATFCM operations in adjacent ACCs.
- d) Have an extensive knowledge of the NM operations.
- e) Have undergone appropriate ATFCM training.

These requirements extend to any staff (e.g. ACC supervisors) who carry out the task of the FMP during less busy periods.

**3.2. NETWORK MANAGER OPERATIONS CENTRE (NMOC)**

The Network Manager Operations Centre primarily carries out three operational functions:

- Airspace Data Management.
- Flight Plan Processing.
- Air Traffic Flow and Capacity Management.

The nomination of ECTL as Network Manager resulted in the creation of the following profiles in order to ensure a seamless and proactive service provision driven by performance (capacity, environment /flight efficiency, safety and cost effectiveness) in the European Network.

**Operations Manager (NM OM)**

The Operations Manager (OM) is the Network Manager Operations Centre leader and is accountable for the specific performance targets on a daily basis. The OM is responsible for leading also projects that respond to the operational requirements of the **Operations Manager**.

The OM role is an H16 responsibility.

**Deputy Operations Manager (NM DOM)**

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The purpose of the job is to participate in the management and execution of the operational functions in order to ensure the network operations service delivery and deputise for the Operations Manager when required while respecting and promoting good safety practices.

DOMs shall adjust the staff assignment to reflect the current pre-tactical and tactical priorities.

The DOM role is an H24 responsibility.

### Senior Network Operations Coordinator (NM SNOC)

The purpose of the job is to develop, propose and dynamically coordinate an ATFCM Daily Plan, through a CDM process and tactical and pre-tactical ATFCM solutions for aircraft operators and Air Traffic Control Centres in order to optimise capacity and its utilisation within the European airspace while respecting and promoting good safety practices.

The SNOC role is an H16 responsibility.

### Network Operations Controller (NM NOC)

The purpose of the job is to optimise the available airspace capacity and its use for aircraft operators taking into account the restrictions and limitations required by ACCs and airports, while respecting and promoting good safety practices.

The NOC role is an H24 responsibility.

### Network Operations Officer (NM NOO) – ATFCM function

This job is meant to execute real-time operational functions within the ATFCM area of activity in accordance with defined processes, procedures and reporting requirements while respecting good safety practices.

### Network Operations Specialist (NM NOSP) – ATFCM function

This job is meant to assist the Senior Network Operations Coordinator in the day-to-day operations of the ATFCM Daily Plan.

### Aircraft Operator Liaison Officer (NM AOLO)

This job is meant to assist aircraft operators in optimising their use of available airspace capacity taking into account the restrictions and limitations required by ACCs and airports while respecting good safety practices taking account of natural hazards

### Military Liaison Officer (MILO)

A function has been created in the NMOC to enhance the coordination process between ATFCM and ASM actors and in particular between the civil and military partners. This function is provided by military ASM experts at the Military Liaison Officer position (MILO) in the NMOC, acting as part of the Network Operations Management function and working closely with the pre-tactical and tactical teams.

#### 3.2.1. NM pre-tactical team

The NM pre-tactical team is under the leadership of the Deputy Operations Manager in charge of managing the ATFCM Daily Plan during its preparation. The main duties include:

- ATFCM Daily Plan preparation.
- CDM activities (e.g. teleconferences).

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The NM pre-tactical team also participates in the NM activities in the Strategic phase by carrying out the coordination of specific projects related to special events or specific processes.

The NM pre-tactical team is formed by the pre-tactical Senior Network Operations Coordinator and the Network Operations Specialists on duty.

### 3.2.2. NM tactical team

The NM tactical team is under the leadership of the Deputy Operations Manager in charge of managing the ATFCM Daily Plan during the day of operation. Their main activities include:

- Execute the tactical flow management operational processes from a Network perspective.
- Monitor the load and developing of traffic situation.
- Monitor the effect of implemented measure(s) and take any corrective action, if required.
- Analyse delays in the slot list and try to resolve them in coordination with FMPs.
- Provide support, advice and information to FMPs and AOs as required.
- Notify FMPs of all operational problems that could affect the flow of traffic.
- Collect and collate data concerning ATFCM incidents.
- Provide feedback on operational issues for post operations and the pre-tactical team.
- Execute contingency procedures.

The tactical team is formed by the tactical Senior Network Operations Coordinator, the Network Operations Controllers, the Network Operations Officer and the Aircraft Operator Liaison Officer on duty.

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**4. STRATEGIC PHASE OF OPERATIONS**

The FMP shall provide the representation necessary at national and, if required, at international strategic planning meetings to ensure participation in the preparation of strategic ATFCM plans.

The FMP shall inform local AOs (according to the local organisation / procedure) of their role in providing advice and information by arranging for the relevant FMP telephone numbers to be published in the National AIP with a short description of the service provided and the type of query answered.

The FMP shall pass accurate and up-to-date information to the NM. They shall ensure all essential data required by the NM in the Strategic phase is passed in accordance with procedures detailed in a Supplement to the Network Operations Handbook 'PROVISION OF **CACD** DATA'.

Additionally, the FMP shall:

- Ensure that coordination procedures established between the FMP and the appropriate national authority are followed to ensure the FMP is kept informed of planned airspace or ATC organisational changes.
- Have access to advanced information on special events or military activity affecting their area.
- Be involved in discussions on the timing or implementation of airspace changes and other such activities.

**4.1. REPORTING OF EVENTS IMPACTING ATC / ATFCM**

Event information is required and provided to facilitate the planning and coordination of these events at Network and local level.

**4.1.1. Provision of information on events and long-term operational planning**

Information on events impacting capacity, efficiency or demand enables early identification of issues that may affect the capacity of the ATM Network as a whole, allowing the necessary ATFCM measures to be developed in due time.

The reporting channel to be used varies depending on the type of event, the location, or time when the event is reported.

The FMP will pass to the NM information useful to ATFCM strategic planning including:

- Monitoring values.
- Sector configurations.
- A list of aerodromes likely to require ATFCM measures in normal and unusual circumstances.
- Advanced warnings of changes to ATC procedures likely to affect traffic patterns (within or outside the FMP area) or have implications for ATFCM planning.
- Specific local knowledge (e.g. information on ATC operating methods or traffic handling problems in a particular ATC sector) that may need to be taken into account when planning ATFCM measures, etc.
- Advance information on all known problems likely to require ATFCM intervention as soon as possible after such information is available such as large sporting events, international conferences, military exercises, etc., likely to disrupt normal traffic patterns.
- Advance details of equipment or long-term staffing changes likely to affect capacity.
- Major changes to airspace organisation, ATC sectorisation, etc., entailing significant modifications to the environment.

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- ACC contingency plans.
- Long-term feedback on the effects of ATFCM measures.

## 4.1.2. Significant military events and exercises

Military exercises / activities requiring a special reservation / segregation of airspace may have significant impact on the available routes and capacity within the European ATM network.

However, by early notification of such events, advanced assessment of the likely impact, and collaborative planning to define the appropriate ATFCM measures, such events can be accommodated while minimising the effects on other airspace users.

As they are a major actor in the ATM environment, military authorities are requested to provide information on military exercises or major flight activities having an impact on the route Network structure and its best use. By this, the military community will further contribute to the overall ATM progress and at the same time benefit from the increased visibility given to the need of airspace for military operations.

National military representatives at the Military Harmonisation Group (MILHAG) have agreed to support the military participation in the NOP. Participating States nominated their point of contact responsible for the provision of required data. A central point of contact, responsible for the establishment and the management of data collection procedures and the coordination with the NOP management has been nominated within EUROCONTROL as a Military Liaison Officer (MILO).

## 4.1.3. Events at airports impacting capacity or demand

Events impacting air traffic control capacity or air traffic demand shall be notified by airport managing bodies either directly or through the local ATFM unit or ATS unit.

The Airport Corner, which is a EUROCONTROL internet-based tool, enables airport stakeholders to easily provide information at any time to better assess the ATC / ATFCM impact. This reporting channel supports a coordinated input between the local ANSP and the airport operator.

The Airport Corner covers a set of airport information relevant to the network as current and future airport capacities, local traffic forecasts, weather management info, local operational contacts as well as the 'planned events' impacting capacity, efficiency or demand.

## 4.2. CREATION OF THE EVENTS LIST

The events list is built up with information that is taken from / provided by different sources.

Provided by:

- NMOC / Operational planning (OPL)
- FMP
- CACD
- SESAR
- MILO
- Airport Unit
- ERNIP

Taken from:

- Public news sources
- NOP / European Route Network Improvement Plan (ERNIP)
- Airport Corner

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The aim of the events list is to provide a quick overview for users, on what is planned in the Network.

It contains a list of events / implementations / system updates etc. that may have an impact on the Network.

An isolated event might not have a big impact, but when a few events (including implementations of new system, airspace changes etc.) take place in adjacent FMPs at the same time, this could lead to a big impact on the Network (as the possibility exists that rerouting of traffic / on-loading of adjacent ACCs, etc. cannot be done).

It is set up per AIRAC Cycle, with main attention to the first coming 6 months, and published via the NOP Portal events calendar.

Some events require a modification of either static or dynamic data. For major events and military exercises a pre-validation of the data is recommended, which requires an availability of the data at least at AIRAC-56 days (2 AIRACs in advance). For more details please contact NM Strategic Operational Planning.

The list uses a colour coding to indicate difference between:

Pink:	Military exercises
Yellow:	Events (sport / political / art etc.)
White:	CACD implementations
Blue:	System changes / update / implementation
Grey:	Free Route Airspace
Violet:	Trials
Green:	Pre-validation
Orange:	Airport Based Events

### Procedure

The **NM Strategic staff** shall:

- Check all available sources of information to update the events list on a regular basis.
- At the AIRAC date or as soon as possible after, email the latest version of the events list to all concerned parties (only the external part of the document).
- Ensure that the list is available to the OM for the Friday afternoon tactical briefing to give a short overview of the upcoming events from the list.

The **FMP staff** shall:

- Where they receive the monthly email from NM Strategic, check and provide feedback on the list regarding the correctness and completeness.
- If a new event or update is required to the event list, email the details to the NM Strategic section.
- Provide a single point of contact responsible for the event.

The **involved NMOC staff** shall:

- Following each ENV Data Transfer Control Board (EDTCB) meeting email the minutes to the NM Strategic section, list of known pre-validations to be added after EDTCB\_0.
- On receipt of any information concerning a future event, pass the details to NM Strategic.

#### 4.2.1. Event planning process

The events list is the main database for coordinating and planning for future events and reviewed monthly to avoid missing something.

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## Procedure

The **FMP staff** shall:

- Provide via the single point of contact all the details regarding the event for Network impact assessment.
- Propose, consider, coordinate and approve mitigation measures relevant to their area of responsibility.

The **NM Strategic staff** shall:

- Carry out an impact assessment, when new event details received.
- Coordinate internally and identify the person responsible from NM Strategic for the event. If required, make request for operational staff support.
- Prepare mitigation measures if necessary.
- Ensure that all the required coordination has been carried out to cover all aspects of the event.
- With the help of the NMOC staff involved with the event, write and publish the information notice (IN) / operational instruction (OI) covering the event if required.

The **NM Post Operational staff** shall:

- If needed, perform post operational analysis of the events planning and operational implementation.

### 4.3. NOTIFICATION OF UPDATES TO CACD

Whatever the organisation, the ANSP overseeing the FMP(s) within a State is responsible for establishing local procedures, ensuring that the NM is in possession of all relevant data during each ATFCM phase, and the quality of that data. This is also stated in Commission (EU) regulation 255 / 2010 article 6.

This procedure is aimed to cover the non-temporary update of the following CACD data that requires an operational Network impact assessment, and its submission to the NM:

- Creation / modification / deletion of traffic volumes (TFVs) with IE or EM flows;
- TFVs for scenarios;
- Capacities;
- Monitoring values;
- Occupancy Traffic Monitoring Values (OTMV).

**Note:** A TFV may be modified or deleted only in accordance with AIRAC cycles. When a TFV is deleted from the database, it will be transferred to the TFV SET called 'BIN...' (the dots represent the number of the AIRAC cycle) where the deleted TFV will remain until the next AIRAC cycle.

All other requests that do not imply an operational Network impact assessment will be subject to a DMR and will be implemented in CACD by the NM AD section without prior coordination.

**Note:** For other CACD data check the '**Provision of CACD Data**' document in the Network Operations Handbook.

The receipt of the request will be confirmed by the NM normally within 48 hours via email. When the request has been actioned, a Data Modification Request (DMR) number will be allocated by Remedy and this number should be forwarded to the FMP concerned. The DMR number will allow the FMP to inquire about the status of the request.



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**Note:** Temporary updates to environmental parameters (for a specific time frame and day of operations) are covered by the procedure **Updating CACD data in PREDICT / ETFMS**.

The description of flows in a TFV is the responsibility of the NM based on the FMP request. The NM will not consider any TFV request containing flows with an exempted (EM) role for flights which do not meet the ATFM exemption rules as established by ICAO.

## Procedure

Where the CACD data in the above list needs to be modified,

the **FMP staff** shall:

- Using the appropriate form on the [Network Operations CACD data forms](#), send via email the relevant information to the NM AD Supervisor. The email address to be used in this case is [nm.ad.spvr@eurocontrol.int](mailto:nm.ad.spvr@eurocontrol.int).

The NM AD Supervisor will forward the request to the Pre-tactical SNOC if it requires an operational Network impact assessment. In such case,

the **Pre-tactical SNOC** shall:

- Assess any possible impact on the Network.
- Confirm the NM AD Supervisor via email the implementation of the request.
- As soon as a new or modified TFV is available in the CACD, carry out quality control to make sure, in cooperation with the NM AD Supervisor, that the traffic capture is fit for purpose, using PREDICT.
- In the event that the TFV does not perform as required, take appropriate corrective action.
- Update the FMP reference email folder with the requested documentation.

## 4.4. SIMULATIONS

The NM can run ATFCM simulations in order to evaluate a set of capacity constraints in terms of total delay generated, delay distribution and individual delay generated by each capacity constraint. Traffic demand may be modified by a traffic growth function or by means of rerouteing.

The results of the simulation may include:

- Rerouteing traffic flows and re-calculating loads.
- Overlaying and comparing load graphs on actions performed (i.e. before and after effect).
- Creating a regulation plan and analysing the delay distribution.
- Producing 'screenshot' images of simulations performed (i.e. traffic flows, load graphs, flight lists etc.).
- Comparing different sector configurations.

These simulations may also be conducted on request of the FMP. If too many simulations are requested at the same time, the NM will prioritise the requests and will advise the FMP.

Requests for simulations relative to major changes to airspace should be booked with the NM well in advance. To enable effective running of the simulation the FMP will ensure that the relevant environment data are provided to the NM as set out in the Network Operations Handbook '**Provision of CACD Data**'.

### 4.4.1. Simulation request

Strategic simulations cover the time period from D-7 until 3 years before the affected date.



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All requests for Strategic ATFCM simulations are centralised, and processed according to the procedure described below.

## Procedure

The **FMP staff** shall:

- Send all requests for strategic simulations to the NM Strategic section.
- Give at least 3 months' notice before the required deadline for large scale simulations.

The **NM Strategic staff** shall:

- Carry out an assessment of each request, including the scope of the simulation, which simulation tool to be used (NEST or SIMEX), and the time required to get the results.
- For simulations with SIMEX, check if operations staff may be rostered to cover the request. Add the request to the monthly OPL / Network Operations Services (NOS) / APT coordination meeting for discussion. If short notice request, coordinate directly with the NM OM to see if staff can be allocated in time.
- Provide an estimate for the completion of the simulation and inform the requesting person of that deadline.
- Record the request and all details in the 'Simulation Database' document in the NM server:  
<\\CFMUFS01.cfm.u.int\GROUP\OPSD\Support\SP\Events\Sims>.
- Results of the simulation should be sent via email, including detailed explanation of the results (either in the text of the email, or via a presentation).

## 4.5. SCENARIOS

Scenarios are an ATFCM solution to Network capacity bottlenecks or specific operational needs of an ANSP.

For each area expected to be critical, a number of flows may be identified by the concerned FMP or the NM, for which other routeings may be suggested, that follow the general scheme, but avoid the critical area. These measures are known as scenarios.

- **Level capping scenarios (FL):** carried out by means of level restrictions in the ETFMS or in the CACD through dynamic routeing restrictions.
- **Rerouteing scenarios (RR):** diversion of flows to off-load traffic from certain areas; implemented in the ETFMS or in the CACD through dynamic routeing restrictions.
- **Alternative routeing scenarios (AR):** alternative routes which are exceptionally made available to off-load traffic from certain areas, implemented by regulations with a low rate. The other option is the application of dynamic routeing restrictions in the CACD (precaution should be exercised by enabling the routeing through normally closed airspace without low rate regulation).
- **EU Restrictions:** CACD restrictions that affect the flight planning phase based on route or airspace closures.

### 4.5.1. Creation and maintenance of scenarios

A scenario will only be created after the identification of a need. This need may be generated by the ANSP / ACC, NM or the AOs based upon encountering a bottleneck.

Scenario measures within the area of responsibility of an individual FMP remain the responsibility of that FMP. In such cases, the NM should be informed.

Scenario measures with a Network impact must be:

- pre-agreed as available for use by the relevant affected FMPs;

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- validated for correctness of information given;
- fully described and illustrated in the NOP Portal;
- tested each AIRAC for validity;
- individually coordinated for each operational use;
- agreed with AOs, trying to respect their preferences.

To facilitate this coordination process, it is the responsibility of all ACCs to ensure that communication links are kept up-to-date. Strategic coordination of proposed scenarios should normally be carried out at least 2 months prior to any pre-season meeting.

**Note:** Dynamic routeing restrictions in CACD (RAD restrictions, EURO restrictions...) are an alternative option covered in the '**Airspace Data Operations Manual**'. However, it must be noted that the effect and final result are not the same, for example: RAD restrictions cannot be lifted with the same ease as scenarios, in such case the use of a scenario may result more beneficial for AOs.

### Procedure

The **FMP staff** shall:

- Propose, consider, coordinate and approve mitigation measures relevant to their area of responsibility.

The **NM Strategic staff** shall:

- Coordinate with the FMP(s) to relieve a known bottleneck and agree a mitigation measure to be proposed.
- Coordinate as part of the event planning process the required mitigation measures for that event, for which scenarios could be one solution.

After strategic coordination takes place between the NM and the FMP(s) and where a new scenario is required,

the **NM pre-tactical team** shall:

- Investigate possible alternative ATFCM solutions prior to creating any new scenario measure(s).
- Evaluate the current capture of the target sector(s) to identify and correct any discrepancies therein.
- Evaluate the traffic flows concerned (identification of the less penalising flows or flows causing the greatest complexity that may be suitable for being moved; where possible these flows shall be subdivided to provide options for moving differing amounts of traffic).
- Determine where the identified traffic should be moved (taking into account the lateral and vertical dimension to determine the minimum 'cost' option for the end user).
- Establish the least penalising solution(s) balancing flight and Network efficiencies.
- Liaise with the AO community to establish operator preferences.
- Coordinate with the reference location FMP to establish the FMP unit preference.
- Design the scenario solution and evaluate traffic resolution paths.
- Create the relevant traffic volume(s), checking compliance with the RAD.
- Evaluate the impact of the scenario measure(s) on other affected FMPs and coordinate with them.
- Store the scenario for future use and promulgate internally the location and procedure for implementing the specific ATFCM scenario.

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- Produce and publish a graphic, for distribution via the NOP Portal detailing the off-load and suggested on-load route(s). Provide mileages if possible.
- Add scenario measure(s) to the scenario validation process for routine compliance checking. If the scenario includes a specific routing requirement (lateral or vertical), this routing shall be maintained on an AIRAC basis by the RPL team, who will create a number of Repetitive Flight Plans (RPLs) to run each AIRAC cycle against the new data tape in order to determine the validity of the routes of these scenarios. Any invalidated RPL shall be notified to the NM pre-tactical team and an updated RAD compliant route shall be devised and revalidated.
- Maintain and update the scenario(s) and associated reference material (graphic(s)) and fully coordinate any changes as the need arises.

### 4.6. AXIS COORDINATION

The Axes are specialised coordination groups that manage operational aspects on a dedicated flow, event or area. Participation in each Axis is defined by the requirements of that flow, event or area. The participation is not limited to the ECAC area.

The Axes area of responsibility covers the traffic flows, interface of ACCs, Air Traffic Flow and Capacity Management (ATFCM), ASM operations (including airspace changes and exercises) and communication issues between all parties involved (i.e. FMP, AO, handling agents, airports, airport slot coordinators, military organisations and the NM as required).

The Axis process is H24 - 365 days per year (except the Ski-Axis).

The Axes shall be managed through a Collaborative Decision Making (CDM) process, which requires the collective agreement of all concerned.

Within the framework of its activities the Axes report to the Operations and Development Sub-Group (ODSG).

The Axes shall be the coordination forum for the management of traffic on the specified Axes from an ATFCM perspective. It will contribute to the fulfilment of the EUROCONTROL Provisional Council Strategic Objectives, as well as strategic objectives of the Network Strategy Plan and the performance targets of the Network Performance Plan (NPP). The Axes shall work within the framework of all NM agreed Operational Concepts.

Currently 4 Axis groups exist. Axis groups usually have a strategic and pre-tactical planning phase with input from the NOP and a post operations phase. The Axes are:

- South-west Axis.
- South-east Axis.
- North-east Axis.
- Ski Axis.

Each Axis, as required, shall have a planning meeting for the next Axis operation period, and a post operations review as detailed in the Axis seasonal operation instruction.

If any participant of an Axis does not attend any meeting / conference then, by implication, they delegate responsibility to the collective agreement of the axis, unless they inform the meeting of their requirements by email in advance, or through representation by a nominee.

### Procedure

The **FMP staff** shall:

- Fulfil the Axis coordination process in line with the terms of reference as published on the NOP Portal as approved at the ODSG.

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- Following their own pre-tactical planning processes, ensure that by the agreed time all requests for regulations or mitigation measures are sent by email to the NM pre-tactical team. This shall occur:
  - On a daily basis during seasonal peaks.
  - When requested by NMOC staff for special events.
  - In preparation for an Axis conference.

The **NM Strategic staff** shall:

- Fulfil the Axis coordination process in line with the terms of reference as published on the NOP Portal as approved at the ODSG.

During the strategic period,

the **NM pre-tactical team** shall:

- Review all requests for the next Axis operation period.
- Obtain a meteorological update that covers the next operational period for SW Axis, SE Axis and SKI Axis.
- Prepare and distribute by email a proposed Axis plan based on FMP requests, pre-tactical proposals and meteorological information if applicable.

During the strategic period,

the **NM tactical team** shall:

- Actively participate in the yearly planning and provide feedback and expertise.

Following the Axis operation,

the **NM pre-tactical team** shall:

- Examine existing identified problem areas for review.
- Liaise with relevant parties, evaluate and coordinate solutions.
- Collate and if necessary edit Fmd infoRmation ExchangE (FREE) feedback for external distribution.
- Collate and prepare FMP feedback on the last Axis operational period.
- Identify any new problem areas, unusual occurrences and deficiencies where apparent.
- Obtain the statistics report for that Axis period.
- Publish all relevant information in the appropriate area of the NOP Portal.

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## 5. PRE-TACTICAL AND TACTICAL PHASES OF OPERATIONS

The **pre-tactical** working process **starts six days before the day of operations**, aims mainly at refining the details of the original forecast over time and at preparing and promulgating an optimised and detailed operational plan (ATFCM Daily Plan - ADP). This working process is supported by Collaborative Decision Making (CDM) activities involving all partners concerned (NM, ANSPs, AMCs, and AOs).

To facilitate the CDM process, the FMPs should assist the NM to check their sector configurations, activation time periods and monitoring values for correctness, as displayed in PREDICT as from D-6. Any differences should be reported directly to the NM pre-tactical team.

To discuss the ATFCM Daily Plan FMPs concerned have an opportunity to participate in CDM conferences organised by the NM.

The **tactical** working process **takes place on the day of operations**. The tactical phase consists of considering the real-time events and applying any refinements needed to the ATFCM Daily Plan in order to restore the ATFCM stability. The need to adapt the original plan may result from significant weather phenomena, unexpected ground or space infrastructure opportunities / limitations, more accurate FPL data, revised monitoring values, etc. The main purpose will be to minimise the impact of any disruptions and to take benefit of any opportunity (e.g. opening of a new sector, activation of military areas, etc.). This will rely on the provision of the traffic and capacity situation as accurately as possible to all partners.

The management of the traffic will be made through capacity enhancements, configuration management, regulations, cherry picking and a variety of scenarios like level capping or rerouteing (both mandatory and advisory).

### Reporting of events impacting ATC / ATFCM

The FMP will pass to the NM information useful to ATFCM pre-tactical planning including but not limited to:

- Monitoring values.
- Sector configurations.
- Runway data updates (e.g. runway in use due to work in progress).
- Information on all known problems likely to require ATFCM intervention as soon as that information is available. Airport operators can provide additional information via the Airport Corner, which is accessible to the NM pre-tactical and tactical teams.
- Regulation proposals (creation, modification or cancellation).
- Details of equipment or staffing changes likely to affect capacity.
- Feedback on the effects of ATFCM measures.

During tactical operations the FMP shall notify the NM of:

- All tactical changes to environmental data such as the opening and closing of airways, ATC sectors, runway changes and taxi times at specified aerodromes, etc.
- Changes to monitoring value figures resulting from unpredicted staffing shortages or increases, equipment failures, adverse weather conditions, reduced runway landing rates due to low visibility, change in military activity plan etc.
- All operational problems that could affect the flow of traffic.

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## 5.1. UPDATING CACD DATA IN PREDICT / ETFMS

Some parameters of the CACD can be temporarily modified for a specific time frame during a day of operations. This procedure is aimed at covering the temporary update of these values during pre-tactical and tactical operations.

**Note:** For permanent changes to CACD see **Notification of updates to CACD**.

Whatever the organisation, the ANSP overseeing the FMP(s) within a State is responsible for establishing local procedures, ensuring that the NM is in possession of all relevant data during each ATFCM phase, and the quality of that data. This is also stated in Commission (EU) regulation 255 / 2010 article 6.

Updates to these parameters of the ETFMS / PREDICT shall always be made directly by the FMP via CIFLO or B2B Web Services. More specifically, on D-1, around 17:00 UTC in winter time (16:00 UTC in summer time) the ATFCM daily plan is transferred from PREDICT to ETFMS. Any updates done before this time are reflected in PREDICT and, afterwards they will be reflected in the ETFMS.

During tactical operations read / write access regarding RWY criteria updates is available to TWRs through CITO.

**Note:** For DPI transmitting aerodromes, once DPI messages are received for a flight, any updates via CIFLO / CITO will not have any impact on this flight.

Taxi time updates and actual SID used by aircraft originating from **A-CDM** (from EOBT-3h up to TTOT) are communicated to the ETFMS via DPI messages for each individual aircraft.

Before EOBT-3h the procedure shall be the same for A-CDM and non-CDM airports.

The updates in the pre-tactical and tactical phases are made via the CHMI (CIFLO / CITO) or B2B Web Services and may only be applicable for a period of the specific day of operations. These updates do not affect the values stored in the NM CACD.

The following environmental data may be updated in the CHMI:

- Capacities;
- Monitoring Values (**MV**);
- Traffic volume activations / deactivations;
- Sector configurations;
- RWY criteria (see **Runway criteria update** for specific details);
- Occupancy Traffic Monitoring Values (**OTMV**).

RWY configurations may also be updated via the NOP portal.

### Procedure during pre-tactical operations

In their regular checking of environmental data from D-6 to D-1 17:00 UTC in winter time (16:00 UTC in summer time),

the **FMP staff** shall:

#### With CIFLO

- Coordinate via telephone with the NM pre-tactical team prior to major (e.g. increase / decrease number of open sectors, low capacities) or unusual (e.g. airspace closures, weather, security problems...) changes that may have an important impact on the Network.
- Input all updates for applicable environmental data (as listed above) in CIFLO.

#### Without CIFLO

- Where one of the FMPs has **no write access for CIFLO** and requires a change to the environmental data **before** the transfer of the ADP from PREDICT to the ETFMS, contact

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the NM pre-tactical team to request their assistance to update environmental data (except OTMVs).

Upon such contact by FMP staff,

the **NM pre-tactical team** shall:

- Check the validity of the data.
- Advise the FMP of any events or information which will or may affect the service provided by its parent ACC(s).
- Assess the Network impact.
- Coordinate with concerned FMPs changes to the ADP.
- Update PREDICT with the changes requested (where the FMP has no access to CIFLO).

**In case of an incident** experienced in the input of data by AD (e.g. wrong configuration or capacities, missing data etc.),

the **NM pre-tactical team** shall:

- Inform the NM OM about the incident.
- Log the event in FREE.

The **NM OM** shall:

- File an ENV Incident form.
- Contact the AD Supervisor to address corrective follow-up actions.

**Procedure during tactical operations**

In their regular checking of environmental data from D-1 17:00 UTC in winter time (16:00 UTC in summer time) and during the day of operations,

the **FMP / TWR staff** shall:

**With CIFLO / CITO**

- Coordinate via telephone with the NM tactical team prior major (e.g. increase / decrease number of open sectors, low capacities) or unusual (e.g. airspace closures, weather, security problems...) changes that may have an important impact on the Network.
- Input all updates for applicable environmental data (as listed above) in CIFLO / CITO.

**Without CIFLO / CITO**

- Where one of the FMPs / TWRs has **no write access for CIFLO / CITO** and requires a change to the environmental data **after** the transfer of the ADP from PREDICT to the ETFMS, contact the NM tactical team to request their assistance to update environmental data (except OTMVs).

Upon such contact by FMP / TWR staff,

the **NM tactical team** shall:

- Check the validity of the data.
- Advise the FMP / TWR of any events or information which will or may affect the service provided by its parent ACC(s).
- Assess the Network impact.
- Coordinate with concerned FMPs changes to the ADP.
- Update the ETFMS with the changes requested (where the FMP / TWR has no access to CIFLO / CITO).



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**In case of an incident** experienced in the input of data by AD (e.g. wrong configuration or capacities, missing data etc.),

the **NM tactical team** shall:

- Inform the NM OM about the incident.
- Log the event in FREE.

The **NM OM** shall:

- File an incident report (ENV Incident form).
- Contact the AD Supervisor to address corrective follow-up actions.

#### 5.1.1. Runway criteria update

Updating runway criteria may be used to improve the accuracy of flight profiles when there is a runway configuration change at one particular aerodrome (de-icing, slow sequence on the taxiway, etc.) for a specific time period.

FMPs through CIFLO, and TWRs through CITO, are able to modify the runway in use and the taxi time data. A-CDM may modify the taxi time for individual aircraft via DPI messaging as well.

When possible, changes should be introduced at least two hours in advance (before the start time of the change); this provides stability of the slot and profile calculations.

The environmental data subject to this procedure are:

- taxi time;
- runway in use for departures;
- runway in use for arrivals;
- Time to Insert in the Sequence (**TIS**);
- Time to Remove from the Sequence (**TRS**);
- start time of validity;
- end time of validity.

It is possible tactically to update multiple runway activation information. This permits to define / activate Right (R) / Left (L) / Central (C) runways or any other active runway combination. All the above parameters may be updated for each different (active) runway and the flight profiles are computed (and improved) using this information.

The taxi time may be modified in the ETFMS for a given time period. For example:

Start Time	End Time	Direction	Role	Taxi	TIS	TRS
0600	1100	02	Global	10	10	05
1100	1500	02L	Global	25	15	10

TRS and TIS are parameters used to prevent last minute modifications of the CTOT. The purpose of TRS is to avoid changes in the CTOT for flights already in departure sequence. The value of the TRS specifies the time before which the CTOT will no longer be modified by the ETFMS (CTOT - taxi time - TRS). Similarly, the TIS makes sure that a CTOT improvement cannot be sent at short notice as the aerodrome requires some time to introduce an aircraft in the departure sequence (clock time + TIS + taxi time).

Any runway configuration change will change the taxi time, TRS, TIS, departure and arrival procedures (such as SIDs and STARs). If the configuration for the Global is changed, both Arrival and Departure will be affected (recalculated). Consequently if the configuration is changed only for Departure only the departing flights are going to be recalculated. It works in the same way for the arrivals.

A modification of taxi time will impact the Flight Activation Monitoring (**FAM**) process.

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In the event where the taxi time is increased some issued slots may be recalculated and a few short notice SRMs issued, normally giving greater delay. If the taxi time is decreased some flights may get improvements.

This process provides a mechanism to avoid the use of short notice modifications in some cases.

### Procedure

Where they have identified a need to update runway criteria,  
the **FMP / TWR staff** shall:

#### With CIFLO / CITO

- Insert as early as possible all required data for the modification in CIFLO / CITO.
- Notify the NM tactical team as early as possible of the changes to runway criteria if they may pose a significant impact on the Network.

#### Without CIFLO / CITO

- In case of unavailability of CIFLO / CITO, contact the NM tactical team, provide the data and request them to update the ETFMS.

Upon receipt of such a request from an FMP,

the **NM tactical team** shall:

- In case the FMP reports a change, assess the Network impact and coordinate with concerned FMPs.
- In case of unavailability of CIFLO / CITO, perform the updates requested by the FMP.

In addition during the period between the change in the taxi time and the start of recalculated slots being generated,

the **NM tactical team** may:

- Approve an extension of the CTOT for any flight with a problem caused by the change of taxi time.

#### All FMP / TWR staff and the NM tactical team updating the runway criteria shall:

- Ensure that the start time of any taxi time parameter modification shall be set at minimum clock time + 30 minutes in order to avoid short notice SRMs.

### 5.1.2. Ad-hoc creation of traffic volumes

A Traffic Volume (**TFV**) is an element of the ETFMS / PREDICT allowing the selection of a specific volume of air traffic, in order to compare the traffic load and the declared monitoring values during the activation period.

Any request to create a TFV that has to be used the same day shall be processed by the NM tactical team on duty.

Most of the information concerning the TFVs is semi-dynamic data. It is possible in real time to create a new TFV, provided the Reference Location (**RL**) exists, but not to modify or delete it. Semi-dynamic data may be modified or deleted only in the Load database (prepared for the next AIRAC cycle), but created in the Live database (which is the one currently used). If a TFV is to be based on a new RL, it can be created only for the next AIRAC cycle.

**Note:** For any other requests on TFVs see **Notification of updates to CACD**.

The description of flows in a TFV is the responsibility of the NM based on the FMP request. The NM will not consider any TFV request containing flows with an exempted (**EM**) role for flights which do not meet the ATFM exemption rules as established by ICAO.

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# ATFCM OPERATIONS MANUAL

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## Procedure

Where they identify the need to create a new traffic volume,  
the **FMP staff** shall:

- Request the NM tactical team to create a TFV for the day of operations.
- Provide by email or fax details of which traffic should be included in the TFV and call to confirm the reception of the information.
- Coordinate the following details with the NM tactical team if so requested:
  - Activation times.
  - Reference location.
  - Upstream / downstream flows.
  - Flow roles.
  - Any other information.
- After creation of the TFV, make sure, in cooperation with the NM tactical team, that the traffic captured is fit for purpose.

Having received such a request from an FMP,  
the **NM tactical team** shall:

- Make sure that the request is fully understood (such as: reference location, upstream / downstream flows, flow roles, monitoring status, etc.).
- Prepare and execute all necessary actions needed for the creation of the traffic volume (including the completion of the DMR and passing it to the AD section for immediate processing).
- Check the activation status in the ETFMS.
- Ensure, in cooperation with the FMP concerned, that the traffic captured is fit for purpose.
- Inform the concerned FMP about the result.
- Inform the NM pre-tactical team about the creation of that TFV.
- Log any relevant feedback in FREE.

### 5.1.3. ANM traffic volume description missing

Every time a regulation is applied an ATFM Notification Message (**ANM**) is issued containing, in addition to other details, the description of the location where the ATFCM measure is applied.

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## Procedure

Whenever it is required to regulate a traffic volume with a blank or incorrect description, the **NM tactical team** shall:

- Consult via the NM DOM with the NM pre-tactical team for a description that shall be published in the ANM.
- Fill the appropriate description in the editor.
- Proceed with the publication.

The **NM pre-tactical team** shall:

- Coordinate with AD to input the description to the NM CACD (this is dynamic data that may be changed on-line).

### 5.1.4. Replacement of a traffic volume with a protected location

This procedure is applied pre-tactically whenever there is an FMP request to delete a traffic volume with a protected location and replace it by a new one. The purpose of the change is to report the delay characteristics of the new TFM as en-route rather than aerodrome. See **Allocating delay to aerodromes** for further information.

## Procedure

Upon notification of such a request, the **NM pre-tactical team** shall:

- Send to the BIN TFM set the TFM to be replaced.
- Create a new TFM and include (IN) in it a flow with:
  - an upstream element; the airspace (AS) itself and
  - a downstream element; the aerodrome (AD).
- Produce the required Data Modification Requests (DMR).
- Contact the FMP staff where deemed necessary (e.g. to clarify any detail).
- Validate the DMR (in agreement with the request) and send it to AD staff.
- Update the FMP reference email folder with the requested documentation.

### 5.1.5. RAD ad-hoc temporary changes

Major unexpected events which disturb traffic patterns or ATFM measures may sometimes require the suspension of a unit(s) of the RAD for a defined period. The purpose is to accommodate delayed traffic by providing alternative routings after coordination with the relevant parties.

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**Procedure**

Where a RAD ad-hoc temporary change is required, the **NM DOM** shall:

- Contact the appropriate FMP to find out who may authorise the change.
- Coordinate with the appropriate contact person and the AD section.
- Once approved, request from the AD section the suspension of the relevant RAD unit.
- Inform the NM OM, the NM AOLO and the IFPS Supervisor about the change.
- Request the NM AOLO to inform AOs about modified flight planning options.
- Send an AIM to inform of the disabled RAD units.
- Log the event in FREE.

**5.2. PREDICT FLIGHT DATA**

Flights processed in the ETFMS are saved and archived on a daily basis. The archived files are used by PREDICT to represent the future demand as reference days.

The reference day is chosen as that which is most likely to reflect the traffic of the day for which the ATFCM daily plan (ADP) is being prepared, usually the same day of the previous week (D-7) or two weeks earlier (D-14). In the cases where this is clearly not the case, e.g. special dates such as Christmas and Easter, or when this reference date was the date of an industrial action or any other special event, the NM pre-tactical team will arrange for the forecast to be recreated using a reference date of their choice. The forecast is also supplemented with RPL data.

Every day, DDR2 / PRISME sends to PREDICT the collected Flight Intentions (FI) for the next 6 days (D-6 to D-1). In nominal cases, the data sent to PREDICT is the snapshot of the airport slots data received the night before from the European Association of Airport Slot Coordinators (EUACA) and from the Russian Federation sent by the Main Air Traffic Management Centre (MATMC) for the flow from the Russian Federation to the NM area. The data transfer to PREDICT is planned between 04:00 UTC in winter time (03:00 UTC in summer time) and 06:00 UTC in winter time (05:00 UTC in summer time). The flight intentions are used to enrich PREDICT flight data to better represent the expected demand.

In addition, NATS provides forecast information relating to NAT traffic for forecast dates up to 3 days in the future and this is used to update the NAT traffic data in the forecasts for the next three days.

**5.2.1. PREDICT data replacement**

On occasions it may be necessary to manually reload PREDICT with flight data from scratch. This might occur:

- when reference data different from D-7 has to be selected for a specific target date (because of a disruption that took place on D-7).
- when flight data corruption is detected in PREDICT due to erroneous DDR updates or any other reason; Two different solutions are applicable:
  - Repair by applying automatic NAT Traffic Replacement and DDR DATA. This procedure is applicable when the restore cannot be done from PREDICT archived demand.
  - Restore by loading saved predict demand. This procedure is applicable when the restore can be done from PREDICT archived demand.

An automated script has been developed to allow safe flight data reload PREDICT for a specific day. The script automates the following tasks:

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- Load archived flight data from a specified reference day. This makes it possible to specify a date different from D-7, if the NM pre-tactical team decides to use another reference date.
- Replace RPL data corresponding to the selected day.
- Start the corresponding NAT tracks substitution.
- Start the corresponding enrichment with DDR flight intention files.
- Save the flight data from the Simul session into a FLIGHT\_BIN export.
- After data quality acceptance from the NM pre-tactical team, replace the flight data in the PREDICT Server after its validation by the NM pre-tactical team.

### Procedure for a change of the reference day

At the end of the pre-tactical day,

the **NM pre-tactical team** shall:

- Check with the NM DOM if any event from the current day would make the archived flight data unsuitable for future pre-tactical use.

This information may also be obtained from the Post Operations team,

the **NM pre-tactical team** shall:

- Check if any possible disruptions mentioned would make that day unsuitable for future pre-tactical use.

Where the reference day is not suitable (a disruption such a strike took place on that day) and it has to be changed,

the **NM pre-tactical team** shall:

- Send an email to CSO staff ([nm.cso@eurocontrol.int](mailto:nm.cso@eurocontrol.int)) copied to the LSE ([nm.tact.lse@eurocontrol.int](mailto:nm.tact.lse@eurocontrol.int)), the NM pre-tactical mailbox ([nm.pretact@eurocontrol.int](mailto:nm.pretact@eurocontrol.int)) and the OM ([nm.om@eurocontrol.int](mailto:nm.om@eurocontrol.int)) using the template (TEMPLATE PART 1 – with the insertion INCident 'NO' and 'TAC/PROC/DEM82') stored in the local directory:

<\\CFMUFS01.cfm.corp.eurocontrol.int\\GROUP\\OPSD\\Support\\SP\\Network Management Cell\\NMC OPS DATA\\Templates>

- After the loading process is finished and CSO staff confirm it through email, check that the new data is correct.
- Record in FREE information on the substitution for the relevant pre-tactical day and in the pre-tactical handover document.

### Procedure for flight data corruption in PREDICT demand (repair by applying NAT traffic replacement and DDR data)

Where the data in PREDICT is found erroneous or corrupted,

the **NM pre-tactical team** shall:

- Send an email to CSO staff ([nm.cso@eurocontrol.int](mailto:nm.cso@eurocontrol.int)) copied to the LSE ([nm.tact.lse@eurocontrol.int](mailto:nm.tact.lse@eurocontrol.int)), the NM pre-tactical mailbox ([nm.pretact@eurocontrol.int](mailto:nm.pretact@eurocontrol.int)) and the OM ([nm.om@eurocontrol.int](mailto:nm.om@eurocontrol.int)) using the template (TEMPLATE PART 1 – with the insertion 'To be provided by LSE' and 'TAC/PROC/DEM81') stored in the local directory:

<\\CFMUFS01.cfm.corp.eurocontrol.int\\GROUP\\OPSD\\Support\\SP\\Network Management Cell\\NMC OPS DATA\\Templates>

The LSE will provide an information file to CSO after due analysis.

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- Inform the NM OM.
- Issue an AIM to inform that the replacement process starts.

CSO staff will send back to the NM pre-tactical team the initial email and include location and name of the flight\_bin created. Once this email is received,

the **NM pre-tactical team** shall:

- Check the quality of the demand for the forecast date in a PREDICT / Simul session by loading into it the flight\_bin sent by CSO staff.
- If the new traffic sample is **not valid**, stop the PREDICT / Simul session, inform CSO to abort the loading by filling in the required template (TEMPLATE PART 3) with the noGO decision together with an explanation as to why.
- Coordinate with TACT LSE and CSO staff and decide which demand is to be loaded and repeat the process.
- Once the new traffic sample is **valid**, then stop the PREDICT / Simul session and ask the CSO staff to continue with the loading the forecast date on the PREDICT server by filling in the required template (TEMPLATE PART 3) with the GO decision.
- Inform the NM OM.
- Issue an AIM to inform that the replacement process has finished.

### Procedure for flight data corruption in PREDICT demand (restore by loading saved PREDICT demand)

Where the data in PREDICT is found erroneous or corrupted,

the **NM pre-tactical team** shall:

- Send an email to CSO staff ([nm.cso.msa@eurocontrol.int](mailto:nm.cso.msa@eurocontrol.int) / [cfmu.osmas@eurocontrol.int](mailto:cfmu.osmas@eurocontrol.int) / [nm.cso.haren.supervisor@eurocontrol.int](mailto:nm.cso.haren.supervisor@eurocontrol.int)) copied to LSE ([nm.tact.lse@eurocontrol.int](mailto:nm.tact.lse@eurocontrol.int)) using the template (TEMPLATE PART 1 – with the insertion 'DOES NOT APPLY' and **TAC/PROC/DEM83**) stored in the local directory:

<\\CFMUFS01.cfm.corp.eurocontrol.int\\GROUP\\OPSD\\Support\\SP\\Network Management Cell\\NMC OPS DATA\\Templates>

The LSE will provide an information file to CSO after due analysis.

- Inform the NM OM.
- Issue an AIM to inform that the replacement process starts.

CSO staff will send back to the NM pre-tactical team an email confirming that the restore process has finished.

the **NM pre-tactical team** shall:

- Validate the quality of the demand for the forecast date.
- Inform the NM OM.
- Issue an AIM to inform that the replacement process has finished.



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**5.2.2. NAT traffic replacement**

The daily NAT forecast data shall be communicated by NATS in a file (one file per forecast data). These files shall be exchanged via FTPS. The procedure requires a separate NAT file for each day. Prior to processing, a consistency check is applied on the received files.

The automated NAT flow replacement runs on PREDICT at 07:30 UTC and attempts to replace the North Atlantic traffic for D-3, D-2 and D-1 in this order.

A separate recovery job runs on the hour and half hour every 30 minutes throughout the day and attempts to run the NAT replacement if not already done, e.g. because the NAT files had not yet been provided.

Usually the NM pre-tactical team does not execute the manual replacement of NAT traffic on D-3, D-2 and D-1. However, exceptionally the NM pre-tactical team shall apply the manual replacement (procedure described below) of NAT traffic under the following circumstances:

- Processing of NAT traffic for a SIMEX stand-alone simulation.
- Processing of NAT prediction file for D-1 / D-2 not received.
- Processing of NAT prediction file for D-3 not received or received after 15:00 UTC.
- Any other scenarios where the automatic replacement of NAT traffic cannot be applied.

If the files are valid the confirmation mails will be sent on reception, at revised submission time and when processing is completed.

There is no 'cut-off' time for processing D-2 or D-3 NAT files.

**Automatic processing of NAT files - mails**

The automated procedure will send mails to the forecast originator (NATS) and to the NM pre-tactical team as below:

- A mail will be sent for each received NAT forecast file if the file sent is valid in syntax, in content, it is not a duplicate, and no errors are found during the reading or during the writing on the OPS FTPS.
- If the files are valid the confirmation mails will be sent at the reception and when processing is complete.
- Once the automatic NAT replacement process is completed, the flight intentions process is triggered for D-2 and D-3.
- If D-3 file is not received by 15:00 UTC (only for D-3) an email will be sent informing of the lack of data.
- In case of any anomaly detected (format / content) in the received files a mail will be sent with two different parts. The first part presents the error type and the second part presents the file content. The subject of the email is 'Problem detected with NAT replacement submission file'.

**Automatic processing of NAT files - alarms**

The automated procedure will send alarms to CSO as below:

- A critical alarm is sent to the CSO at 15:00 UTC if the NAT file for D-3 is still not present on the OPS FTPS by this time.
- A critical alarm is sent to the CSO from 11:00 UTC onwards if the recovery job tries to perform NAT replacement on the forecast for D-1 after this time.
- Note that no alarm will be raised if the D-2 or D-3 files are not present on the OPS FTPS at 11:00 UTC as files for these forecast days are optional.
- A critical alarm is sent to CSO in the 5 minutes following the reception of received files with detected anomalies.



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**Procedure**

Each day, during pre-tactical operations,

the **NATS staff** shall:

- Load on the OPS FTPS server a file containing the expected traffic on D-3 before 15:00 UTC, although it is still processed if received later (but an alarm will be raised).
- Load on the OPS FTPS server a file containing the expected traffic on D-2 if an update to the prediction is required. There is no deadline time in this case.
- Load on the OPS FTPS server a file containing the expected traffic on D-1 before 10:30 UTC to ensure that it is processed before 11:00 UTC.
- When required by a change of circumstances, provide a subsequent NAT file for each day and apply a consistency check on the files prior to processing.

In case the file containing the prediction in D-3 is not received before 15:00 UTC, an email will be sent informing of the lack of data, if NATS does not reply within the next 10 minutes a flag for potential issue will be raised (no alarm raised). In such cases,

the **NATS staff** should:

- Contact the NM pre-tactical team for investigation.

The **NM pre-tactical team** shall:

- Check with CSO staff if and why the process has failed.
- Take any corrective action that might be required.

In case of need to **manually substitute the NAT traffic** (according to the circumstances above),

the **NM pre-tactical team** shall:

- Set up PREDICT to the correct date for the replacement day.
- Obtain the specified files for Eastbound and Westbound replacement dates from the email received from NATS.
- Ensure the selection criteria are correctly input.
- Replace the existing NAT traffic with the updated NAT traffic (ensure both Eastbound and Westbound flows are replaced).
- Apply the latest DDR flight intentions following the correct order (see **Updating PREDICT with DDR flight intentions**).
- Log the event in FREE.

**5.2.3. Updating PREDICT with DDR flight intentions**

Every day PREDICT tries to process FI files sent from DDR2 / PRISME. The first attempt to apply the files occurs at 05:00 UTC and after that, if it did not succeed, PREDICT tries to process the files every two hours for the rest of the day.

The check for a complete set of intention files is executed daily at 11:00 UTC. For D-1, the automatic updating of flight intentions is not applied if the files are received on D-1 after 11:00 UTC. In this case no alarm is sent to CSO but an email warning is sent to the NM pre-tactical team.

If PREDICT receives flight intention files for D-2 to D-6 missing at 11:00 UTC or later they will be processed and no alarm or email will be generated.

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The automated NAT flows substitution applied on D-3, D-2 and D-1 to reflect the forecasts sent by the NATS, also triggers the DDR FI update for the corresponding day(s). The FI will be applied for both the corresponding forecast day and the day before. This is required to enrich the cross-midnight NAT flights added during the replacement.

There is also a possibility to apply the FI update manually, however under normal circumstances no specific action is required from the NM pre-tactical team as the procedure is fully automated.

The impact on intention files caused by a strike at a coordinated airport will automatically be corrected in the traffic forecast by the flight intentions received.

In case manual changes or flight deletions have to be applied by the NM pre-tactical team on the flight data (D-6 to D-1), note that the next cycle of the DDR2 / PRISME injection might override the manual changes.

## Procedure

Each day,

the **NM pre-tactical team** tasked with checking the traffic forecast shall:

- Ensure that the flight intentions have been updated in the traffic forecast. An email will be received from PRISME support if there was a problem with the flight intentions produced by PRISME.
- If no flight intentions are generated at D-6, decide either to load them manually or leave it for the next automatic overnight update for D-5.
- Where the decision on the previous item was to manually load them, then load the flight intentions from the FTPS\_PREDICT folder.

At D-6 and **in case a disruption was reported the previous day** (D-7),

the **NM pre-tactical team** shall:

- Check if the disruption has been corrected by the flight intentions.
- If the disruption has not been corrected, replace PREDICT data with a new reference day (procedure **Predict data replacement**).

## 5.3. TRAFFIC LOAD MONITORING

Monitoring the traffic load is a joint responsibility between the NMOC and FMPs unless otherwise agreed.

The MV is the agreed number of flights accepted to enter into a reference location per rolling hour beyond which coordinated actions may be considered between the concerned parties in order to better balance the traffic load.

Any defined MV for any TFV (sector, airspace, point or aerodrome) may be modified.

ATC capacity should be expressed as the maximum number of aircraft which can be accepted over a given period of time within the airspace or at the aerodrome concerned.

In order to minimise the number of 'false' indications (red / orange) and to better reflect the actual balance load / capacity, the figure to be used in the ETFMS shall be the number of flights the FMP can accept. The updates can only be applicable for a period of a specific day of operations and do not affect the values stored in the CACD.

## Procedure

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**Where the NM Agreement (or an OI) with an ACC defines a joint responsibility for monitoring,**

the **NM pre-tactical team** during the pre-tactical phase and the **NM tactical team** during the tactical phase shall:

- Compare demand with the monitoring value of TFVs associated to:
  - active configurations sectors;
  - aerodromes;
  - set of aerodromes;
  - significant points;
  - additional sectors that are not a part of current configurations as required.
- Monitor the load and coordinate any action with the concerned FMP when the load is above declared MV.
- Request to update MVs in PREDICT / ETFMS if the FMP agrees to handle more traffic than initially agreed, or has to change the MV for any reason in its area of responsibility.
- Monitor the effect of implemented measure(s) and take any corrective action, if required.
- Analyse delays in the slot list and try to resolve them in coordination with the NM.
- Not be responsible for any potential overloads if the FMP does not update the MVs as appropriate.
- Log the event in FREE in case of any disagreement to update the MVs.

In their area of responsibility,

the **FMP staff** shall:

- Compare demand with the monitoring value of TFVs associated to:
  - active configurations sectors;
  - aerodromes;
  - set of aerodromes;
  - significant points;
  - additional sectors that are not a part of current configurations as required.
- Take appropriate action when excesses of demand over monitoring value are detected such as:
  - Coordinate changes to ATC staff disposition to increase capacity on affected sectors.
  - Discuss with the NM optimum sectors configuration (e.g. use of OPTICON).
  - Open additional sectors.
  - Coordinate temporary additional capacity as required.
- Introduce MV updates into the PREDICT / ETFMS system via CIFLO.
- Monitor the load and coordinate any action with the NM Tactical / NM pre-tactical team when the load is above declared MV:
  - Coordinate with NM Tactical / NM pre-tactical team the implementation of scenarios.
  - Request the NM Tactical / NM pre-tactical team the implementation of a regulation indicating the appropriate regulation reason.
- Monitor the effect of implemented measure(s) and take any corrective action, if required.
- Analyse delays in the slot list and try to resolve them in coordination with the NM.
- Provide support, advice and information to ATC, airports and AOs as required.
- Take full responsibility of load monitoring and potential overloads in case of inappropriate update of MVs.

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Where the NM Agreement (or an OI) with an ACC defines that the FMP is solely responsible (either fully or for a part of the day) for monitoring in their area of responsibility,

the **FMP staff** shall:

- Monitor all TFCVs associated to:
  - active configurations sectors;
  - aerodromes;
  - set of aerodromes;
  - significant points;
  - additional sectors that are not a part of current configurations as required.

At all times, **when regulations are applied**, the **monitoring** of the traffic loads, flight lists and delays are a **joint responsibility** between the NM and the FMP.

## 5.4. MANAGEMENT OF SIMULATION REQUESTS DURING PRE-TACTICAL / TACTICAL OPERATIONS

The simulation with SIMEX enables the NM pre-tactical team and Tactical staff to test and fine tune the application or cancellation of regulations, rerouting and level capping scenarios before applying them to live traffic. This action aims at assisting the ATM partners in their decision making process such that the number of regulations causing the minimum impact will be used and that it is compatible with the current network situation.

SIMEX reduces risks of applying wrong or less optimal measures and avoids 'trial and error' on the 'real' ETFMS server.

The ATFCM simulations are performed within the NMOC and are limited by their time of creation and specific purpose. They are valid only for the specific geographical area, the intended audience and the period of interest.

### Procedure during pre-tactical operations

The **FMP staff** requiring a simulation shall:

- Contact the NM pre-tactical team with their request.

Upon reception of a request from the FMP or NM Strategic staff,

the **NM pre-tactical team** shall:

- Prioritise the requests if too many requests are received.
- Allocate NM pre-tactical team for the simulation requested.

The **NM pre-tactical team** assigned to this task shall:

- Configure the workstation, the appropriate flight data, the ATFCM measures and any other required configuration.
- Start the simulation.
- Ensure that the simulation is carried out in line with the request.
- Publish the simulation to ensure visibility.
- Communicate the simulation result to the originating FMP and coordinate any further action (modification to the simulation, implementation of ATFCM measures...).

### Procedure during tactical operations

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The **FMP staff** requiring a simulation shall:

- Contact the NM DOM with their request.

Upon reception of such request,

the **NM DOM** shall:

- Prioritise the requests if too many requests are received.
- Allocate NM tactical team for the simulation requested.

The **NM tactical team** assigned to this task shall:

- Configure the workstation, the appropriate flight data, the ATFCM measures and any other required configuration.
- Start the simulation.
- Ensure that the simulation is carried out in line with the request.
- Publish the simulation to ensure visibility.
- Communicate the simulation result to the originating FMP and the NM DOM and coordinate any further action (modification to the simulation, implementation of ATFCM measures...).

## 5.5. MANAGEMENT OF THE ATFCM DAILY PLAN (ADP)

The ADP is a proposed set of tactical ATFCM measures prepared pre-tactically and agreed between all partners concerned to optimise the European Network. It covers a 24-hour period (the day prior to the day of operation) for each day.

Normally the ADP starts as a draft on D-2 and it is finalised and promulgated on D-1 by means of the ATFCM Notification Message (ANM) and the INP. During tactical operations the ADP is further modified according to the developments of the day.

### 5.5.1. D-2 Draft

The NM has coordinated the following procedure with FMPs as the first steps creating the ADP.

#### Procedure

On D-2 the **NM pre-tactical team** shall:

- Ensure they are fully briefed on the Network situation before preparing the draft D-2 ADP.
- Ensure the correct date is selected in PREDICT.
- Monitor the sector configurations and if not present, coordinate with the concerned FMP(s).
- Ensure the appropriate PREDICT scenario reference plan is selected as a basis for the new plan.
- Ensure the 'standard' measures (such as regulations derived from current OIs and procedures in the manual), if any, are implemented according to their validity.
- If appropriate, coordinate with FMPs where overloads may occur and propose any possible alternative to regulations.
- Ensure the pre-requests for regulation(s) by the FMPs are implemented or flagged for D-1 attention.
- Incorporate known information that will affect the ADP (continuation of a previous event, beginning of a new event).
- Make an initial analysis of the sector loads.

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- Prepare a draft Network Brief in FREE.
- Highlight issues for pre-tactical attention for D-1 in FREE.
- Prepare a draft INP.

On D-2 **FMP staff** shall as a minimum (unless excluded by specific local agreements):

- Monitor the load and configuration of their sectors.
- Coordinate with the NM pre-tactical team where overloads may occur.
- Propose changes in configuration, or any other alternatives, in order to meet demand where possible.
- Request a regulation where no other possibility is available.

## 5.5.2. D-1 Plan

The D-2 draft of the ADP is further adapted and prepared on D-1.

If an FMP disagrees with the proposed ATFCM daily plan (ADP) or has a different solution, they should contact the NM pre-tactical team to discuss the proposals and any revisions they request as soon as possible to facilitate completion of the ADP.

### Procedure

On D-1 **NM pre-tactical team** shall:

- Continue with the construction of the ADP (D-1 plan from D-2 draft).
- Routinely monitor the Status Display and any request from FMPs.
- Assess FMP requests and discuss any issues directly with the FMP.
- In the event of an FMP-requested regulation that is considered in contradiction to the Network performance or AO intentions, conduct a CDM process. If an agreement cannot be reached, the FMP's request shall be implemented and, if necessary, the event recorded in FREE for post operations follow-up.
- Make a complete analysis of the anticipated Network situation.
- Ensure 'hot spots' are identified.
- Investigate possible solutions to achieve a more beneficial Network effect and, following coordination with affected FMPs, implement them into the plan.
- Ensure that by no later than 12:30 UTC in winter time (11:30 UTC in summer time) on D-1, the ADP, based on FMPs requests and the Pre-tactical proposals, is updated in PREDICT.

**Note:** If no communication is received by 13:30 UTC in winter time (12:30 UTC in summer time), it will be considered that all FMPs are in agreement with the proposed ADP.

- Continue a CDM dialogue after this time with those FMPs where significant changes to the original plan have been introduced.
- Evaluate all requested measures for their impact on the Network.
- Coordinate any Network or local issues with all relevant parties in a timely manner.
- Ensure the internal briefing document in FREE is fully updated, accurately reflects the ADP, identifies 'hot-spots' and contains any additional information that may assist tactical operations.
- Ensure the INP is fully updated with pertinent information from the ADP that may assist the user during tactical operations.

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- Transfer the ADP from PREDICT to the ETFMS at 17:00 UTC in winter time (16:00 UTC in summer time). After the transfer, any amendments to the plan must be done in the ETFMS.
- Send the INP.
- Release the Network Brief in FREE.
- Continue to update the Network Brief and the INP if new information is received.

On D-1 **FMP staff** shall (unless excluded by specific local agreements):

- Access CIFLO and evaluate the draft ADP.
- Check the accuracy of their sector configurations, activation periods and MVs for correctness, as displayed in PREDICT.
- Update CIFLO with their information (see **Updating CACD data in PREDICT / ETFMS**) no later than 12:30 UTC in winter time (11:30 UTC in summer time).
- Request implementation of regulations and scenario measures to the NM pre-tactical team by email if further coordination is needed.
- In all cases of coordination with the NM pre-tactical team, allow sufficient time to permit discussion between 12:30 and 13:30 UTC in winter time (11:30 and 12:30 UTC in summer time).
- Where FMPs have to delay their input, contact the NM pre-tactical team to advise them of this.

### 5.5.3. Creation of the Initial Network Plan (INP)

The Initial Network Plan (INP) is a document (replacing the former Network News) produced by the NM pre-tactical team and distributed via the NOP Portal. It is produced on D-1 to detail the D-1 ATFCM Network plan and to give advanced and additional information on relevant events that are foreseen to have a significant impact on flight operations and / or ATC on the following day:

- a description of regulations which are likely to give rise to significant delays;
- specific restrictions for special events;
- route segments where zero rate flows have been imposed;
- meteorological information (produced by the NM AOLO on D-1);
- information on airports availability
- and any other relevant information on the European Network.

#### Procedure

Each day,

the **NM pre-tactical team** shall:

- Ensure the correct title and relevant validity dates.
- Include only relevant and valid information from the ADP.
- Review with another NM pre-tactical team member to check the INP prior release to verify its accuracy and completeness.
- Upload the INP onto the NOP Portal after 17:00 UTC in winter time (16:00 UTC in summer time).

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- Identify possible revisions; corrections or additional new information that needs to be added.
- Update the INP and promulgate those revisions if needed (via NOP Portal).

### 5.5.4. Creation of the Network Brief

The Network Brief is an internal NM document used:

- as a repository of long-term events / procedures to be used for coordinating measures with individual FMPs;
- to transfer knowledge from the NM pre-tactical team to tactical operations of both:
  - long-term events / procedures,
  - the coordination which took place to prepare the measures applied pre-tactically for the ATFCM Daily Plan;
- by the NM tactical team to record the reasoning behind decisions taken during the day of operations;
- for post operational analysis of events.

The Network Brief is distributed via FREE.

#### Procedure

- Each day,  
the **NM pre-tactical team** shall:
- Include only relevant and valid information from the ADP.
  - Include any comment or information that may ease the handling of the ADP by NM tactical team.
  - Release the Network Brief in FREE, usually at the same time of the transfer of the ADP from PREDICT into the ETFMS, 17:00 UTC in winter time (16:00 UTC in summer time).
  - Identify possible revisions; corrections or additional new information that needs to be added.
  - Update the Network Brief and promulgate those revisions, if needed, via FREE.

### 5.5.5. Transfer of the ADP from PREDICT into the ETFMS

The ADP plan is held in the PREDICT system, each day the plan has to be manually transferred to the ETFMS in preparation for the following day's tactical operation.

Both a PREDICT and an ETFMS workstation are required.

The external user access to PREDICT via their CHMI workstation is set to stop at 17:00 UTC in winter time (16:00 UTC in summer time); external user access is then blocked until the plan is successfully imported into the ETFMS.

**Note:** Late information received pre-tactically may delay the transfer. If this occurs a decision will be taken as to the most appropriate system to update with this **information**.

#### Procedure



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The **NM pre-tactical team** on D-1 shall:

- Check that the ADP is completed and ready and export it at 17:00 UTC in winter time (16:00 UTC in summer time).
- Import the ADP plan into the ETFMS.
- Check and resolve any error messages generated during the export or import stages of transfer.
- Check the ETFMS for the reference day to ensure the data has been correctly and completely transferred.
- Inform the NM OM or the NM DOM that the plan is active in the ETFMS.

### 5.5.6. Tactical management of the ATFCM Daily Plan (ADP)

The NM tactical team are in charge of managing the ADP during the day of operations using the ETFMS workstations.

Any modification to the regulation plan (new plans, changes, etc.) is reflected in the ADP and the ANM amendment is prepared automatically, ready to be published and sent.

Should there be a need to adapt the ADP, it shall be done through a CDM process.

#### Procedure

During tactical operations,

the **NM DOM** shall:

- Ensure the implementation of the ADP.
- Ensure that all NM tactical team members adjust the plan if necessary, following the CDM process with the relevant parties.

### 5.5.7. Tactical operations feedback

During tactical operations the NM tactical team shall continuously evaluate the ADP and provide feedback for post operations analysis. FMPs are invited to forward their views and comments on the ADP.

The feedback itself should be descriptive and briefly evaluate the impact of tactical ATFCM actions on the Network (positive or negative) and events. The timing of events and actions should be noted. The feedback should be signed to ensure post operations staff may follow-up for clarification and further investigation

The tool used to input the feedback for the NMOC is FREE, which is a Remedy internal application. FREE provides a means of operational communication between tactical and pre-tactical teams.

As FREE feedback is normally written in real time or is time constrained it is accepted that the information may be superseded by events. However, in order to assess how a situation developed such feedback provides an insight into the decision making process.

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## Procedure during pre-tactical operations

The **NM pre-tactical team** shall:

- Review any relevant tactical feedback introduced in FREE by the NM tactical team and take the appropriate action where necessary (unexpected operational issues or problems with the ADP during the previous days of operations).
- Incorporate all relevant feedback data in FREE regarding the execution of the Axes.

## Procedure during tactical operations

The **FMP staff** shall:

- Communicate their feedback on the ADP (if any) to the relevant NM tactical position (e.g. incorrectly pre-tactically defined regulations, scenarios or rerouteings).

The **NM tactical team** shall:

- Provide clear and concise feedback in FREE on any significant changes to the agreed ADP or unforeseen events and the reasons why these took place (staffing, weather, industrial actions or any unexpected event impacting operations).
- Propose new techniques, ideas and suggestions.
- Collect feedback from FMPs and log it in FREE.

### 5.5.8. Severe weather assessment

The procedure details the processes to identify, alert, communicate and monitor weather conditions likely to impact ATC capacity and flight profiles. It provides data for NM to share expectations with ATC authorities in an endeavour to prompt a review of potential impact and planned mitigation responses at aerodromes or in en-route airspace (if considered necessary), in order to protect ATC as far as possible from excess workload and provide time for customers to explore operational options and optimise flight efficiency.

#### Definition of Severe Weather (for the purposes of this procedure)

En-route operations:

- Winter / summer storm.
- Convective activity (CB: isolated, occasional or frequent, with or without lightning).
- CAT FL290+.
- Wind (jet stream, Approach winds 3000').

Airport operations:

- Severe winter / summer storm.
- Convective activity: (CBs: isolated, widespread cells with or without lightning).
- Strong and/or gusting winds: >30kts or local RWY criteria.
- Visibility; Low Visibility Procedures (LVPs): (<1500m) / low cloud (200ft).
- Severe precipitation (rain; freezing rain, snow & icing) on runway, or ground infrastructure.

#### Definition of weather impacting capacity

Definition of weather impacting capacity at:

**Airport:** Where a weather impact reduces capacity at an airport by 5% or more, when operating at 70% or more of its operating runway or ground capacity, whichever is the lesser, and may result in ground handling complexity, air holding of 20 minutes or more, or impact en-route complexity.

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**En-route:** Where weather reduces capacity by 15% or more, or increases traffic handling complexity, and hourly demand is 70% or more of capacity.

**TMA:** Where weather impact reduces capacity by 10% or more, or increases traffic complexity, restricts / prevents the use of SIDs / STARs, prevents intermediate traffic sequencing or holding in the approach phase.

### Areas covered

All en-route and TMAs airspace in the NM area of responsibility will be monitored.

The NM AOLO at the NMOC will also monitor the following airports:

EBBR, EDDF, EDDL, EDDM, EDDS, EFHK, EGLL, EGKK, EGCC, EGPH, EHAM, EIDW, EKCH, EPWA, ENGM, ESSA, LEBL, LEMD, LEPA, LFMN LFPG, LFPO, LGAV, LIML, LIMC, LIRF, LOWW, LPPR, LPPT, LSGG, LSZH, LTAC, LTBA.

The list of airports does not exclude the monitoring of other aerodromes if significant delay is envisaged, or a weather phenomenon is identified that may impact large regional areas of Europe.

Additional airports to be monitored in winter (January - April) on Saturdays, Sundays and European public holidays (Ski Axis airfields):

EDNY, LFBO, LFLB, LFLS, LFLP, LFLY, LFLL, LIME, LIMF, LIMZ, LIPB, LIPO, LIPX, LOWI, LOWS, LSGG, LSGS, LSZB, LSZS.

### Weather assessment

The weather assessment prepared by the NM AOLO is based on TAFs, Metars, any other relevant information from the meteorological provider and weather related events reported via the Airport Corner which are forwarded to the NM AOLO automatically via email. It should include:

- Pressure systems / Frontal activity;
- Wind (upper, surface, 3000ft, Jet Stream);
- Precipitation;
- Thunderstorms / Convective activity;
- Temperature;
- Fog / Visibility;
- Clear Air Turbulence.

### ANSP Management Role

The FMP is responsible for local impact assessments and decisions on management, strategy and measures. The NMOC will be available to support the decision making process and to act on the resulting actions. It is essential that adjacent ATC units or ACCs, if impacted, are part of the decision making process (NMOC would act as an intermediate partner if required).

In order to apply this procedure, FMPs shall notify to the NM those weather conditions that may impact ATC capacity or air traffic demand, as stated in **Commission Regulation (EU) 255 / 2010** article 6.

### Procedure during pre-tactical operations

On D-1,

the **FMP staff** shall:

- Monitor forecast weather threats that could impact capacity (en-route or aerodrome) in their area of responsibility for the following day.
- Communicate with the NM pre-tactical team any weather threat.
- Prepare and coordinate mitigation measures with the NM pre-tactical team.

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The **NM AOLO** shall:

- Monitor the weather in the Network for threats that could impact capacity the following day.
- Brief the NM pre-tactical team and provide continuous updates of any weather threats in the Network. This shall be in the form of a written assessment covering the following day.
- After 19:00 UTC, brief the NM tactical team and provide continuous updates of any weather threats in the Network. This shall be in the form of a written assessment covering the next 12 hours.
- Prepare the weather assessment and publish it in the NOP Portal / Network Operations Weather Assessment by:
  - 14:00 UTC in the pre-tactical tab.
  - 19:00 UTC in the pre-tactical and in the tactical tabs.

The **NM pre-tactical team** shall:

- Communicate with the relevant FMP(s) regarding capacity impacting threats identified by the NM AOLO.
- Inform the NM AOLO on any weather threat warning received from FMPs.

When a **weather threat** is **identified**,
- Coordinate with the relevant FMP mitigation measures.
- Assess the impact on the D-1 plan (e.g. viability of scenarios), including coordination with potentially impacted FMPs and airports.
- Implement the mitigation measures following coordination with the relevant FMP(s).
- Update the INP accordingly to inform stakeholders of the applied measures.
- Inform the Airport Unit via an email to [nm.alis@eurocontrol.int](mailto:nm.alis@eurocontrol.int).
- Provide feedback in FREE.

## Procedure during tactical operations

The **FMP staff** shall:

- Monitor actual and forecast weather threats that could impact capacity (en-route or aerodrome) in their area of responsibility.
- Communicate with the NM tactical team any weather threat.
- Prepare and coordinate mitigation measures with the NM tactical team **at least 3 hours before the predicted weather event if possible**.

The **NM AOLO** shall:

- Monitor the weather in the Network for threats that could impact capacity.
- Brief the NM tactical team and provide continuous updates of any weather threats in the Network. This shall be in the form of a written assessment covering current conditions, and an evolution for the afternoon and evening.
- Prepare the weather assessment and publish it in the NOP Portal / Network Operations Weather Assessment by:
  - 05:30 UTC in winter time (04:30 UTC in summer time) in the tactical tab.
  - 12:00 UTC in the tactical tab.

The **NM DOM / SNOC** shall:

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- Communicate with the relevant FMP(s) regarding capacity impacting threats identified by the NM AOLO.

When a **weather threat** is **identified**,

- Coordinate with the relevant FMP mitigation measures and, if required, run a SIMEX simulation.
- Assess the Network impact (e.g. viability of scenarios), including coordination with potentially impacted FMPs and airports.
- Ensure that the mitigation measures are implemented following coordination with the relevant FMP(s).
- Inform stakeholders of the applied measures by updating the NOP Portal Headline News accordingly.
- Inform the Airport Unit via an email to [nm.alis@eurocontrol.int](mailto:nm.alis@eurocontrol.int).
- If necessary, organise a teleconference with ANSP(s), airport(s) and AOs affected.
- Provide feedback in FREE.

## 5.6. ATFCM MEASURES MANAGEMENT

### 5.6.1. ATFM regulations

To ensure that safety is not compromised whenever the traffic demand in an airspace or an aerodrome is forecast to exceed the available ATC capacity, measures such as ATFM regulations shall be coordinated with the relevant FMP and applied by the NM staff to regulate traffic volumes accordingly.

The decision for implementation / cancellation and ownership of the ATFM regulation lies with the FMP. Whereas the final decision on the regulation implementation is for the FMP, the details on the regulation itself should be coordinated with the NM except if otherwise specified through particular instruction.

All flights entering into a regulated TFV during the period of the regulation will be subject to ATFM measures, except if:

- The flight belongs to a flow that is exempted from the regulation by the traffic volume definition.
- The flight departs from outside the ATFCM area and the ATFCM adjacent area.
- The flight is already airborne when the regulation is created, or due to FSA / CPR a flight is pushed into an active regulation the flight will be forced into that regulation without delay.
- The flight is ATFM-exempted.

During pre-tactical operations the NM pre-tactical team shall be responsible for the application of regulations whereas during tactical operations, it shall be the responsibility of the NM tactical team.

A timely notification to the NM tactical team regarding the implementation of a regulation is crucial to ensure the effectiveness of the regulation.

All regulations shall have a reason to provide explanatory information on that regulation to external clients and post operations analysis. Any such cause shall only be taken from those pre-formatted descriptions available in the regulation editor, as the information is automatically taken by the ETFMS to create a delay coding in certain ATFCM messages for possible use by external systems.

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## 5.6.1.1. Network impact assessment of regulations

Using the Network Impact Assessment Display it is possible to evaluate the potential on-load and off-load situation when a regulation is to be applied on ETFMS / PREDICT.

It is possible for NM staff to create / deep rectify a regulation in the ETFMS / PREDICT and:

- Evaluate the impact on (active) traffic volumes and on-load / off-load areas.
- Evaluate the impact on Network delays. The visualisation / computation of this data is saved automatically and is therefore available for performance analysis.
- Visualise the regulations that are pushing traffic inside the rectified / created regulation period and the regulations where the rectified / created regulation is pushing traffic.

## 5.6.1.2. Regulation reason

The use of the most appropriate regulation reason is important and time should be taken to coordinate the best reason to reflect the true cause of delay.

The FMP, in conjunction with the NM, shall ensure that the cause of the regulation is input correctly in the appropriate field (cause field) of each regulation, and, consequently, is recorded for future analysis. In order to maintain consistency, the NM shall offer strong guidance on the appropriate regulation reason. However, the final decision for the regulation reason remains the responsibility of the relevant FMP. The cause shall be qualified by use of the pre-defined classification as indicated in the table below.

An ANM remark should always be used in addition to one of the standard regulation reasons.

As far as possible one of the recommended standard ANM remarks should be used.

Free text should only be used if one of the standard ANM remarks is not appropriate. If free text is used care should be taken to ensure it clearly reflects the cause of delay.

### ATC capacity / staffing

**Planned capacity:** as published in the Network Operations Plan.

**Declared capacity:** the more detailed capacity available during the strategic and pre-tactical process.

**Expected capacity:** the capacities (monitoring values and sector configurations) decided and finalised at the end of the pre-tactical process (16:00 UTC D-1).

If a regulation is applied because traffic is expected to be higher than the expected capacity (the capacity plan of at least D-1), then ATC capacity should be the regulation reason.

If a regulation is applied because the centre is unable to deliver the expected capacity then ATC staffing should be the regulation reason. It is an 'on the day shortage of capacity' and in general is due to controller unavailability.

### Airport delay

Airport delay should be recorded as follows:

- ATC capacity for when an airport ATC problem is responsible for the operational issue.
- Aerodrome capacity for when an airport infrastructure problem is responsible for the operational issue.
- Aerodrome services for when a support service problem is responsible for the operational issue (e.g. fire services, lack of de-icing equipment, ground handling etc.).

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## Airspace management / special events

Airspace management is focussed on normal military operations and the flexible use of airspace which can be both planned and unplanned.

Major military exercises, e.g. Tiger meet, are deemed special events and an ANM remark is added to identify them.

Regulation reason	CODE	Regulation Location	Guidelines for Application
ATC Capacity	C	D	En-Route: Demand exceeds or complexity reduces declared or expected ATC capacity Airport: Demand exceeds declared or expected ATC capacity.
		E	
		A	
ATC Industrial Action	I	D	Reduction in any capacity due to industrial action by ATC staff
		E	
		A	
ATC Routeings	R	E	Network solutions / scenarios used to balance demand and capacity
ATC Staffing	S	D	Unplanned staff shortage reducing expected capacity.
		E	
		A	
ATC Equipment	T	D	Reduction of expected or declared capacity due to the non-availability or degradation of equipment used to provide an ATC service.
		E	
		A	
Accident / Incident	A	D	Reduction of expected ATC capacity due to an aircraft accident / incident.
		A	
Aerodrome Capacity	G	D	Reduction in declared or expected capacity due to the degradation or non-availability of infrastructure at an airport, e.g. Work in Progress, shortage of aircraft stands etc. Or when demand exceeds expected aerodrome capacity.
		A	
Aerodrome Services	E	D	Reduced capacity due to the degradation or non-availability of support equipment at an airport e.g. Fire Service, De-icing / snow removal equipment or other ground handling equipment.
		A	
Industrial Action NON ATC	N	D	A reduction in expected / planned capacity due to industrial action by non ATC personnel.
		A	
Airspace Management	M	D	Reduction in declared or expected capacity following changes in airspace / route availability due to small scale military activity.
		E	
		A	
Special Event	P	D	Reduction in planned, declared or expected capacity or when demand exceeds the above capacities as a result of a major sporting, governmental or social event. It may also be used for ATM system upgrades and transitions. Large multinational military exercises may also use this reason. This category should only be used with prior approval during the planning process.
		E	
		A	
Weather	W	D	Reduction in expected capacity due to any weather phenomena. This includes where weather impacts airport infrastructure capacity, but where aerodrome services are operating as planned / expected.
		E	
		A	
Environmental Issues	V	D	Reduction in any capacity or when demand exceeds any capacity due to agreed local noise, runway usage or similar procedures. This category should only be used with prior agreement in the planning process.
		E	
		A	
Other	O	D	This should only be used in exceptional circumstances when no other category is sufficient. An explanatory ANM remark MUST be given to allow post ops analysis.
		E	
		A	

**Note:** Regulation Location: **D** - Departure; **E** – En-route; **A** - Arrival.

The FIELD 'Regulation Note' free text shall be used to elaborate on the cause.



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**5.6.1.3. ANM remarks table**

<b>Regulation Reason Weather: Clarification to be added to ANM remark</b>
Cloud Ceiling
Fog / Low Visibility
Heavy Rain
Removal of snow ice on taxiway, runway
De-icing aircraft
Ground handling impaired by conditions
Thunderstorms
Wind

<b>Regulation Reason Aerodrome Capacity: Clarification to be added to ANM remark</b>
Work In Progress
System Maintenance
Security Alert
Technical Failure
Reduced Stand Availability
High Demand

<b>Regulation Reason Aerodrome services: Clarification to be added to ANM remark</b>
Reduced Fire cover
Lack of De-icing / snow removal equipment
Non availability of ground handling.

<b>Regulation Reason ATC Equipment: Clarification to be added to ANM remark</b>
Radar Failure
Communication Equipment Failure
Calibration of Navigation Aids

<b>Regulation Reason ATC Capacity: Clarification to be added to ANM remark</b>
High Demand
High Traffic complexity
Planned sector configuration

<b>Regulation Reason Airspace Management: Clarification to be added to ANM remark</b>
Planned military exercise (Include the name)
Unplanned military activity

<b>Regulation Reason Special Event: Clarification to be added to ANM remark</b>
Sports Event (Include the name)
Governmental Meeting (Include the name)
State / VIP visit
Major military exercise (Include the name)
ATM transition (Include the name)

<b>Regulation Reason Other: Clarification to be added to ANM remark</b>
Volcanic Activity
Airspace closure due to extended or large scale military activity.
Traffic on-load due to disruption in neighbouring ACC (Include the name)

Standard remarks should be used as far as possible; 'Other' should only be used exceptionally. The remarks included above are based on events where the use of other is appropriate.

This list is not exhaustive and additional remarks may be used however where the above standard remarks are appropriate they should be used.

FMP and NMOC staff should be aware that only the last ANM remark entered is recorded for statistical purposes. Any changes to the ANM remark should ensure the standard phrase is included.



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The phrases 0 rate, zero rate or airport closed should not be used as this is the effect of the regulation rather than the cause.

To aid statistical retrieval the standard remarks should be added as they appear in the above tables. Specific details should be added where available after the standard remarks.

### 5.6.1.4. Apply a regulation

The initial identification of a need to apply a regulation may come from the relevant FMP or from the NM staff.

#### Procedure during pre-tactical operations

Where they identify a need for a regulation during pre-tactical operations and before D-1 17:00 UTC in winter time (16:00 UTC in summer time),

the **FMP staff** shall:

- Communicate (as early as possible) with the NM pre-tactical team in order to resolve an overload issue.
- Evaluate and consider possible alternatives to balance the foreseen traffic demand and capacity, such as scenarios.
- Request the regulation if there is no better alternative.
- Coordinate with the NM pre-tactical team the TFVs, the time period, the acceptance rate (normal, pending, MLS), window width and the regulation reason.
- Monitor the impact of the regulation on the traffic load.

Where they identify a need to apply a regulation,

the **NM pre-tactical team** shall:

- Communicate (as early as possible) with the FMP concerned in order to resolve an overload issue.
- Suggest the possibility of a regulation if there are no better alternatives.
- Coordinate with the FMP: the TFVs, the time period, the acceptance rate (normal, pending, MLS), window width and the regulation reason.

Following coordination with the relevant FMP,

the **NM pre-tactical team** shall then:

- Activate the regulation.
- Check load display (ensure that the regulation is correctly applied).
- Log in FREE any relevant details (especially if there is a high impact) for the NM tactical team attention (Network Brief).

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# ATFCM OPERATIONS MANUAL

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## Procedure during tactical operations

Where they identify a need for a regulation,

the **FMP staff** shall:

- Communicate (as early as possible) with the NM tactical team in order to resolve an overload issue
- Evaluate possible alternatives and request the regulation if there is no better alternative.
- Coordinate with the NM tactical team the TFCVs, the time period, the acceptance rate (normal, pending, MLS), window width and the regulation reason.
- Monitor the impact of the regulation on the traffic load and on the flight list.

Where they identify a need to apply a regulation,

the **NM tactical team** shall:

- Communicate (as early as possible) with the FMP concerned in order to resolve an overload issue.
- Suggest the possibility of a regulation if there are no better alternatives.
- Coordinate with the FMP: the TFCVs, the time period, the acceptance rate (normal, pending, MLS), window width and the regulation reason.

Following coordination with the relevant FMP,

the **NM tactical team** shall then:

- Activate and publish the agreed regulation.
- Ensure that the regulation is correctly applied (check load display, slot list).
- Inform the NM DOM in case of a major impact on the Network.
- Communicate unavoidable high delays in one particular regulation to AOs via an AIM and the NOP Portal Headline News.

### 5.6.1.5. Linking of regulations

When two regulations are present in the ETFMS they may present a common set of flights. The ETFMS issues slots according to the most penalising regulation (the one giving the greatest delay to a specific flight). Therefore, one of the regulations may force flights into the second regulation. Under these circumstances and to be sure that the slot assigned by ETFMS respects both regulations, the regulations are linked in ETFMS. This action ensures that the slot assigned respect the conditions defined in both regulations.

In some cases it is important that certain regulations are respected regardless of which one is the most penalising one (e.g. where there is a transition between configurations or in some exceptional conditions). The standard linking function of regulations was extended for these specific cases.

Regulations may be auto-linked or manually linked in the ETFMS. Auto-linking shall only be used when a very penalising regulation is forcing flights into other regulations that are to be protected due to operational reasons.

Overlapping of regulations, when splitting or collapsing sectors, shall never be done; it does not improve the spreading and can only cause unnecessary delay.

#### 5.6.1.5.1. Splitting regulated sectors

When splitting a regulated sector, if there is an overload in the new sectors, these should be regulated at their monitoring values, from the time they are active, and linked to the original collapsed sector.

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## Procedure

Where considered appropriate the FMP staff may split regulated sectors under their responsibility. In such cases,

the **FMP staff** shall:

- Introduce the changes in CIFO in a timely manner.
- If an overload is detected in any of the new sectors, decide either to apply ATFCM measures or to let ATC handle the overload locally.
- In case a regulation is needed, coordinate with the NM tactical team and provide all the associated information for the regulation.
- Check the result and coordinate with the NM tactical team in case further action is required.

When splitting a regulated sector, if an unacceptable bunching is observed in one or more of the newly opened sectors,

the **NM tactical team** shall:

- Coordinate on the appropriate measures with the FMP staff (if the FMP staff have not yet reported).
- If a regulation is requested, collect all associated information for the regulation.
- Regulate the appropriate sectors from the time the splitting takes place.
- Manually link the new regulation(s) to the regulation on the original sector(s).
- Check the result and coordinate with the FMP staff in case further action is required.

### 5.6.1.5.2. Collapsing regulated sectors

A change of sector configuration linked to a regulation(s) may make it necessary to collapse sectors within the ETFMS description. Such an action may require regulations to prevent any possible bunching at the end of the original regulation(s). By linking the new regulation to the original one(s) the bunching will be regulated in a controlled fashion. This is to ensure that all flights will have the new regulation as the most penalising one.

When collapsing sectors, if there is an overload, these sectors should be regulated at their MV before they become active, and linked to the original regulation(s).

When collapsing sectors usually the global capacity is reduced, e.g., from 3 sectors to 2 sectors. Therefore sufficient time must be given to enable the traffic that entered the sector(s) during the period with a higher global rate to leave the sector(s). Note that this also depends on sector size (the larger the sector, the longer a time margin is needed), but 10 minutes is an initially recommended value. It is advisable to check the occupancy counts of the regulated collapsed sector as well, and identify the number and type of flights impacted in order to better assess the time margin needed.

When collapsing sectors it is necessary to stop the original regulation(s) (which have a higher global rate) earlier than the configuration change time, and immediately start the new regulation(s) (which have a lower global rate).

For instance, if the regulated sectors A, B and C have to become a single ABC combined at 10:00, it is advised to regulate A, B and C till 09:50 and start the ABC regulation, linked to the other 3 at 09:50.

## Procedure

Where considered appropriate, the FMP staff may collapse regulated sectors under their responsibility. In such cases,

the **FMP staff** shall:

- Introduce the changes in CIFO in a timely manner.

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- If an overload is detected in any of the new sectors, decide either to apply ATFCM measures or to let ATC handle the overload locally.
- In case a regulation is needed, coordinate with the NM tactical team and provide all the associated information for the regulation.
- Check the result and coordinate with the NM tactical team in case further action is required.

When collapsing regulated sectors, if an unacceptable bunching is observed in one or more of the newly opened sectors,

the **NM tactical team** shall:

- Initiate coordination on the appropriate measures with the FMP staff (if the FMP staff have not yet reported).
- If a regulation is requested, coordinate all associated information for the regulation, and the time margin given for traffic to leave the sector.
- Regulate the appropriate TFVs taking into account the time margin for finishing and starting the regulations as appropriate.
- Manually link the new regulation(s) to the regulation(s) on the original sector(s).
- Coordinate with the FMP any further fine tuning of the time margin given to reduce delays.
- Check the result and coordinate with the FMP staff in case further action is required.

### 5.6.1.5.3. Linking geographically distant regulations

Two heavily regulated TFVs, although geographically apart from each other, may share such a significant amount of traffic that one could create a disruption on the other (e.g. bunching, overload, forcing of flights). This can lead to a situation of having an unsolved overload or bunching in one regulation because of flights forced by other regulations. In order to avert this scenario, these regulations shall be manually linked in the ETFMS.

Due to the complexity of the Network situation, in some cases it is not easy to detect geographically independent regulations that are influencing each other and therefore candidates for manual linking. The 'Influencing Regulations' feature in the ETFMS advises the user when a regulation is hugely influenced by other(s).

As an illustrative example, a low rate departure regulation in EDD\* between 06:00 and 09:00 with significant bunching at the end, and a low rate arrival in GCTS between 12:00 and 16:00. Linking these two regulations would solve the disruption created by the EDD\* departure regulation forcing its flights into the GCTS arrival regulation.

When creating / deep rectifying a regulation the Network Impact Assessment will list the regulations that are influenced / influencing by the regulation which is being edited. This data may be used to create the necessary links between regulations.

### Procedure

When an applied regulation has traffic bunching or an overload,  
the **NM tactical team** shall:

- Determine if there are influencing regulations that push traffic into the regulation under analysis.
- Contact the concerned FMP(s) associated to the bunching and coordinate possible extension of the regulation period in order to smooth the traffic at the end.

In case an agreement is not reached with the FMP, then:

- Manually link the regulations accordingly if they share a significant amount of traffic. Link the regulation having the problem with the one causing it.

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- Check if the result is satisfactory.

## 5.6.1.5.4. Auto-linking

In the ETFMS a very penalising regulation may force flights into a regulation that shall be protected (e.g. zero rate regulation).

It is not possible or practical to manually link this 'high priority' regulation to all other regulations likely to influence it. The auto-link function has therefore been devised to overcome the limitations of the manual linking function.

Auto-linking a 'high priority' regulation actually links it to any other existing regulation in the Network and, consequently, endeavours to make sure that its criteria are always respected.

Auto-linking was not developed to replace the manual linking of regulations, but as an exceptional measure to be used when absolutely necessary.

The auto-link shall only be used for:

- Zero rate regulations (with or without XCD);
- RVR regulations;
- Scenarios (if deemed appropriate according to the kind of scenario applied);
- Industrial actions;
- Very low rate regulations that have to be protected for operational reasons.
- It must be noted that:
- It is not possible to manually link regulations that have auto-link enabled;
- Multiple auto-links in the system may produce unusual effects as each auto-linked regulation competes with all other auto-linked regulations present;
- Auto-linking imposes a performance penalty on the system.

## Procedure

Wherever a situation exists that may require the use of auto-linked regulations, the **NM tactical team** shall:

- Where possible, consult and follow the specific procedures for the situation involved ensuring that the correct regulations are auto-linked (e.g. industrial action procedures or scenarios).
- Carefully consider the consequences of implementing an auto-link regulation when no specific procedures exist.
- Auto-link the required regulation(s).

## 5.6.1.6. Modify a regulation

The decision for modification and ownership of the ATFM regulation lies with the FMP. A timely notification to the NM tactical team regarding these changes is crucial to reduce safety risks.

There are two possibilities to modify a regulation, depending on the scope of the modification: either 'shallow rectify' or 'deep rectify'.

A 'shallow rectify' may be used to change a subset of the fields of the regulation editor, without impacting slot-issued flights. In order to publish changes made in the regulation editor it is required to have updates made either in the ANM traffic volume description or ANM remark or regulation reason.

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'Deep rectify' may change all editable fields, and let the user decide which flights are impacted. In order to publish changes made in the regulation editor in this case it is required to have updates made in the regulation period.

### 5.6.1.6.1. Modify the acceptance rate or period

Modifications to the time period and the acceptance rate should reflect an improvement or worsening of the conditions, or the necessity to avoid a bunching of traffic at the end of the regulation.

The Network impact of a deep rectification can be substantial, as all slots in that regulation will be recalculated. Caution is advised in these cases, especially if a high proportion of the affected traffic has already been sent SAMs, in order to avoid unnecessary CTOT changes.

Whenever there is a change in the regulation period or the acceptance rate to be implemented, the NM tactical team shall use the 'Deep Rectify' functionality in the ETFMS.

#### Procedure

When it is required to update the acceptance rate or period,

the **FMP staff** shall:

- Contact the NM tactical team to inform them about the change in the acceptance rate or the time period as soon as possible.
- Provide any additional information to be inserted in the ANM remark.
- Monitor the impact of the update on the traffic load and on the flight list.

Where they identify a need to update the acceptance rate or period,

the **NM tactical team** shall:

- Contact the relevant FMP to propose a change in the acceptance rate or the time period as soon as a possible overload risk is detected.

Following confirmation with the relevant FMP,

the **NM tactical team** shall then:

- Deep rectify the regulation and insert the changes as appropriate.

**Note:** In case of a change in the regulation period, the start time of a regulation that has already started shall not be modified.

- Check the traffic load, the delay figures and slot distribution.
- Provide feedback in FREE where appropriate.

### 5.6.1.6.2. Increase the supplementary rate

Supplementary rates are used for modification of the basic rate without changing the main rate for a short period.

Whenever there is an increase in the acceptance rate with supplementary rate (1 / 60, 2 / 60...); the NM tactical team shall use the '**Shallow Rectify**' functionality.

During the first period of the capacity update (closer to the current time) it is recommended to use the supplementary rate and reflect the increase in the acceptance rate. Deep rectification (update of the normal rate) should be used for the remaining period. Increasing the acceptance rate by using the supplementary rate avoids the recalculation of slots and is indicated for small increases of the acceptance rate.

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## Procedure

When it is required to insert a supplementary rate,  
the **FMP staff** shall:

- Coordinate with the NM tactical team a small increase of the acceptance rate (supplementary rate).
- Monitor the impact of the update on the traffic load and on the flight list.

Where they identify a need to insert a supplementary rate,  
the **NM tactical team** shall:

- Collect the appropriate information from the relevant FMP.
- Where relevant, advise the FMP on the appropriate rate to be modified.

Following confirmation with the relevant FMP,  
the **NM tactical team** shall then:

- Shallow rectify the regulation with the agreed value.
- Ensure that the changes took place correctly.
- Log any relevant feedback in FREE.

### 5.6.1.6.3. Modify the regulation reason

The regulation reason is used to ensure that proper and consistent information is provided to users and also contribute to correct statistical analysis. The regulation reason must accurately reflect the true reason for the regulation. The ANM remark field may also be used to provide additional information on that reason.

The last introduced regulation reason will be the only one recorded for delay attribution. See **Regulation reason** and **ANM remarks table** for more information on regulation reason.

Whenever there is a change to be implemented in the regulation reason or ANM remark, the NM tactical team shall use the '**Shallow Rectify**' functionality. If the acceptance rate has to be modified as well, the NM tactical team shall use the '**Deep Rectify**' functionality.

## Procedure

Where it is required to change a regulation reason or remark,  
the **FMP staff** shall:

- Contact the NM tactical team to inform them about the change in the regulation reason or remark.

Where such a request is received,

the **NM tactical team** shall:

- Where necessary, coordinate with the FMP on the appropriate regulation reason and remarks to ensure consistency.
- Shallow rectify the regulation with the new regulation reason and any possible needed remark.
- Log the change in the regulation reason or remark and any other feedback in FREE.

### 5.6.1.7. Temporary disabling of the ETFMS message output

The ETFMS function 'ATFCM message control' enables the NM tactical team to stop ETFMS message distribution. This function is used in case of a need for multiple actions, entries or

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modifications in the ETFMS, and subsequently to avoid several different messages going out to the same flights in a short time.

Situations to apply the procedure can include major change of airspace configuration with a multitude of regulation modifications or a major technical failure requiring a large number of regulations to be applied at one time.

The message output is turned off before the start of the modifications and then turned on when the modifications are complete.

When the messages are stopped, the ETFMS will continue operating as if messages were being released, but the SIP and Rerouting Proposal (RRP) functions will be disabled, What-If Reroutes (WIR) are no longer possible.

When the message output is re-enabled, only the last valid messages are sent out to the affected flights.

All messages issued or not are visible in the ETFMS and in the CHMI.

### Procedure

Once the decision has been made to stop the message distribution of the ETFMS, the **NM tactical team** shall:

- Inform the NM DOM and all other NM tactical team.
- Stop message output in the ETFMS.
- Make sure that all necessary changes will be completed as early as possible.
- Enable message output when all necessary modifications and entries are completed (all regulations in active status).
- Log the event in FREE.

#### 5.6.1.8. Cancel a regulation

A regulation shall be cancelled where it is no longer necessary. The decision for cancellation and ownership of the ATFM regulation lies with the FMP.

The cancellation of a regulation may create a sudden increase in traffic load that, even if handled appropriately by the requesting FMP, may negatively impact other ACCs.

### Procedure

Where they decide to cancel a regulation, the **FMP staff** shall:

- Contact the NM tactical team to request the cancellation of the regulation.
- Check the load after cancellation.

Where they identify a need to cancel a regulation,

the **NM tactical team** shall:

- Assess the Network impact.
- Contact the relevant FMP to propose the cancellation of the regulation.

Where it has been agreed with the relevant FMP to cancel a regulation,

the **NM tactical team** shall then:



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- Run a simulation before cancelling the regulation to assess the impact on downstream sectors in case of a very penalising regulation (e.g. low rate due to technical failure, strikes or even staffing).
- Inform adjacent ACCs (or any other negatively impacted ACCs) in case of heavy delays.
- Cancel the regulation in the ETFMS.
- Check the load display.
- Provide any relevant feedback in FREE.

**5.6.2. Applying a Mandatory Cherry Pick regulation**

A Mandatory Cherry Pick regulation (MCP) is used as a measure to solve short peaks (e.g. 1h or 1h 30min) of limited number of flights in congested areas. It consists of selecting flights creating complexity and applying ATFCM measures only to those flights. It may be used in combination with other measures (e.g. scenario) or other options available to the FMP.

The identification of the flights to be subject to the Network cherry pick measure shall be carried out by the FMP and the delay for cherry picked flights should not exceed 20 minutes. For predictability reasons, it is recommended to apply MCP to flights close to the congested area and try to minimize the lead time of the MCP regulation prior the start time of the hotspot. It is also recommended to monitor the effectiveness of the MCP after cherry picking the selected flights.

Flights already with a CTOT will not normally be selected for cherry picking. However, if a peak can be mitigated by bringing such a flight forwards then coordination should take place and the NMOC will improve the flight if possible. In addition, flights departing from A-CDM which are already in a departure sequence ('s' CDM status) should not be selected if there is any other possibility.

Flights inside the MCP regulation period are exempted from it. Once the cherry pick regulation is active, new FPLs, late updaters and ATC activated flights with ETO / CTO inside the regulation activation period will continue to be exempted. The cherry picked flights are allocated a unique colour code (pink) in the slot list and flight lists (EHMI / CHMI / NOP).

**Eligibility to apply a MCP regulation**

This procedure may only be applied by those FMPs that have been validated. Any official request to apply the MCP procedure shall be officially addressed to the NMOC email address: [mcp@eurocontrol.int](mailto:mcp@eurocontrol.int).

The validation of the candidature shall be done by replying affirmatively to the official request. After validation of the candidature, the requesting FMP goes through a tactical validation to familiarise with the procedure. The maximum duration of this transitional period is three months.

It has been agreed that any delay caused during the Transitional Phase will not be attributed to the individual FMPs concerned. A TFS set 'NETWORK' has been created for this purpose and will be used throughout.

After the necessary familiarisation, the NMOC and the participating FMP will agree on the end of the transitional period. During the operational phase, the delays will be attributed to the corresponding FMP traffic volume set.

Whenever a new FMP / ACC becomes eligible and starts to apply the MCP procedure, either on transitional or fully operational mode, an Information Notice will be updated accordingly. The Information Notice (IN) also indicates the Traffic Volume Set (TVS) to which the delays shall be attributed. The IN will be published internally for NMOC staff and externally via the NOP Portal.

**Procedure**

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Having decided to use a cherry pick regulation to overcome a possible overload, the **FMP staff** shall:

- Asses the flight list.
- Identify from the flight list those flights that are causing complexity. If there is more than one flight from the same AO in the peak or if one of the flights is a candidate for FL capping, consider giving the AO a choice of which flight(s) should be subject to the cherry pick measure.
- Provide the following information to the NM tactical team:
  - The name of the sector / TFV;
  - Precise time of the occupancy peak;
  - Call sign of the flights to be cherry picked;
  - ETO of the first flight to enter the sector;
  - Required CTO of all flights to be cherry picked.

The **NM tactical team** shall then:

- Check if on-loaded sectors have available capacity.
- Coordinate with adjacent FMPs on what extra traffic they may get and confirm they can safely handle the cherry-picked flights.
- Refuse the operation and report to the requesting FMP if the previous two items are not met.
- Create the cherry pick regulation and cherry pick the flights according to the information provided by the FMP if the first two items are met, ensuring that:
  - The **regulation Start Time** must be **15 minutes before ETO of the first flight** to enter the sector;
  - The **regulation End Time** must be **1 minute after the last required CTO**.
  - The **appropriate regulation reason** is selected and the **ANM remark** shall contain the comment '**Network Cherry Pick**'.
- Cherry pick those flights nominated by the FMP and force them in the slot list to the required CTO.
- Assess the NID to ensure that there is no adverse effect due to the application of the new CTOT to the flight (e.g. Flight pushed in a Zero Rate regulation, new IFPS violations, etc.).
- Provide feedback in FREE.

### 5.6.3. Rerouting flights in the ETFMS

A reroute is an alternative offered to an airspace user in case of substantial delay, unavailability of a filed route or flight efficiency purposes.

What-if Reroute and Group Rerouting are functions within the NM that are designed to assist the NMOC staff to find viable alternative routes.

The ETFMS considers the routes as well as the possible flight level limitations and gives the consequent result in terms of delay, miles to fly, fuel and route charge information.

### Procedure during tactical operations

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In case of significant disruption to the Network, and in order to reduce delays in a particular area or assist a flight(s) suffering a disproportionate delay,

the **NM tactical team** shall:

- Identify any flight(s) that are significantly delayed.
- Set in the ETFMS the necessary parameters for the calculation of the reroute.
- Decide on how many flights should be rerouted.
- Coordinate with the responsible NM tactical team member to ensure that the situation is not likely to change / improve in the next couple of hours.
- Assess the NID in order to identify the best CTO(T).
- Coordinate with the FMPs that could be heavily impacted.
- Select the correct option according to the purpose of the rerouting (e. g. ATFCM, FLIGHTEFFICIENCY, AOWIR).
- Send RRP(s).

#### 5.6.4. Implementation of scenarios

NM and / or FMP staff use a number of predefined scenarios in order to move traffic flows out of critical sectors / areas and achieve a global decrease of delay or prevent the implementation of regulations. This task is performed by the NM pre-tactical team during pre-tactical operations and the NM tactical team during tactical operations.

These scenarios are prepared in advance (see Creation and maintenance of scenarios) and may be mandatory or advisory. The list of available scenarios is promulgated on the NOP Portal:

<https://www.public.nm.eurocontrol.int/PUBPORTAL/gateway/spec/index.html>

Scenarios should normally be coordinated and implemented in the pre-tactical phase. When there is a need / request in the tactical phase, it should be investigated whether it is really necessary or if other measures like cherry-picking of individual flights are not sufficient. Scenarios are always auto-linked.

Criteria to be considered are:

- Number of flights captured;
- Implementation should normally be at least 3 hours in the future;
- Where possible the EOBT of the flights involved should be at least 2 hours in the future in order to minimise the risk of late filing for AOs and give them enough time to react.
- It is possible to determine the impact of scenarios based on the following indicators:
  - Flying time.
  - Distance.
  - Route charges.
  - Fuel consumption.

The ETFMS produces in a regular basis results on the impact of scenarios and they are sent to the Post Operations team for analysis.

#### Procedure during pre-tactical operations

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During pre-tactical operations in the area of responsibility of an FMP,  
the **FMP staff** shall:

- When considered appropriate, contact the NM pre-tactical team to request the application of scenarios.
- Coordinate with the NM pre-tactical team the scenarios applicability as well as other possibilities to properly balance traffic demand and available capacity.
- Based on the FMP reason to apply a Scenario, provide:
  1. Regulation reason for the Scenario application;
  2. Additional details to be included in the ANM Remark of the Scenario measure if required (use standard remarks of ATFCM Operations Manual 5.6.1.3 ANM Remarks Table as far as possible).

Having received a request for a scenario from an FMP, or having decided on the necessity of such an action themselves,

the **NM pre-tactical team** shall:

- Examine the problem the scenario is expected to mitigate.
- Evaluate any possible alternative less penalising solutions and suggest them as alternatives.
- If scenario application is necessary, load the relevant scenario and adjust the time parameters and remarks to fit the current circumstances.
- Assess the Network impact.
- Coordinate and agree its use with those FMPs that will be affected.
- When agreed by all affected FMPs:
  - Implement the scenario measure in PREDICT.
  - Set a delay threshold value of 20 minutes.
  - Auto-link the scenario (if deemed appropriate according to the kind of scenario applied).
  - As provided by the FMP:
    - Modify the measure reason "ATC Routeings" to a Scenario application reason;
    - Include details on Scenario application in the ANM Remark field of the measure if required (use standard remarks of ATFCM Operations Manual 5.6.1.3 ANM Remarks Table as far as possible).
  - Include descriptive information on its application in the INP and on the NOP Portal.
  - Include information in the Network Brief to enable NM tactical team to manage its use effectively.
- Check that the applied scenario functions as expected and coordinate any further changes as necessary.

**Procedure during tactical operations**

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Where the situation requires the application of a scenario,

the **FMP staff** shall:

- Contact the NM tactical team to request the application of that scenario.
- Based on the FMP reason to apply a Scenario, provide:
  1. Regulation reason for the Scenario application;
  2. Additional details to be included in the ANM Remark of the Scenario measure if required (use standard remarks of ATFCM Operations Manual 5.6.1.3 ANM Remarks Table as far as possible).

Having received a request for a scenario from an FMP, or having decided on the necessity of such an action themselves,

the **NM tactical team** shall:

- Assess the validity of the FMP request (if requested by the FMP) or make sure that the FMP fully understands and accepts the implications of such an action (if proposed by the NM tactical team).
- Assess the impact on AOs.
- Check on-loaded sectors in other relevant areas.
- Inform all relevant FMPs involved of the traffic revision expected during the time of the scenario's validity (CDM process).
- Where an FMP refuses to accept the traffic revision resulting from the application of the scenario, the scenario shall be rejected.

Where all affected FMPs accept the traffic revision:

- Load the appropriate scenario
- Adjust the time parameters and remarks to fit the current circumstances.
- As provided by the FMP:
  - Modify the measure reason "ATC Routeings" to a Scenario application reason;
  - Include details on Scenario application in the ANM Remark field of the measure if required (use standard remarks of ATFCM Operations Manual 5.6.1.3 ANM Remarks Table as far as possible).
- Set a delay threshold value of 20 minutes.
- Auto-link the scenario (if deemed appropriate according to the kind of scenario applied).
- Inform all FMPs involved of the decision and actions taken.
- Check that the applied scenario functions as expected and further coordinate as necessary.

### **5.6.5. Management of EU restrictions**

Amongst the different flow measures to use in the event of aerodrome or airspace unavailability, the NM has the possibility to apply an "EU Restriction".

The use of EU Restriction offers two main advantages:

- the FPLs are rejected by IFPS, no delay is generated in the ETFMS,
- more accurate traffic capture (out of area traffic, aircraft equipment, military...).

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Compared to a zero rate regulation, the EU Restriction will invalidate FPLs, therefore AOs will have to refile avoiding the unavailable period of the aerodrome or airspace concerned. Although the decision to apply an EU Restriction lies with the NM, it will only be done through a CDM process with the concerned FMP after assessing the criteria listed below:

- **Lead Time:** At least 2 hours before the time of effectiveness are required for the measure to be fully efficient.
- **Stability:** It should concern only planned events at strategic and pre-tactical level or major disruptions in tactical operations, where there is evidence that no improvement is expected in the near future.
- **Duration:** This parameter must be seen in conjunction with the stability one but a minimum of 1 hour is considered necessary.
- **Publication:** EU Restriction must be supported by official information (NOTAM, AIP supplement...).

**Note:** When the aerodrome or airspace unavailability is known in advance, the CDM process should take place between the concerned National Environment Coordinator (NEC) or RAD coordinator, or FMP and the NM AD NOSup.

The assessment and the application of the EU restriction should be done then based only on stability, duration and publication criteria.

## Procedure

When it is notified of an aerodrome or airspace unavailability and an EU restriction might be applied,

**Either,**

the **FMP staff** shall:

- Collect all relevant information about the above criteria.
- Communicate (as early as possible) with the SNOC on duty to inform of a future aerodrome or airspace unavailability.
- Assess with the SNOC the criteria listed above (lead time, stability, duration and publication).

**Or,**

the **SNOC** shall (as soon as the event is notified via any means, e.g. NOTAM, phone call, news...):

- Communicate (as early as possible) with the relevant FMP and confirm that they are aware of the unavailability (if the FMP have not reported yet).
- Assess with the FMP the criteria listed above (lead time, stability, duration and publication).

Following coordination between the FMP and the SNOC, if the criteria listed above are met, the **SNOC** shall:

- Coordinate with the NM AD NOSup the implementation of an EU Restriction. Before enabling the restriction in the NM systems, the NM AD NOSup shall make a FPL validation to ensure it will produce the expected effect.
- Publish information about it on the NOP once the EU Restriction is implemented.

**Note:** If the criteria listed above are not met, see **Management and recovery of a disruption**.

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### 5.6.6. ATFCM measures on the ATFCM Adjacent Area

FMPs of Adjacent Areas may request the NMOC to apply ATFCM measures for the airports within their FIR or for significant points at the interface between the FIR and the NM Area of operations. Requests may come in case of capacity problems or any other disturbances to ATM.

The NMOC may also initiate ATFCM measures for flights departing from the Adjacent Area into the NM Area of responsibility.

The NMOC provides limited ATFCM services to some FMPs of Adjacent Areas. The service level provision to these FMPs is specified in their NM Agreement.

Flights originating from these FIRs and entering the NM Area of operations may be subject to ATFCM measures.

This is an exceptional measure that may help in resolving problems within the Network in the NM Area of responsibility (e.g. RR measures from Egypt to avoid Cyprus).

Even if for other reasons a detailed environment is available for such FIRs (e.g. sectors, routes), it is not the NM's responsibility to monitor / apply any measure on such entities.

#### Procedure

A request may be made by an Adjacent FMP or the NM tactical team may contact the FMP for the implementation of ATFCM measures. In such cases,

the **NM tactical team** shall:

- Refer to the NM Agreement in case of doubt regarding the service level that may be provided.
- Contact the FMP, in case the initiative comes from the NMOC (depending on the governing NM Agreement and type of measure this may be compulsory or not), or evaluate the request from the FMP.
- After both parties (adjacent FMP and the NMOC) agree on the measures, assess the impact of such measures on the Network.
- Coordinate action with any other affected FMPs should it become necessary (e.g. reroute scenario implementation).
- Either reject the proposed ATFCM measures or introduce them into the ETFMS, as agreed.
- Disseminate information to all parties concerned by appropriate means like AIM, NOP Portal, ANM and emails to AOs.
- Monitor the effect and impact on the Network of the ATFCM measures implemented in the Adjacent Area.

### 5.7. MANAGING A FLIGHT IN THE ETFMS / PREDICT

#### 5.7.1. Managing the filed tactical flight model (FTFM)

##### 5.7.1.1. Manual exemptions

The exemption status of a flight may, under some circumstances (e.g. wrong filing of the flight plan), be manually modified by the NM tactical team in the ETFMS (approval for ATFMX status). This can be done for both regulated and non-regulated flights.

It should be noted that exempted flights will be exempted from all regulations, while excluded flights will only be excluded from a specified regulation. Exempted flights are not subject to any ATFCM delay.



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**Procedure**

Where a flight is not automatically exempted and it is identified as a candidate for ATFMX status,

the **FMP staff** shall:

- Contact the NM tactical team and request the manual exemption for a flight departing from their area of responsibility.
- Justify the reason of the request.

On receipt of a request for ATFMX status **from an FMP**,

the **NM tactical team** shall:

- Check the associated information in the flight plan.
- Exempt the flight manually.
- Provide feedback in FREE.

On receipt of a request for ATFMX status **from an AO**,

the **NM tactical team** shall:

- Refer the caller to the local AIS at the aerodrome of departure from where the request for ATFMX status can be made.
- Whenever this cannot be achieved, then refer the caller to the relevant national AIP of the country in which the aerodrome of departure is located. The AIP shall contain the rules for acquiring permission to use STS / ATFMX in a flight plan message.

In exceptional cases, for a **hospital flight** (STS / HOSP) with delay that becomes critical with no exemption obtained and requesting ATFMX status,

the **NM tactical team** shall:

- Check the associated information in the flight plan and the traffic load.
- Coordinate with the relevant FMP(s) to seek their approval.

Based on these actions,

the **NM tactical team** shall:

- Decide whether or not to exempt the flight manually.
- Log the call sign and city pair of that flight in FREE.

**Note:** A number of status indicators provide automatic exemption from ATFCM slot allocation. These indicators are:

- [STS / HEAD] flights carrying Head of State or equivalent status;
- [STS / SAR] flights conducting search and rescue operations;
- [STS / ATFMX] flights authorised by the relevant State to include in the flight plan;
- [STS / MEDEVAC] flights carrying a life-critical emergency evacuation;
- [STS / FFR] flights engaged in fire-fighting.

These designators shall only be used with the proper authority. Any wrongful use of these designators to avoid flow regulation shall be regarded by the relevant states as a serious breach of procedure and shall be dealt with accordingly. The relevant National AIP should indicate an appropriate office dedicated to issuing STS / ATFMX.



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Each month, the data on all flights using STS / ... indicators are sent to states for analysis. It is expected that follow-up action will be taken where evidence shows that there has been a misuse of this important facility.

### 5.7.1.2. Flight deactivation

It is possible for a flight to be wrongly activated in the ETFMS. Such a situation may result from:

- ATC activated. This situation may result from an erroneous FSA or CPR generation.
- TACT activated:
  - This situation may result from a flight reaching its ETOT / CTOT with no other notification (FSA, CPR) necessary, or
  - An erroneous TTOT from a T-DPI-s or A-DPI.
- Terminated. This case may happen after the ATA of a flight that was wrongly ATC activated or TACT activated is reached, but the flight did not depart. **Undo activation of a terminated flight may as well be necessary in order to enable processing of an ACH message in case of a diverted flight (CPRs continue to correlate to the initial FPL until ACH message is processed).**

The IFPS is unable to process any messages (DLA, CHG and CNL) for any flight while it is **ATC activated, TACT activated (only due to A-DPI) or Terminated**. Where an AO has a necessary flight plan update for such a flight but it is not yet airborne, that flight must be deactivated in order to apply the update. FMP/TWR staff, AOs, or IFPS staff may identify and report such flights to the NM tactical team.

#### Procedure

**Where a flight is identified as wrongly TACT activated,**

**the TWR shall:**

**Submit a C-DPI with reason UNDOADPI which will automatically deactivate the flight, or**

**where a flight is identified as wrongly ATC activated, TACT activated or Terminated,**

**the FMP/TWR staff shall:**

- Contact the NM tactical team and request flight deactivation.

Upon notification of a wrongly ATC activated, TACT activated or Terminated flight,

**the NM tactical team shall:**

- Verify the status of the flight(s), for example, if CPRs are being received for that location and / or contact the TWR at the aerodrome of departure.
- Deactivate (undo activation) the flight in the ETFMS.

### 5.7.1.3. Cancel a flight in the ETFMS

In certain circumstances flights which have been cancelled in the IFPS may be present in the ETFMS due to a discrepancy between the IFPS and the ETFMS.

A flight cancelled in the IFPS but wrongly ATC / TACT activated remains active in the ETFMS. This happens because the ETFMS rejects cancelling an ATC / TACT activated flight. In this case, the flight must be manually cancelled in the ETFMS.

Note that when a flight is cancelled in the ETFMS it is only cancelled in that system alone and not in the IFPS or for ATC.

This procedure is aimed to free capacity in such circumstances.

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**Procedure**

Where a request to cancel a flight in the ETFMS is received from IFPS staff,

The **NM DOM** shall:

- Ensure that the flight is not airborne.
- In case the flight has been wrongly activated, deactivate the flight.
- Cancel the flight in the ETFMS.
- Log the event in FREE.

**5.7.1.4. Exclude / include a flight from / in a regulation**

The exclusion of a flight from a regulation will normally happen when a flight has been wrongly captured by the traffic volume or can be handled as an extra by the FMP. A flight may be manually excluded only after coordination with the relevant FMP(s). **Requests for exclusion of a flight from a regulation may be made via the telephone, the E-Helpdesk or the B2B interface.**

It should be noted that flight exclusions may cause an inaccurate sector load count, so caution should be used with this procedure.

A flight may be excluded from only one regulation, while if it is exempted, the flight will be exempted from all regulations and all other ATFCM measures.

Excluded flights can be re-included if requested by the relevant FMP.

**Procedure**

Where a flight is identified to be excluded / included,

the **FMP staff** shall:

- Contact the NM tactical team to request exclusion / inclusion from / in a regulation and provide valid reasons.

**Note: A request for exclusion from a regulation may be made via the telephone, the E-Helpdesk or the B2B interface.**

the **NM tactical team** shall:

- Assess the impact of such an action on the Network.
- Exclude the flight from the regulation where there is no impact on the Network.
- Refuse exclusion where there is a negative impact on the Network.
- Re-include a flight in a regulation on FMP request (only if it was previously excluded).
- Log the event in FREE.

**5.7.1.5. Last minute improvement**

The aim of this procedure is to take advantage of very short notice improvements made available in a particular ACC or sector. The main targets of such improvements are short haul flights with disproportionate delays (compared to flying time).

The procedure applies to flights operating in the following conditions:

- Entirely within the airspace of one ACC or between two adjacent ACCs and
- Entering the concerned sector in the next 30 minutes.

Based on the operational conditions, the following scenarios may occur:

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- Flight(s) will receive a slot cancellation message (SLC).
- Should the flight(s) be subject to other regulation that is not part of the procedure it (they) may keep the current CTOT.
- Should the flight(s) be subject to other regulation that is not part of the procedure it (they) will receive a slot revision message (SRM).

Excessive use of this procedure may indicate that the TFV description should be reviewed.

In order to maintain necessary records of such events, confirmation by fax / email may be required by the NM Tactical team.

**Procedure**

The **FMP staff** shall:

- Monitor the slot allocation list.
- Detect flights with disproportionate delay.
- Coordinate with the sector(s) and / or adjacent FMPs concerned.
- Request by phone the NM tactical team to apply the slot exclusion for a specific flight and if requested by the NM tactical team, confirm by fax / email in the following format: '..... FMP, request exclusion for flight ..... from regulation .....

Having received a request from an FMP,

the **NM tactical team** shall:

- Verify that the flight meets the conditions listed above.
- Where it meets the conditions, exclude the flight, otherwise reject the request.
- Log the event in FREE.

**5.7.2. Managing the regulated tactical flight model (RTFM)****5.7.2.1. Manual creation of a slot**

On occasions it may be possible to allocate an additional slot to the existing rate at a specific time period. This slot may be:

- allocated (to a coordinated flight) or
- released (for ETFMS use).

Such extra slots must be given by an FMP and manually created by the NM tactical team.

When the Network Impact Display (NID) is displayed there is a possibility to perform a what-if analysis for different slot times that permits:

- Move forward or backward the CTO(T) in 1 or 5 minute intervals.
- Move the CTO(T) forward or backward from/to the first encountered IFPS error(s) to any CTO(T) that presents error changes.

**Note:** The maximum evaluated referenced time interval that is 4 hours

**Procedure**

Having agreed an extra slot with an FMP,

the **NM tactical team** shall:

- Create that new slot in the slot list.

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- Identify the status of the new slot (not blocked / blocked / booked).
- Request the FMP to update the monitoring value, or update the monitoring value as agreed.

## 5.7.2.2. Manual deletion of a free slot

The NM tactical team may identify unused slots in a time period where bunching has occurred and decide to delete these slots in order to protect from an over-delivery. They may inform the relevant FMP when they have deleted such slots.

**Note:** Free slots are not visible to FMPs.

### Procedure

Where **NM tactical team** identify any unused slots in a time period where bunching has occurred, they shall:

- Delete the slot(s) in the slot list.
- Check the results and inform the FMP if relevant.

## 5.7.2.3. Manual sending of a SIP and assigning a free slot

When a regulation has available slots (e.g. after an improvement in the acceptance rate of the regulation) and the ETFMS is not reacting automatically to improve flights, a Slot Improvement Proposal (**SIP**) may be manually sent.

The reasons for doing so can be the result of requests from AOs and / or the responsible FMP or the NM tactical team after monitoring a slot list and identifying the need for a manual intervention.

### Procedure

The **FMP staff** shall:

- Monitor the delayed flights flight list.
- Identify the flights with excessive delay or flights that can be improved (including those flights proposed by AOs).
- Identify any period in the regulation where additional traffic can be accepted.
- Contact the NM tactical team and propose improvements for the identified flights.

The **NM tactical team** shall:

- Monitor the delayed flights flight list / slot list.
- Identify the flights in slot issued status with excessive delay or flights that can be improved (including those flights proposed by AOs or FMP staff).
- Ensure that the improvement respects the taxi time (MINLINEUP if in REA status) of the departing aerodrome.
- For aircraft originating from A-CDM, ensure that the improvement is not before the last known TTOT.
- Check the slot list for available slots and where any are found:

**Either:**

- If the flight is in SWM status, send a SIP to that flight for the available slot.

**Or:**

- If the flight is in REA or RFI status, allocate the available slot to that flight.

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## 5.7.2.4. CTOT improvement management

**CTOT improvement** is an action to improve a slot-issued flight in the ETFMS by proposing a new CTOT close to its ETOT (or last received TTOT for A-CDM departures) without creating an overload. This action will result in the allocation of a new CTOT for that flight.

CTOTs may be manually modified in the ETFMS upon request from FMP / TWR staff or AOs.

This procedure does not apply to the slot swap procedure.

It is important that flights are not manually forced into low visibility arrival regulations unless they have a compliant RVR value.

**Note:** When a flight is manually forced and a profile update (due to a CHG or DLA) takes the flight outside of the regulation it was forced into, the flight will be unforced and re-calculated based on the new profile.

When the Network Impact Display (NID) is presented there is a possibility to perform a what-if analysis for different slot times that permits:

- Move forward or backward the CTO(T) in 1 or 5 minute intervals.
- **Evaluate the impact on IFPS errors.**
- **Evaluate the impact on regulations and active traffic volumes.**

**Note:** The maximum evaluated referenced time interval **by the NID** is 4 hours **from the reference TOT**.

**Note:** Requests for CTOT improvement may be made via the telephone, the E-Helpdesk or the B2B interface.

**Procedure**

The **FMP staff** shall:

- Monitor the delayed flights flight list.
- Identify the flights with excessive delay that could be improved within **Most Penalising** regulations of their respective area of responsibility.
- **If the flight is in slot issued status and REA or RFI status, contact the NM tactical team and propose new CTO(T)s for the identified flights.**

**Note:** Request may be made via the telephone, the E-Helpdesk or the B2B interface.

The **TWR staff** shall:

- **Monitor the delayed flights flight list.**
- **Identify the flights with excessive delay that could be negatively impacting TWR operations.**

**If the flight is in slot issued status and REA or RFI status, contact the NM tactical team and propose new CTO(T)s for the identified flights.**

**Note:** Request may be made via the telephone, the E-Helpdesk or the B2B interface.

The **NM tactical team** shall:

- Monitor the delayed flights flight list / slot list.
- Identify the flights with excessive delay that could be improved or flights proposed by AOs or FMP / TWR staff.
- Ensure that the flight is **in** slot-issued status and REA or RFI status.

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- Ensure that the improvement respects the taxi time (MINLINEUP if in REA status) of the departing aerodrome.
- For aircraft originating from A-CDM, ensure that the improvement is not before the last known TTOT. Coordination between the NM tactical team and FMP / TWR (A-CDM) may be triggered to advance the TTOT (if the desired CTOT is before the last TTOT).
- Identify any available capacity in the counts and select the most appropriate period to force the flight.
- Assess the Network impact before confirming the 'force CTO(T)' action by checking the Network Impact Display (**NID**).
- In case of a negative impact on the Network, contact the relevant FMP(s) about the possibility of improvement for such a flight.
- Force the flight if there is no significant impact on the Network or if the FMP(s) accepts the new CTO(T).
- Release the forced flight for further processing in the ETFMS.
- If no improvement is possible for a flight, check the rerouting / level capping possibilities and ensure that any possible proposal found is sent to the AO.

#### 5.7.2.5. CTOT extension management

CTOT extension requests are managed differently depending on whether the flight is departing from an A-CDM (**CDM or Advanced ATC Tower**) or a non-CDM (**Standard**) airport.

**Note: Requests for CTOT extension may be made via the telephone or the E-Helpdesk.**

##### Departures from non-CDM (**Standard**) airports

Where an aircraft is departing from a non-CDM airport and cannot be released in time to respect its slot tolerance window (default is -5, +10min), the AO or the FMP / TWR may request a slot extension for that flight. **Provided** the flight qualifies for an extension, it should be given. Otherwise the AO shall send a DLA message. These slot extensions are limited to a maximum of 10 minutes.

A request for a CTOT extension for traffic departing from non-CDM airports qualifies when these conditions are met:

- The request comes within 20 minutes of the COBT required to achieve the slot (CTOT - taxi time - less than 20 minutes) and no later than the COBT (such a request **may** originate from the AO, **FMP or TWR**).
- **The request comes** when the current clock time has reached COBT (such a request **may only originate from** the FMP / TWR).
- No prior slot extension has been given.

The delay due to CTOT extension requests will not be attributed to **the FMP that requested the regulation**.

##### Procedure

For traffic departing from non-CDM airports, having received a CTOT extension request from an AO or having decided to request it,

the **FMP/TWR staff** shall:

- Check if the flight meets the conditions above **and check with the AO if the request has not already been done by the AO itself and if not,**
- Pass the request to the NM tactical team.

**Note: Request may be made via the telephone or the E-Helpdesk.**

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For traffic departing from non-CDM airports, having received a CTOT extension request from an AO or FMP / TWR,

the **NM tactical team** shall:

- Check if the flight meets the conditions above.
- **Check the extension does not generate IFPS errors.**
- **Check the extension does not generate an overload. The capacity should be respected in all regulations, not just the most penalising one.**
- Assess the Network impact.
- Examine whether the flight can be swapped with a flight which is ready to depart.

And then **either**:

- Give the slot extension if the conditions are met and there is no significant impact on the Network and select the slot extension checkbox.
- **Exclude the flight from the regulation if there is no significant impact on the Network in case the flight is at the end of the regulation and the extension would place the flight outside the regulation period.**

**Or:**

- Refuse the extension if the conditions are not met and / or there is a negative impact on the Network and request the AO to send a DLA message.

#### **Departures from Advanced ATC Tower airports**

Flights departing from Advanced ATC Tower airports are also limited to a maximum of 10 minutes slot extension. The AO or the FMP / TWR may request a slot extension for the flight.

A request for a CTOT extension for traffic departing from Advanced ATC Tower airports qualifies when these conditions are met:

- The request comes within 20 minutes of the COBT required to achieve the slot (CTOT - taxi time - less than 20 minutes) and no later than the AOBT (such a request may originate from the AO, FMP or TWR).
- The request comes when the current clock time has reached COBT (such a request may only originate from the FMP / TWR).
- No prior slot extension has been given.

The delay due to CTOT extension requests will not be attributed to the FMP that requested the regulation.

#### **Procedure**

For traffic departing from Advanced ATC Tower airports, having received a CTOT extension request from an AO or having decided to request it,

the FMP/TWR staff shall:

- Check if the flight meets the conditions above and check with the AO if the request has not already been done by the AO itself and if not,
- Pass the request to the NM tactical team.

**Note:** Request may be made via the telephone or the E-Helpdesk.

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For traffic departing from Advanced ATC Tower airports, having received a CTOT extension request from an AO or FMP / TWR,

the NM tactical team shall:

- Check if the flight meets the conditions above.
- Check the extension does not generate IFPS errors.
- Check the extension does not generate an overload. The capacity should be respected in all regulations, not just the most penalising one.
- Assess the Network impact.
- Examine whether the flight can be swapped with a flight which is ready to depart.

And then either:

- Give the slot extension if the conditions are met and there is no significant impact on the Network and select the slot extension checkbox.
- Exclude the flight from the regulation if there is no significant impact on the Network in case the flight is at the end of the regulation and the extension would place the flight outside the regulation period.

Or:

- Refuse the extension if the conditions are not met and / or there is a negative impact on the Network:
  - If the flight is not yet taxiing, NM tactical team shall:
    - Request the AO to send a DLA/CHG message.
  - If the flight is already taxiing, NM tactical team shall:
    - Coordinate with the FMP/TWR to either send next available CTOT, or
    - Request the TWR to apply the return to the stand procedure.

Note: If the return to the stand procedure is applied, the AO shall send a DLA/CHG message.

### Departures from CDM airports

Flights departing from CDM airports are also limited to a maximum of 10 minutes slot extension. **Only the FMP / TWR may request a slot extension for the flight.**

A request for a CTOT extension for traffic departing from CDM airports qualifies when these conditions are met:

- The request comes after the ASAT (such a request may originate from the FMP or TWR).
- No prior slot extension has been given.

The delay due to CTOT extension requests will not be attributed to the FMP that requested the regulation.

### Procedure

For traffic departing from CDM airports, having received a CTOT extension request from an AO,



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the **NM tactical team** shall:

- Not give a slot extension.
- If received via telephone or at the **E-Helpdesk**, give (or send) the following answer: ‘Your flight is departing from a CDM airport. If your flight has received start-up approval only the pilot can call the TWR (over the frequency) for a slot extension. If your flight has not received start-up approval an update of the TOBT is required’.

**For traffic departing from CDM airports, having received a CTOT extension request from an AO or having decided to request it,**

**the FMP/TWR staff shall:**

- **Check if the flight meets the conditions above,**
- **Pass the request to the NM tactical team.**

**Note: Request may be made via the telephone or the E-Helpdesk.**

The **NM tactical team** shall:

- **Check if the flight meets the conditions above.**
- **Check the extension does not generate IFPS errors.**
- **Check the extension does not generate an overload. The capacity should be respected in all regulations, not just the most penalising one.**
- Assess the Network impact.

And then **either**:

- Give the slot extension if the conditions are met and there is no significant impact on the Network and select the slot extension checkbox.
- Exclude the flight from the regulation if there is no significant impact on the Network, in case the flight is at the end of the regulation and the extension would **place the flight** outside the regulation period.

**Or:**

- Refuse the extension if the conditions are not met and / or there is a negative impact on the Network:
  - **If the flight is not yet taxiing, NM tactical team shall:**
    - **Request the AO to send a DLA/CHG message and to update the TOBT by contacting the handling agent.**
  - **If the flight is already taxiing, NM tactical team shall:**
    - **Coordinate with the FMP/TWR to either send next available CTOT or,**
    - **Request the TWR to apply the return to the stand procedure.**

**Note: If the return to the stand procedure is applied, the AO shall send a DLA/CHG message and update the TOBT.**

#### 5.7.2.6. Slot swapping

The ETFMS slot swapping functionality is used to swap flights requested by AOs or FMPs. Additionally, it may be used to improve another flight if an aircraft operator requests a slot extension (i.e. instead of forcing the flight).

AOs shall only request swaps concerning flights for which they are the responsible operator (OPR in Item 18 of the FPL) or where there is a formal agreement between both AOs to swap flights.

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The NM tactical team will neither check that these flights are from the same operators nor that a formal agreement exists.

FMPs may request swaps for two flights of the same AO or, during critical events at airports, also between any different AOs.

Conditions:

- A request for a swap from an AO, TWR or FMP is received.
- For flights departing from A-CDM, the flight must **not** be **pre-sequenced** (not in 's' CDM status).
- The two concerned flights must be in slot-issued status.
- The two flights must be subject to the same most penalising regulation.
- One swap per flight shall be accepted, except critical events upon FMP request.

## Procedure

The concerned **FMP / TWR** (according to the most penalising regulation) may:

- Request the NM tactical team to swap two specific flights.

Having received a request for a swap from an AO or FMP / TWR,

the **NM tactical team** shall:

- Identify the flights.
- For aircraft originating from A-CDM, ensure that the improvement is not before the last known TTOT.
- Check the Network Impact Display (NID).
- In case of a negative impact on the Network, refuse the action unless all impacted FMPs agree.
- Swap the two flights if the conditions are met and there is no significant impact on the Network.
- Where the swap may be performed, leave forced the improved flight and unforced the deteriorated flight.

### 5.7.2.7. Managing the REA status of a flight

The REA message is designed to enable local ATC / ARO units to inform the ETFMS that a regulated flight is fully ready to depart before its EOBt / CTOT. Depending on the time of reception of the message in the ETFMS, the flight may receive a CTOT of up to 15 minutes earlier than the original EOBt according to the FPL. The flight set to REA status allows the shortest available parameters for improving the new CTOT (the ETFMS will prioritise a flight in REA status over a flight in RFI status under the same conditions).

**Note:** A flight in REA status will only receive a new CTOT if there is available capacity, otherwise the CTOT will not change.

The message may modify the relevant taxi time by specifying a minimum line-up time (MINLINEUP). If no time is specified in the message, the system will use the default taxi time of the relevant aerodrome. The time at which the ETFMS receives a REA will be used as the NEWEOBT.

On reception of the message for a regulated flight, the ETFMS will look for a CTOT no earlier than the clock time of the reception plus the taxi time / MINLINEUP (NEWCTOT = NEWEOBT + taxi time / MINLINEUP + delay). If an improvement is possible, the AO and ATC will receive an SRM.

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Traffic departing from A-CDM may send a REA message by following the same process as for non-CDM airports. This may result in recalculating the CTOT and deleting all relevant information received in previous DPI messages. In some CDM airports, a T-DPI-s message might be used instead of a REA message and ETFMS will react in the same way (if TTOT is before the STW).

The conditions that apply are:

- The concerned flight is regulated.
- The message is sent up to 15 minutes prior to the EOBT of the flight.
- The message is not sent later than the CTOT - taxi time / MINLINEUP - SRM minimum improvement time (5 minutes). The True Revision Process will also try to improve the flight until then.
- Only ATC / ATFCM units can send a REA message. The REA message is sent via SITA / AFTN or via the CHMI. AOs shall contact and coordinate with these units in case they want to benefit from this functionality.

Note that the ATFM delay calculation is expressed as:

- For REA messages:  $\text{ATFM delay} = \text{CTOT} - (\text{last EOBT received in IFPS} + \text{taxi time})$ ;
- For T-DPI-s messages:  $\text{ATFM delay} = \text{CTOT} - \text{TTOT}$  (the TTOT in the last E-DPI / T-DPI-t received).

### Procedure

After being informed by an AO ready to depart before its EOBT / CTOT (e.g. doors are closed and flight ready to depart),

the **FMP / TWR staff** shall:

- Decide if ground situation permits an earlier departure taking into account the conditions set in the aforementioned list.
- In case an earlier departure is possible, specify the minimum line-up time needed to let the aircraft go from the current position to the RWY and, if the time needed is less or more than the current taxi time, add it in the REA message (MINLINEUP).
- Send the REA message to the ETFMS.

#### 5.7.2.8. CASA does not push flights into closed airspace

When a flight is regulated, the CTOT may delay the flight into one or more IFPS time dependent constraints (e.g. RAD restrictions, CDR closed), hence violations appear in en-route and / or airspace restrictions.

The ETFMS tries to take the **IFPS validity period** of each flight into account to prevent flights from being pushed into a closed airspace by an ATFM delay. This validity period will act as a 'Slot not after...'. This behaviour solves most of the IFPS violations. However, there are two marginal situations that can trigger coordination between the different actors:

- a) Some flights limited by the same IFPS restriction (Case of **'V' flights**). In this case, CASA might allocate slots so that these flights will arrive exactly at the beginning of the IFPS validity period, creating a bunching at the beginning of the IFPS closure and, possibly, inside the regulation. These flights for which the delay has been limited to meet the IFPS constraint will be marked in the slot list and the flight list with a **'V'** in the CTOT column.
- b) In some rare cases it is impossible for the CASA algorithm to meet both the ATFCM constraint(s) and the IFPS validity period constraint(s) (Case of **'X' flights**). For example, a zero rate regulation or RVR sub-period that would bring the flight into an IFPS invalid period. In such a situation where the constraints cannot be reconciled, **the priority has been given to the ATFM constraint**. Therefore, the flight that presents IFPS violation(s) will be marked in the slot list and the flight list with an **'X'** in the CTOT column.

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**Note:** The ETFMS, CHMI and the NOP Portal displays indicate that a **CTOT Limit (CL)** given by CASA and the CTOT characteristic type.

The following displays will indicate that a CTOT Limit (CL) has been put in place:

- ETFMS / NOP Portal / CHMI flight list
- ETFMS Slot List
- NOP portal / CHMI ARCID list
- NOP Portal Measure Editor flight list
- NOP Portal / CHMI Flight Details

### Procedure for 'V' flights during pre-tactical operations

The **NM pre-tactical team** shall:

- Monitor in pre-tactical operations the possible bunches produced by 'V' flights that need to be fixed (especially during high delays situations).
- Note the characteristics of the 'V' flights for possible actions (e.g. to be communicated to the NM tactical team via the Network Brief).
- If the bunching is considered excessive, coordinate with the FMP an alternative solution (e.g. disabling temporarily the environment restriction). The communication should be: 'Do you accept the following flights ... via the restricted area / route / point... for the next ... hours?').
- If there is a need to coordinate with adjacent FMPs, take the appropriate actions.

### Procedure for 'V' flights during tactical operations

In case of a bunching of '**V**' flights that needs to be fixed, the **FMP staff** shall:

- Contact the NM tactical team and communicate the bunching to be solved.

The staff in **NM SNOC** position (**SNOC** during the day / **DOM** during the night) shall:

- Monitor in tactical operation the possible bunches produced by 'V' flights that may need to be fixed (especially during high delays situations) or reported by the FMP.
- If the bunching is considered excessive, further advance some flights to reduce the bunching.
- If the bunching is such that the 'V' flights, after advancing, would occupy a significant number of consecutive slots in the regulation (in case of high delay and low rate) the following action will mitigate the problem:
  - Select the 'V' flights, force them to CTOTs with a new delay equal to half of the initial delay. For example: Initial CTOT 1200, delay 60m, force it to a new CTOT=1130, that means 1200-30min. This technique will keep the initial 'natural' spreading of the demand.
  - If the previous solution is not possible then coordinate with the FMP an alternative solution (e.g. temporarily disabling the environment restriction). The communication should be: 'Do you accept the following flights ... via the restricted area / route / point... for the next ... hours?').
    - If the disable action of the restriction is accepted, coordinate with the NM AD supervisor to disable the restriction.
    - Coordinate with adjacent FMPs, if deemed necessary.
    - Re-compute the FTFM Validity of the 'V' flights producing the bunching.

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- Deep rectify the regulation.
- Check that the 'V' flights concerned have received a SRM and have been pushed forward in the slot list.
- If the previous solution is not possible, then coordinate an alternative solution as follows:

**A. If time permits** (OBT of 'V' flights more than 1 hour in the future),

the staff in **NM SNOC** position (**SNOC** during the day / **DOM** during the night) shall:

- Create the list of flights to be re-routed and communicate it (via email) to the NM AOLO and the NM IFPS supervisor (note that disabling of restrictions may be necessary).

The **NM AOLO** shall:

- In coordination with the NM IFPS operator, analyse the IFPS error(s) and produce, using the 'What if' tool or Group Rerouting Tool (GRRT), a Rerouting Proposal (RRP) for each flight.
- Check Off-Block Time (OBT) validity period of the RRP in order to make sure that the possible new delay is not limited by IFPS restriction (no new 'V' flights are produced **as** a result of the RRP).
- Send RRP's inserting warning information by using the ETFMS email function.
- Inform the NM IFPS Supervisor and the NM SNOC of the RRP's sent.
- Contact by phone the AO to explain the situation.

The staff in **NM SNOC** position (**SNOC** during the day / **DOM** during the night) shall:

- Suspend the corresponding 'V' flight by using the 'Suspend V Flights' feature.
- **The system will process FPL messages modifying the flight trajectory of manually suspended 'V' flights and automatically de-suspend the flights if the V condition is removed as a result of the FPL message processing.**

**In case a flight remains manually suspended**, the NM IFPS supervisor will check incoming messages related to the 'V' flight concerned and:

- Verify that the CHG or CNL followed by FPL is consistent with the RRP.
- Inform the SNOC, if the revised or new FPL is consistent with the RRP, who will manually de-suspend the flight.
- If the revised or new FPL is not consistent with the RRP, manually modify the **FPL** (MAN), inform the SNOC after the ACK, who will manually de-suspend the flight.

**B. If time is critical** (OBT of 'V' flights less than 1 hour in the future),

the staff in **NM SNOC** position (**SNOC** during the day / **DOM** during the night) shall:

- Create an MCP regulation using the same TFV as the regulation where the bunching needs action. This will be used to remove the bunching by further delaying the flights and give additional time to execute the RRP process described above.
  - Reg id: CPVF + date
  - Start time: 5 min before first flight in the bunching.
  - End time: start time + 3 hours
  - Traffic Volume Set : NETWORK
  - Reason: Other

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- ANM remark: NETWORK CHERRY PICK DUE TO ATFM DELAY INDUCING IFPS VIOLATION
- Inform the FMP owner of the overloaded regulation about the MCP creation.
- Manually force the flights to the end of MCP regulation period minus 15 min.
- Start the re-routing steps as described in case **A above**.

## Procedure for 'X' flights during tactical operations

In case of 'X' flights,  
the **NM tactical team** shall immediately contact the originator of the restriction and advise to manage the incoming traffic.

### 5.7.3. Flight Activation Monitoring (FAM)

In the areas in which Correlated Position Reports (CPRs) are received and flight activation monitoring (FAM) is enabled, those flights which are expected to be airborne but are not actually reported as airborne at the expected time will be regularly 'shifted'. When a pre-determined maximum time shift is reached, any such flight will then be suspended and will receive an FLS.

In normal circumstances such a flight shall not receive a departure clearance (for more details on FAM refer annex A, **Flight data**).

An FMP may request the NM to disable FAM only for technical reasons, in such cases the NM Customer technical Service desk and Operations (**CSO**) shall be informed.

#### 5.7.3.1. Undo FAM

The undo Flight Activation Monitoring (**FAM**) functionality has been designed to avoid shifting and suspending flights when no CPRs are received.

Due to intermittent radar coverage, it is possible that an Entry Node (**EN**) sends plots for a part of the covered airspace but not at all for another part of the airspace. This could happen in case of radar malfunction. In this case, the FAM will assume that the entry node is still working properly because plots are received from this EN. The FAM will then unduly shift and suspend flights.

If a flight is wrongly shifted by the FAM, after undoing FAM the flight will be un-shifted back to its FTFM (and ETOT) if it is not regulated. If the flight is regulated, the ETFMS will recalculate its slot and the flight will be shifted to its new CTOT with a new RTFM.

If a flight is wrongly suspended by the FAM, after undoing FAM the flight will be de-suspended. If the flight is not regulated, the current tactical flight model (CTFM) will be set to the ETOT of the FTFM before suspension. If the flight is regulated, the ETFMS will recalculate its slot and the flight will be shifted to its new CTOT with a new RTFM.

As a result, undo FAM can only be performed after ETOT / CTOT or ETO / CTO.

## Procedure

After establishing that FAM is not working correctly,  
the **FMP staff** shall:

- Identify and select the flight(s) which are wrongly shifted / suspended by FAM.
- Report the affected flight(s) to the NM tactical team.

Having been informed by an FMP that flights are not shifted or suspended as appropriate,

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the **NM tactical team** shall:

- Undo FAM for the selected flight(s).

After establishing that FAM is not working correctly,

the **NM tactical team** shall:

- Identify and select the flight(s) which are wrongly shifted / suspended by FAM.
- Coordinate with the appropriate FMP any further action.
- Inform the NM DOM.
- Undo FAM for the selected flight(s).

#### 5.7.4. **FLS triggered by DPI-transmitting aerodromes**

Aerodromes that provide Target Take-Off-Times (TTOT) to the NM via DPI messages (e.g. A-CDM) also occasionally send Cancel DPI (C-DPI) messages. This is done in case when there is an interruption in the departure / turn-around process for a particular flight and the new **Take-Off-Time** is not yet known. The C-DPI message will result in an FLS being sent by ETFMS.

**At reception of a new E-DPI, T-DPI-t or T-DPI-s message triggered by e.g. a TOBT update or a DLA/CHG updating the EOBT, the flight will receive a new SAM, DES or FLS sent by the ETFMS.**

The AO is expected to communicate the updated TOBT (via his Handling Agent) to the A-CDM platform, which will transmit a new TTOT to the ETFMS by DPI messaging. **An A-DPI message is rejected for suspended flights. However, a Tower Update A-DPI message will be accepted (from Advanced ATC Tower airports) and the flight will receive a new SAM, DES or FLS sent by the ETFMS.**

If the flight has already departed, the first received ATC message (DEP / FSA) or the first received CPR will automatically de-suspend the flight **in ETFMS (no SAM or DES is sent).**

#### **Procedure**

In case the flight is suspended by the airport via a C-DPI,

the **NM tactical team** shall:

- Request the FMP / TWR or AO staff to:
  - Request the handling agent to provide a new TOBT or
  - Take manual action to put the flight back into the pre-departure sequence **or to trigger a Tower Update A-DPI (from Advanced ATC Tower airports).**
  - Request the AO to send a DLA or CHG message to align EOBT with TOBT. Although the DLA or CHG will trigger a de-suspension message, the TOBT update is required.

#### 5.7.5. **Monitoring of tactical delay savings**

Delay savings achieved via individual flight improvements may be monitored via the ETFMS flight list display. With this enhancement, it is possible to see the list of all flights that were manually treated.

Actions that deliver direct delay impact are: Force CTO/T, Force SLOT, Flight 'x' on Slot 'y' (Override Slot) and exclusions.

#### **Procedure**



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To better monitor the tactical delay savings,  
the **NM DOM** shall:

- Monitor throughout the day of operations a flight list filtered with Force CTO/T, Force SLOT, Flight 'x' on Slot 'y' (Override Slot) and Exclusion actions.
- Where the Network situation allows, support the annual en-route delay reduction objective by keeping the 'delay delta' for all ATFM delays above a certain percentage (10-15%).

## 5.8. FLOW MANAGEMENT (FM) HELPDESK

The FM Helpdesk is provided to assist and encourage **Flow Management Positions, Towers, Aircraft Operators** and **Flight Handling Agents** to follow the correct procedure for their situation, and to help them solve their problem whenever it cannot be solved by use of ATFM message exchange.

The FM Helpdesk service is available via telephone and via the NOP Portal (via the **E-Helpdesk**).

**For FMPs and TWRs, the E-Helpdesk allows requests for slot improvement, slot extensions and exclusions from a Regulation.**

### 5.8.1. Answering Helpdesk queries

The Helpdesk attempts to answer queries as follows:

- Assistance to follow the correct procedure for particular problems;
- When possible, assistance to reduce delays;
- Providing information concerning ATFCM measures.

The **E-Helpdesk** will be treated with priority over FM Helpdesk phone calls. The telephone service is reserved for business aviation and those who do not have internet access.

### Procedure

The **NM tactical team** assigned to Helpdesk tasks shall:

- Advise the NM DOM when the number of waiting calls increases.
- Respond to Helpdesk queries regardless of the way the request arrives, but prioritising the queries received through the **E-Helpdesk** and those phone calls with the label 'BIZJET'.
- Use the drop down menu items when responding if possible. In case a suitable menu item does not exist or further explanation is required, use the free text box and explain the reason in plain English (avoid copying directly from the ETFMS).
- Notify [e-helpdesk@eurocontrol.int](mailto:e-helpdesk@eurocontrol.int) of possible missing response types.
- Use the flag for general interest in cases where there are, or are expected to be, multiple queries for the same reason.
- Report to the NM DOM if the caller becomes abusive, while not responding to that abuse. A claim shall be submitted through the NM DOM if deemed appropriate.
- In the event of internet connection problems, notify CSO immediately.

The **NM DOM** shall:

- Reinforce the Helpdesk accordingly in case the workload increases.
- Set a rule on the **E-Helpdesk** in case of major problems on a specific area, in order to send automated answers and decrease the response time to other queries.



## **5.9. LOCAL PROCEDURES FOR PARTICIPATING FMPS**

The following options are available for those FMPS that have formal agreements to make use of them.

The FMP tactical ATFCM measures are a reflection of the NM Agreements where applicable.

In addition, there are a number of ATFCM local procedures agreed and published with the FMPS concerned.

### **5.9.1. FMP tactical ATFCM measures**

ACCs may use a range of Tactical Capacity Measures (**TCM**) before and after departure intended to optimise available capacity.

#### **5.9.1.1. Level capping**

Such measures may affect vertical profiles within an ACC and in the immediately adjacent ACC. ACCs shall ensure that the necessary inter ACC co ordinations are carried out before initiating such measures.

Where such measures are proposed to traffic below or adjacent to an ACC, affected flights shall be requested to by the ACC to refile accordingly with the IFPS.

Where early descents are coordinated with adjacent ACCs or within an ACC AFP messages are not required unless the RFL of the flight between adjacent ACCs has been altered.

Individual coordination of such measures with the NMOC is not required.

#### **5.9.1.2. Reroute scenarios**

Tactical rerouteing is applied within the ACC in order to better distribute traffic and to reduce sector complexity and occupancy. Such measures do not require AFP messages.

Individual coordination of such measures with the NMOC is not required.

#### **5.9.1.3. Minimum Departure Intervals (MDI)**

Minimum departure intervals (MDIs) are occasionally coordinated between ACCs and adjacent airports and FMPS. These measures can avoid the requirement for regulations in the ACC area. Application of such measures does not alleviate the requirement for EOBT and CTOT adherence.

The measures are normally used in the tactical phase for short durations and may be requested to major aerodromes / aerodrome groups below or adjacent to the AoR of the ACC. These measures are coordinated directly between the ACC and adjacent FMPS / airports.

Prior coordination with the NMOC for these measures is not obligatory.

#### **5.9.1.4. Miles in Trail (MIT)**

Miles in trail (MIT) are occasionally coordinated between sectors in an ACC and adjacent ACCs.

The measures (MIT) are normally used in the tactical phase for short durations and may be requested to adjacent ACCs below or adjacent to the AoR of an ACC. These measures (MITs) are coordinated directly between the ACC and adjacent FMPS.

Prior coordination with the NMOC for these measures is not obligatory.

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**5.9.2. Cross-wind exclusions at Amsterdam Schiphol**

Amsterdam Schiphol (EHAM) operates as a hub-airport with high capacities during the peak hours. During inbound mode two landing runways are used and one departure. The outbound mode means one landing and two departure runways

In situations where high westerly winds restrict the use of the airport heavily, only one runway for landing will be available. More runways are available but only for traffic which can accept high cross-wind components. ATC cannot offer these runways due to legal reasons. However, AOs with destination EHAM may request the use of these runways before taking off.

In such cases a regulation for EHAM arrivals will be applied with the appropriate rate for the single runway in use for landing. Extra capacity can be found in the use of extra runways with high cross-wind component. To make use of this extra capacity the following conditions apply:

- During regular briefings with EHAM, Met-office, aircraft operators (AOs) and ATC-supervisors it will be decided which runways will be used.
- A runway with a high cross-wind component will be available for aircraft which can accept the high cross-wind component.
- AOs will identify flights which could accept high cross-wind and communicate the flights with Amsterdam FMP.
- If the aircraft excluded cannot land, it will be diverted to the alternate airport in the FPL (e.g. EHRD) and will not re-enter the normal arrival sequence.
- The exclusion request will only come from Amsterdam FMP.
- AOs may use the procedure only after having signed a Service Level Agreement (SLA) with LVNL.

**Procedure**

In cases of heavily westerly winds and where an arrival regulation is applied at EHAM, the **Amsterdam FMP staff** shall:

- Coordinate with the NM tactical team which flights will be excluded from the EHAM arrival regulation.
- Request the NM tactical team to add the line below to the ANM remark of the EHAM arrival regulation.

The **NM tactical team** shall:

- Include the following line in the ANM remark of the EHAM arrival regulation (if already applied, shallow rectify the regulation, add the text to the ANM remark and Activate Publish it):
  - HHMM-HHMM UTC CROSS-WIND EXCLUSIONS IN USE. DUTCH AIP 2.22
- **Note:** 'HHMM-HHMM UTC' is the period when this procedure is active, where 'HH' is hours and 'MM' is minutes.
- Exclude the coordinated flights from the EHAM arrival regulation.
- Increase by one the arrival monitoring value (MV) during the concerned hour each time a flight is excluded from the regulation. This is done for monitoring purposes.

**5.9.3. Paris Charles de Gaulle diversion plan**

This procedure is designed to prioritise flights that have diverted to re-position to their original destination: LFPG. This procedure has been agreed with DSNA, LFPG, LFFF FMP and the NMOC.

The AO concerned for each diverted flight shall contact the CDM@CDG.

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The assumption is that an arrival regulation will be in force at LFPG. If not already applied, LFFF FMP will request the NMOC to apply an arrival regulation. The rate will be defined through coordination between CDM@CDG and Paris-FMP according to the number of diverted flights, to the CDG Arrival actual Capacity and to the Paris-ACC sectors demand / capacity balancing.

A priority flight list will be established by the CDM@CDG in collaboration with the AOs. This list will be communicated to Paris-FMP (by phone + email), who will then communicate the list to the relevant NMOC tactical position (by phone + fax).

In all cases, flight plans must be updated to reflect the CDM process and the normal CTOT adherence rules apply.

### Procedure

In case of an arrival regulation is required to manage diverted flights and re-position them to their original destination,

the **LFFF FMP staff** shall:

- Contact the NM tactical team and request an arrival regulation with the agreed acceptance rate between CDM@CDG and LFFF according to the number of diverted flights / CDG arrival actual capacity / Paris ACC sectors demand and capacity balancing.
- Communicate the priority flight list established by the CDM@CDG in collaboration with the AOs.
- Send the priority flight list by fax.

The **NM tactical team** shall:

- Apply the arrival regulation.
- Collect the relevant information on the priority flight list.
- Force the priority flights into the LFPG arrivals regulation.
- Ensure that all reasonable steps are taken to achieve minimal delay for the diverted flights affected by other regulations.
- Advise AOs that flight plans must be updated to reflect the CDM process and the normal CTOT adherence rules apply.

#### 5.9.4. DSNA Traffic Volume Set

As part of a project to improve performance and optimise the balance between safety and traffic flow DSNA uses a TFV Set attributed to DSNA globally instead of a particular French FMP.

This TFV Set (named **LFDSNA**) is used when a French FMP decides to apply a specific measure to help reduce the delay in another French ACC, thus treating a flow globally inside France instead of a specific sector. The delay will be attributed to France rather than a specific FMP.

The request for the use of LFDSNA may be for a variety of reasons and the appropriate regulation reason should be applied in coordination with the FMP.

### Procedure

In the case a French FMP requests the implementation of an ATFCM measure (e.g. regulation or scenario) to protect a global flow in France,

the **DSNA FMP staff** shall:

- Request the NM pre-tactical / tactical team to allocate this delay to the TFV Set: LFDSNA instead of its own local TFV Set using the phraseology: 'Allocate delay to TFV Set LFDSNA'.

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The **NM pre-tactical team** during the pre-tactical phase and the **NM tactical team** during the tactical phase shall:

- Apply the regulation and replace the original TFV Set associated with the TFV being regulated with **LFDSNA**.

**Note:** If the FMP does not specifically state that the regulation should be allocated to LFDSNA, the original TFV Set shall be left unchanged.

## 5.9.5. Protection of TSAs / TRAs in Belgrade FIR

It has been agreed with Belgrade FMP (LYBA) that the protection of TSAs / TRAs in LYBA FIR by a zero rate regulation shall be an official operational procedure.

The times requested include a buffer of 15 minutes either side of the military activity.

It is anticipated that due to the short duration (60 minutes) the AOs concerned will either advance their EOBT or delay their flight accordingly.

### Procedure during pre-tactical operations

On D-1, after notification from Belgrade FMP staff requesting a zero rate regulation, the **NM pre-tactical team** shall:

- Implement the zero-rate regulation(s) (more than one TFV may be regulated).
- Include details of the activity in the INP and FREE for D-1.

### Procedure during tactical operations

During the day of operations in case of cancellation of the military activity prior to the expected end time,

the **Belgrade FMP** staff shall:

- Communicate with the NM tactical team as early as possible and inform of the cancellation.

the **NM tactical team** shall:

- Cancel the regulation(s) (see **Cancel a regulation**).
- Issue an AIM to inform AOs about the cancellation.

## 5.9.6. Protection of TSAs / TRAs in Tirana FIR

It has been agreed with Tirana FMP (LAAA) that **LATSA1** and **LAD1** military airspaces in LAAA FIR will be protected by a zero rate regulation during periods of military activity.

The time periods during which the airspace will be used for military purposes include a buffer of 15 minutes on either side of the military activity.

It is anticipated that due to the expected short duration (60 minutes) the AOs concerned will either advance their EOBT or delay their flight accordingly.

### Procedure during pre-tactical operations

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On D-1, when **LATSA1** and / or **LAD1** airspaces are expected to have military use the following day,

the **Tirana FMP staff** shall:

- Communicate the expected activity with the NM pre-tactical team, specify:
  - NOTAM number.
  - Time period (from... until...).
  - Traffic volume(s).
- Request (a) zero rate regulation(s) accordingly.

the **NM pre-tactical team** shall:

- Implement the zero rate regulation(s) (more than one TFV may be regulated).
- Include details of the activity in the INP and FREE for D-1.

## Procedure during tactical operations

During the day of operations **in case of cancellation** of the military activity prior to the expected end time,

the **Tirana FMP staff** shall:

- Communicate with the NM tactical team as early as possible and inform of the cancellation.

the **NM tactical team** shall:

- Cancel the regulation(s) (see **Cancel a regulation** in the ATFCM Operations Manual).
- Issue an AIM to inform AOs about the cancellation, the following text is suggested:
  - REGULATION(S) <REG(S) ID> CANCELLED DUE TO EARLY RELEASE OF MILITARY RESERVED AIRSPACE IN LAAA FIR.



## 5.9.7. Regulation and delay management for Canarias ACC

### 5.9.7.1. Canarias ACC sector regulations – southerly wind conditions

The impact of southerly winds causes a reduction in capacity of GCCCINB (from a standard **35** to 26) or GCCCIGC (from a standard 30 to 25).

## Procedure

Where southerly wind conditions apply,

the **GGCC FMP staff** shall:

- Request a regulation for **either**:
  - GCCCINB.
  - or**
  - GCCCIGC.

The **NM tactical team** shall:

- Apply the regulation on the required TFV using 'Weather' as regulation reason and **either**:
  - Rate: 26/60 for GCCCINB.

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or

- Rate: 25/60 for GCCIGC.

**5.9.8. Regulation application at Ibiza airport**

In order to reduce the overall delay at Ibiza (LEIB) and while avoiding the saturation of the airport apron, there has been an agreement between the NMOC and Palma FMP to apply regulations at Ibiza (LEIB) only on arrivals.

The demand peaks relative to arrivals at Ibiza (LEIB) are usually distributed as follows:

- **Mondays in the afternoon from 14:00 until 18:00**
- **Tuesdays and Thursdays from 09:00 until 13:00**
- **Fridays in the afternoon from 17:00 until 20:00**
- **Saturdays from 09:00 until 18:00**
- **Sundays in the afternoon from 17:00 until 21:00**

In addition, GA traffic (around 30% of the traffic) has a huge impact on operations and causes an imbalance between capacity and demand and a lack of traffic predictability.

Ibiza (LEIB) TWR will manage the departure sequencing including the use of variable and progressive taxi times applied through Palma FMP. In addition, the NMOC will assist with manipulation of CTOTs as necessary (and where possible) to expedite the sequence.

**Procedure during pre-tactical operations**

Considering the usual elapsed flight times of flights coming from northern Europe (2.5 - 3.5 hours) into this aerodrome and the opening time of the LECP FMP from 05:00 until 17:00 UTC, the Palma FMP must take the decision to apply regulations well in advance, when necessary, during the pre-tactical phase.

The **LECP FMP staff** shall:

- Send to the NM pre-tactical team the pre-tactical planning information.
- Coordinate as required with the NM pre-tactical team.

The **NM pre-tactical team** shall:

- Coordinate with LECP FMP staff as required.

Where a demand peak is expected in the arrival traffic on D-1,

the **LECP FMP staff** shall:

- Contact and request the NM pre-tactical team to apply a pre-tactical regulation for LEIB arrivals (LEIBARR).

The **NM pre-tactical team** shall:

- Apply the regulation according to the details provided by the FMP:
  - Regulations' Period: As requested by LECP FMP staff.
  - Rate: As requested by LECP FMP staff.

**Procedure during tactical operations**

Where a demand peak is expected in the arrival traffic on the day of operations, the **LECP FMP staff** shall:

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- Contact the NM tactical team and request to apply a regulation for LEIB arrivals as early as possible.

The **NM tactical team** shall:

- Apply the regulation with the following details:
  - Rate **16/60 when arrival regulation does not exceed 80 minutes, or Rate 14/60 when arrival regulation exceeds 80 minutes.**
  - In cases where there is no negative impact on the Global Airport capacity or ATC sectors, rates can be higher during the following hours with the possibility to modify the rate in order to use the whole global capacity of **28/60** of the airport (depending on the foreseen departures).
  - Regulations' Period: As requested by LECP FMP staff.

Where required and in order to expedite the departure sequence at LEIB,

the **LEIB TWR Supervisor** must:

- Contact LECP FMP staff and request modifications to the taxi time.
- Contact LECP FMP staff and request CTOT extension(s) (see **CTOT extension management**) or modifications to the DTW / STW default parameters (see **Short-term ATFCM solutions**).

The **NM tactical team** shall:

- Assist LECP FMP.
- Perform the CTOT extension(s) or modifications to the DTW / STW parameters (see **Short-term ATFCM solutions**).

In order to comply with the working arrangement outlined in this procedure,

the **LECP FMP staff** shall:

- Timely update the taxi time and MVs for the relevant TFVs in order to comply with the working arrangement outlined in this procedure (see **Updating CACD data in PREDICT / ETFMS** and **Runway criteria update**) according to the pre-tactical information.

## 5.9.9. Zürich departure priority window

Due to safety reasons LSAZ FMP will stop arrivals during certain periods in the hours of the morning rush in order to allow a higher number of departures.

Flights departing from out of area or any other flight in exempted status may not be captured by a regulation.

### Procedure during pre-tactical operations

Pre-tactically, before weekend days and Baden-Württemberg (Germany) holidays for LSZH arrivals,

the **LSAZ FMP staff** may:

- Contact the NM pre-tactical team and request an arrival zero-rate regulation:
  - for the landing configurations **DVO34**,
  - from 06:00 UTC in winter time (05:00 UTC in summer time). The regulation duration may vary daily, but not exceeding **45 minutes**,
  - with regulation reason 'Environmental issues' and ANM remark 'PRIDEP'.
- If required, request a regulation for the period immediately following the zero-rate regulation and provide its rate.



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The **NM pre-tactical team** shall:

- Apply the zero-rate regulation as requested by the FMP with **auto-link** enabled.

## Procedure during tactical operations

On the day of operations,

the **LSAZ FMP staff** may:

- Contact the NM tactical team and cancel the zero-rate arrival regulation in case of bad weather conditions or other local issues.
- If required, request before 04:30 UTC in winter time (03:30 UTC in summer time) a regulation for the period immediately following the zero-rate regulation and provide its rate.

The **NM tactical team** shall:

- Apply the modifications to the regulation as requested by the FMP.
- Not perform any coordination with the FMP in case an exempted flight appears in the slot list.

### 5.9.10. Collaborative Arrival Regulation Avoidance (CARA) at Vienna

Arrival regulations have been used At Vienna (LOWW) almost on a daily basis to resolve short term congestions. With the aim at reducing delays and improving management of traffic flows, Austro Control and the NM have agreed on the Collaborative Arrival Regulation Avoidance (CARA) procedure in close cooperation with participating airlines.

The procedure will be supported by the following FMPs from the region: Belgrade (LYBA), Bratislava (LZBB), Budapest (LHCC), Ljubljana (LJLA), Milan (LIMM), Munich (EDMM), Padova (LIPP), Warsaw (EPWW) and Zagreb.

The procedure consists of applying specific ATFCM techniques avoiding the use of arrival regulations to manage short peaks of up to 40 minutes congestion at LOWW.

**Note:** Arrival regulations will still be used to manage congestions of longer duration.

Target load will be 46, which should be trimmed by means of cherry picking of flights from nearby airports (maximum 1 hour flying time from LOWW).

Short term traffic peaks are expected at LOWW in the following periods: 06:00 – 08:00 UTC and 15:30 – 17:30 UTC and occasionally: 10:00 - 12:00 UTC and 13:00 – 15:00 UTC.

## Procedure

**Two hours before the expected peak,**

the **LOVV FMP staff** shall:

- Check whether all conditions are met and the procedure can be applied.
- Select as many flights as possible of participating airlines for cherry picking and define the minimum amount of flights that should be actually shifted to another time, taking into account:
  - Flights not affected by regulations in other FMPs will not be considered for cherry picking.
  - Flights affected only by LOVV regulations may be considered for cherry picking after checking.



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- Check the entry times of the selected flights and decide by how many minutes each flight shall be shifted.

**One hour before the expected peak,**

the **LOVV FMP staff** shall:

- Request the relevant TWR to:
  - Shift flights with destination LOWW to a later departure time and
  - Include the ETO for the entry point of the LOWW TMA in the ATC clearance.
- For non-domestic flights:
  - Send by e-mail the list of the selected flights to the NM DOM. The list will include call-sign, entry point and time over, which needs to comply with the required entry time for LOWW TMA (time over BARUG, LANUX, MASUR, MIKOV, NIGSI, PESAT, REKLU, TOVKA).

**Note:** The same list will also be e-mailed to the participating airlines.

- Call the NM tactical team to inform them about the e-mail.

**Note:** Flights which are only subject to an LOVV regulation shall be manually excluded on specific request of LOVV FMP. A remark from LOVV FMP to CASA / NOC will be included in the flight list.

The **NM tactical team** shall:

- Contact FMPs concerned and request them to ask the relevant TWRs to:
  - Shift flights to a later departure time by minimum 5 minutes and maximum 15 minutes.
  - Include the ETO for the entry point at LOWW TMA in the ATC clearance.

**Note:** Exceptionally, the NM tactical team may call directly EDDM TWR (and not EDMF FMP) for departures from EDDM.

#### **5.9.11. Manual suspension for traffic to/from Nice airport (LFMN) and Lyon airport (LFL)**

The objective of this procedure is to ensure that all flight plans for flights arriving at or departing from LFMN and LFL shall be checked against allocated slots by the DGAC or a competent authority.

The consistency check between flight plan and airport slots shall be strictly limited to “No-slot” occurrences, i.e. a flight plan filed for a flight intending to take off or land at LFMN or LFL, during the coordinated period without having an airport slot allocated by COHOR (Association pour la Coordination des horaires, the slot coordinator for French airports).

The decision to suspend a flight plan in case of a ‘no slot’ occurrence shall be made by DGAC and COHOR. This authority shall request the Network Manager Operations Centre (NMO) for a flight plan suspension via dedicated telephone lines indicating the details of the flight plan concerned. Flight plans that have been activated by ATC shall not be suspended.

#### **Procedure**

**When the competent authority (COHOR) have decided to suspend a flight, they shall:**

- **Contact the tactical operations position on telephone number (+32 2 745 1900) with a request for SUSPENSION**
- **Confirm the request by sending an E-mail to nm.dom@eurocontrol.int**

**As soon as the request to suspend a specific flight is received,**

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the NM DOM (or SNOC) shall:

- Verify the telephone number (+33 1 49 75 88 10, +33 1 85 08 69 29, or +33 6 47 04 83 92) to confirm that the request is indeed originating from the competent authority, COHOR.
- Select the specified flight.
- Push the 'Action...' button, bottom-right of the Command Display.
- Select the Action Type: 'Manual Suspend'.
- Insert the following text in the appropriate text box:  
"No Airport Slot, contact COHOR +33149758810 , AIC FR. A12/17"
- Apply

In case that suspended flights are accepted to operate at LFMN or LFLL at a later stage, on explicit request from the above authority,

the NM DOM (or SNOC) shall:

- Select the specified flight from flight list of the traffic Demand
- Push the 'Action...' button, bottom-right of the flight list
- Select the Action Type: 'Remove Manual Suspend'
- Apply

In exceptional circumstances and for either operational or safety reasons,

the NM DOM (or SNOC) shall:

- De-suspend flight plans on their own initiative

**Note:** The above procedure is NOT an ATFCM measure. NMOC tactical operations personnel are not required to perform any assessment before executing it. The responsibility for identifying individual flights lies entirely with DGAC or a mandated authority.

**Note:** It is essential that coordination in regard to the above procedure shall only take place between NM DOM (or SNOC) and COHOR (see above telephone numbers). No other positions within DGAC or other agencies in France are empowered to suspend flights without airport slot or de-suspend when a slot has been allocated.

## **5.10. ASM / ATFCM NETWORK IMPACT ASSESSMENT**

The application of the FUA concept ensures that, through the daily allocation of flexible airspace structures, any necessary segregation of airspace is based on real usage within a specific time period and airspace volume.

### **Civil-military coordination**

Airspace Use Plan (AUP) and Updated Airspace Use Plans (UUPs) are produced by AMCs to allow concurrent civil-military operations.

These plans need to be incorporated into pre-tactical and tactical operations with minimum disruption to civil traffic as well as allowing effective military operations.

Within the NMOC Network impact assessment procedures the AUP / UUP process defined in the ASM Handbook is described as the following procedures.

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**5.10.1. Management of the AUP / EAUP (ASM / ATFCM Procedure 1)**

Optimising capacity usage via an assessment on the impact on the network of expected airspace allocation during activities the day before operation. This procedure is finalised with the publication of the European AUP (EAUP).

**Procedure**

Having received a draft AUP **on D-1** and together with the NM pre-tactical team, the **MILO** shall:

- Update PREDICT with the draft AUP.
- Analyse the draft AUP impact on previously identified hot-spots.
- Identify potential additionally created problem areas.
- Assess the impact of the request at network level (e.g. on-loading sector, sector reconfiguration, complexity, work load etc.).
- Optimise requested airspace allocation (e.g. changing the activation time, flight level band, CDR closure details).
- Coordinate requested changes with the responsible Airspace Management Cell (AMC).
- Inform the NM pre-tactical team about the result of the coordination with the AMC.
- Brief FM Tactical staff and the NM AOLO for the next day.

The **NM pre-tactical team** shall:

- Inform the MILO of any identified en-route areas of high density traffic demand that exceed the available capacities by a significant margin (hot-spots).

Having been informed by the MILO regarding the AUP intention to implement airspace segregation,

the **NM pre-tactical team** shall:

- Analyse the draft AUP impact on previously identified hot-spots.
- Identify potential additionally created problem areas.
- Verify with the responsible FMP if this new situation has got capacity impact resulting in monitoring/capacity value update in ETFMS.
- Assess the impact of the request at network level (e.g. on-loading sector, sector reconfiguration, complexity, work load etc.).
- Coordinate with the MILO for optimisation of airspace allocation (e.g. changing the activation time, flight level band, CDR closure details).
- Brief FM Tactical staff and the NM AOLO for the next day.

Should the optimisation be refused by the AMC,

the **NM pre-tactical team** shall:

- Look for and evaluate all possible ATFCM solutions in order to minimise Network disruptions.
- Coordinate the resulting ATFCM solutions with all relevant parties.
- Update the draft ATFCM Daily Plan (ADP).
- Update the Network Brief.

Having received a briefing from the NM pre-tactical team and the MILO on D-1, the **NM tactical team** shall:

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- Prepare a briefing document for the day of operations in coordination with the NM AOLO. The document shall include:
    - Expected situation from the D-1 plan.
    - AUP/UUP opportunities identified.
  - Ensure that this information is disseminated externally if deemed appropriate.
- Having received a briefing from the NM pre-tactical team and the MILO on D-1, the **NM AOLO** shall:
- Contribute towards the briefing document prepared by the NM tactical team for the day of operations.

## 5.10.2. Management of the UUP / EUUP (ASM / ATFCM Procedure 2)

Making better use of airspace opportunities (alteration of airspace restrictions, increase route availability) on the day of operations in order to provide additional route options to aircraft operators. This procedure is finalised with the publication of European Updated Airspace Use Plan (EUUP) whenever required.

**Note:** This procedure is, according to the **ASM Handbook**, not compulsory to all states.

### Procedure during pre-tactical operations

- On D-1**, having received new UUPs, the **MILO**, in conjunction with the NM pre-tactical team, shall:
- Analyse the UUPs impact on previously identified hot-spots.
  - Analyse the UUPs for additional route availability and advise the NM AOLO.
  - Contribute to briefing by NMOC Pre-tactical to the NM tactical team and NM AOLO for the next day on:
    - Expected situation from D-1 plan
    - AUP/UUP opportunities identified
- Having received new UUPs, the **NM pre-tactical team** shall:
- Analyse the UUPs impact on previously identified hot spots.
  - Adapt the draft ADP for increased availability given by the UUP.
- Having received a briefing from the NM pre-tactical team and the MILO on D-1, in coordination with the NM AOLO, the **NM tactical team** shall:
- Prepare a briefing document for the day of operations. The document shall include:
    - Expected situation from D-1 plan.
    - AUP / UUP opportunities identified.
  - Ensure that this Information is disseminated externally if appropriate.
- After receiving a briefing from the NMOC Pre-tactical and MILO, the **NM AOLO** shall:
- Contribute towards the briefing document prepared by the NM tactical team for the day of operations. The document shall include:
    - Expected situation from D-1 plan.

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- AUP/UUP opportunities identified.

## Procedure during tactical operations

On the day of operations, having received a UUP, the **MILO**, in conjunction with the NM tactical team, shall:

- Analyse the impact of the UUP on previously identified hot-spots.
- Analyse the UUPs for additional route availability and advise the NM AOLO.

The **NM tactical team** shall:

- Ensure that NM tactical team members brief themselves from the briefing document produced on D-1.
- Analyse the tactical situation and re-evaluate opportunities.
- Continue to review and re-evaluate opportunities with each released UUP.

The **NM AOLO** shall:

- Brief themselves from the briefing document produced on D-1.
- Review and re-evaluate opportunities with each released UUP.

### 5.10.3. UUP requesting additional airspace / route segregation (ASM / ATFCM Procedure 3)

Ensuring more flexible use of airspace on the day of operations in order to better respond to ad-hoc military needs while minimising the negative impact on the network. This procedure is finalised with the publication of EUUPs according to the procedures described in the ERNIP Part 3 ASM Handbook.

**Note:** This procedure is, according to the **ASM Handbook**, not compulsory to all states.

## Procedure during pre-tactical operations

In the event of a UUP requesting additional airspace or route segregation, the **MILO** shall:

- Assess the impact of the request at Network level (e.g. on-loading sector, sector reconfiguration, complexity, work load etc.).
- Optimise requested airspace allocation (e.g. changing the activation time, flight level band, CDR closure details).
- Coordinate requested changes with AMC responsible.
- Inform the NM tactical team about the result.

The **NM pre-tactical team** shall:

- Assess the impact of the request at network level (e.g. on-loading sector, sector reconfiguration, complexity, work load etc.).
- Look for and evaluate all possible ATFCM solutions in order to minimise Network disruptions.
- Coordinate the resulting ATFCM solutions with all relevant parties.
- Update the draft ADP.
- Update the Network brief, INP and NOP Portal.

In coordination with the MILO, the **NM pre-tactical team**, shall:

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- Brief the NM tactical team and the AOLO for the day of operations:
  - Expected situation from D-1 plan.
  - AUP/UUP opportunities identified.

## Procedure during tactical operations

In the event of a UUP requesting additional airspace or route segregation, the **MILO** shall:

- Coordinate with the NM tactical team.
- Assess the impact of the request at Network level (e.g. on-loading sector, sector reconfiguration, complexity, work load etc.).
- Optimise requested airspace allocation (e.g. changing the activation time, flight level band, CDR closure details).
- Coordinate requested changes with AMC responsible.
- Inform the NM tactical team about the result.

Having been informed by the MILO regarding the intention to implement new or increase already published airspace segregation,

the **NM tactical team** shall:

- Verify with the responsible FMP if this new situation has got capacity impact resulting in monitoring/capacity value update in ETFMS.
- Assess the impact of the request at network level (e.g. on-loading sector, sector reconfiguration, complexity, work load etc.).
- Coordinate with the MILO for optimisation of airspace allocation (e.g. changing the activation time, flight level band, CDR closure details).

When optimisation is refused by the AMC,

the **NM tactical team** shall:

- Identify the flights impacted by the route closure.
- Try to reduce Network impact by looking for opportunities.
- Suggest rerouteing.
- Inform the NM AOLO.

Having been informed by the NM tactical team regarding an additional airspace or route segregation,

the **NM AOLO** shall:

- Identify the flights impacted by the new UUPs update.
- Look for the opportunities.
- Send RRP in coordination with the NM tactical team.

### 5.10.3.1. Management of CDR2 opportunities

The EAUP contains the consolidated list of available CDR2s, and closed CDR1s or permanent ATS routes as repetition of prior notice by NOTAM for D-1. It also contains the planned activations of restricted airspaces.

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The EUUP may be issued hourly from D-1 following the publication of the EAUP in order to update the EAUP. The concept is intended to allow the maximum shared use of airspace through civil / military coordination.

The following procedure describes how CDR2 opportunities are managed in pre-tactical and tactical operations. Once the EAUP is published, on D-1, it is possible to analyse which routes can benefit from the open CDR2 segments. The flights are selected depending on the delta cost improvement calculated by PREDICT / ETFMS.

All data will be collated for post operations and flight efficiency reporting purposes.

### Procedure during pre-tactical operations

After the injection of the EAUP on D-1,  
the **MILO** shall:

- Use the ETFMS / SIMEX and the CIAM tool to monitor the release of the EAUP data.

### Procedure during tactical operations

On the day of operations,  
the **MILO** shall:

- Continuously monitor any change on the availability of the CDR2 segments (EUUP) and inform the NM DOM and AOLO on the impact of the change.
- Use the ETFMS / SIMEX to simulate a group rerouteing. This is done twice per day:
  - At 7:00 UTC, for flights with EOBT from 9:00 UTC to 13:00 UTC.
  - At 10:00 UTC, for flights with EOBT from 13:00 UTC to 23:59 UTC.

After each group rerouteing is finalised (at 7:00 UTC and 10:00 UTC), proceed with the following actions:

- Analyse and visualise the interesting routes. An analysis of the validity period is to be done.
- Organise the flights list(s) per CDR2 segment and send the flights list(s) in the selection tab of the group rerouteing to the NM AOLO and IFPS (it is necessary to avoid possible duplications with the IFPS flight efficiency initiative).
- Share and discuss the results of the group rerouteing with the NM AOLO using the ETFMS / SIMEX results and the Profile Quality Indicators (PQI) report data. An analysis of the validity period is to be done.
- Check if the proposal utilises CDR2 segments and identify the flights that are part of the ASM process (these actions can be done on D+1) in order to prepare a report for post operations and flight efficiency comparing the increase of traffic in CDR2 segments. The report shall be prepared at least once per month.

The **NM AOLO** shall:

- Analyse the rerouteing proposals from the MILO and decide on the rerouteing proposals (RRPs) to be sent (candidates should present a reduction on any individual cost).
- Coordinate with the NM DOM and send the relevant RRP based on the above analysis.
- Log any relevant feedback in FREE.

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**6. PROCEDURES IN UNUSUAL CIRCUMSTANCES****6.1. ADVERSE OPERATING CONDITIONS AT AERODROMES**

Normal operating procedures at aerodromes can be affected by events which make compliance with ETOTs and CTOTs difficult or which may have an impact on arrivals.

**6.1.1. Short-term ATFCM solutions**

The NMOC may be able to minimise the impact of adverse operating conditions by coordinating short term modifications to the normal criteria for ETOTs and CTOTs and / or releasing individual flights by exempting them.

In situations where departures are affected by deterioration in local operating conditions and ETOT or CTOT cannot be met within the approved tolerance windows, the procedure described below may apply.

The procedure is designed to be in effect for a maximum of a 1 hour period of time, but it can be extended if necessary. The request has to be repeated every hour to confirm that the adverse condition continues and to verify if the current Network situation allows for further extensions. The maximum values of the Slot Tolerance Window (**STW**) / Departure Tolerance Window (**DTW**) are shown in the table below (except for traffic departing from A-CDM where a discretionary extension may be applied after assessing the Network impact).

	<u>Default</u>		<u>Minima</u>		<u>Maxima</u>	
	<u>Before</u>	<u>After</u>	<u>Before</u>	<u>After</u>	<u>Before</u>	<u>After</u>
DTW	15	15	0	0	15	30
STW	5	10	5	10	15	30

The procedure is aimed to cope with situations such as:

- Emergencies at the aerodrome;
- ATC system failures at the aerodrome or at the ACC not yet reflected in ATFCM measures but which may prevent departures for a short period;
- Departure rate significantly lower;
- Adverse weather (e.g. unmanageable de-icing conditions);
- Any other situation that may be identified as affecting the operation of the aerodrome.

The procedure shall not be used in case of an individual flight that cannot make its CTOT or ETOT, low visibility conditions or routine de-icing procedures.

The application of this procedure will modify the DTW for non-regulated flights and the STW for regulated flights. Values for both STW and DTW should normally be equally extended by the agreed amount of time.

**Departures from non-CDM aerodromes**

Departures from non-CDM aerodromes are not subject to any other conditions apart from those mentioned above.



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## Procedure

Where a need for a temporary modification of the taxi time or increase of the DTW / STW and / or exemption for one or more affected regulated aircraft from one of the **non-CDM aerodromes** of their responsibility,

the **FMP staff** shall:

- Check that the situation applies.
- Coordinate with the NM DOM,
  - to update the taxi time (see **Runway criteria update**);
  - to obtain approval for short term modifications to the STW / DTW;
  - for the exemption of specific flights from the departure regulation (see **Manual exemptions**).

The **NM DOM** shall:

- Assess the Network impact, especially in adjacent sectors of neighbouring ACCs.
- In case the Network impact analysis shows no particular problems, approve an extension of STW and DTW and introduce these values in the ETFMS and / or exempt the specific agreed flights.
- In exceptional circumstances (e.g. sector loads already close to or at their limits), coordinate with the FMP, devise alternative solutions (e.g. application of a regulation).
- Neither grant STW / DTW flexibility nor exemptions for any specific flight going into congested areas (high delay and adverse conditions).
- Inform the airport(s) / FMP(s) associated with receiving the main traffic flow about the new STW / DTW values (e.g. via AIM).
- Log the corresponding agreement in FREE.

## Departures from A-CDM

Departing flights from CDM airports, affected by this procedure shall have their profiles updated by the TTOTs if they fall within the new STWs and DTWs.

Updates coming from E-DPI, T-DPI-t, T-DPI-s falling within the STW will be accepted and profile updated. Should the updates bring the take-off time after the STW, the ETFMS will consider it as a DLA message and may recalculate the CTOT, cancel the slot or suspend the flight.

T-DPI-s bringing the flight before STW will be taken as 'No slot before', the flight will receive REA status and the flight should not be forced before the provided TTOT time.

A-DPI bringing the flight outside STW is automatically rejected (by the system).

In case of unmanageable de-icing problems, DTW / STW extension is possible for de-icing flights (if the de-icing status is present in the DPI message only those flights should be selected). If the slot extension for de-icing flights is not sufficient to improve the situation, a general DTW / STW extension may be requested. In such cases an extension of 10 minutes to the upper boundary is possible (see De-icing).

Depending on how difficult the adverse situation is at the affected A-CDM, the maximum values for the upper boundary of the DTW / STW may be further extended, but only where capacity is reduced at least to a 20% of its nominal value (as stored in CACD).

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## Procedure

Upon the expectation of adverse conditions, when a decrease of departure capacity is expected (e.g. single RWY operations, adverse weather operations, etc.) at an A-CDM,

the FMP / TWR in charge shall:

- Contact the NM DOM and increase awareness on an upcoming adverse situation.

The NM DOM shall:

- Inform the network about the potential delay at the specific airport (e.g. via AIM, NOP Portal).

In the event of confirming the adverse operating conditions,

the **FMP / TWR** in charge shall:

- Inform the NM about the specific deterioration in service provision (see **INFORMATION REQUIRED FROM FMP / TWR FOR CDM AERODROMES**).
- Identify the problems they are encountering.
- Coordinate with the NM DOM,
  - to update the taxi time (see **Runway criteria update**);
  - to obtain approval for short term modifications to the STW / DTW;

The **NM DOM** shall:

- Assess the Network impact, especially in adjacent sectors of neighbouring ACCs.
- In case the Network impact analysis shows no particular problems, approve an extension of STW and DTW and introduce these values in the ETFMS and / or exempt the specific agreed flights.
- In exceptional circumstances (e.g. sector loads already close to or at their limits), coordinate with the FMP, devise alternative solutions.
- Neither grant STW / DTW flexibility nor exemptions for any specific flight going into congested areas (high delay and adverse conditions).
- If necessary, inform the airspace users via AIM, NOP Portal.
- Inform the airport(s) / FMP(s) associated with receiving the main traffic flow about the new STW / DTW values (e.g. via AIM).
- Log the corresponding agreement in FREE.

In case of **severely disrupted operations** at an airport,

the **NM DOM** may:

- Force a small number of flights to depart after the STW but with a CTOT equal to the updated TTOT.

### 6.1.2. Management of low visibility conditions

Whenever low visibility conditions are forecast for an aerodrome in the area of responsibility of a particular FMP, such conditions may reduce the capacity so as to require ATFCM measures to be applied.

Reduced landing rates at certain busy European airfields during low visibility conditions can lead to excessive holding and a reduction in ATC capacity in adjacent ATC sectors.

There are three main possibilities:

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- Do nothing.
- Apply a regulation without XCD.
- Apply a regulation with XCD.

The '**do nothing**' option is available if, despite the demand, the capacity is still sufficient and enough airborne holding is available to accommodate traffic demand.

**Note:** The risk of the 'Do nothing' or the implementation of measures too late is that traffic will be held in the vicinity of the aerodrome and when the holding stacks become full, en-route holding and possible refusal of aircraft from adjacent ACCs may occur. If this happens, it may be almost impossible to recover efficiently. The only possible action is to apply measure(s) immediately with a rate of 0 / 60, only gradually increasing the rate as the situation stabilises.

The FMP, after coordination with the TWRs is aware of the achievable landing rate for inbound traffic associated to RVR capabilities. Then a regulation without exceptional conditions (XCD) may be effective, as confirmation is not necessary.

**Note:** Caution should be exercised if low visibility conditions are forecast for a limited time, as forecasts may be inaccurate. In these circumstances a simple regulation may be applied as a precautionary action. It is easier to apply and improve / cancel if the situation improves than to apply when it is too late and the aircraft are already airborne.

If the landing capabilities of the demand are not known or thought to be largely made up of aircraft that are likely not to meet the expected RVR, then a regulation **with XCD** may be more effective.

**Note:** The role of the FMP is essential in these conditions as the NM is effectively 'blind' and must rely on continuous assessment of the traffic situation by the FMP in order to adjust in real time. The RVR value used may not be directly related to the actual RVR at the aerodrome. It is a figure that may be used to filter the traffic which can be permitted to proceed.

### 6.1.2.1. Low visibility condition - without exceptional conditions (XCD)

The procedure is aimed at situations where a regulation is not deemed appropriate or a regulation without XCD is considered more beneficial.

#### Procedure

The **FMP staff** shall:

- Monitor actual and forecast weather for the aerodromes of their responsibility and promptly notify the NM tactical team of potential problems arising.
- Analyse demand and capacity in impacted aerodromes and airborne holdings.
- Analyse existing regulations.
- Where considered appropriate, request a regulation.
- Where a regulation is requested:
  - Provide the NM tactical team with the rates, time period and all other associated information (see **Apply a regulation**).
  - Monitor the load after the implementation of the regulation.
- If actual conditions deteriorate or improve, notify the NM tactical team as soon as possible and provide updates as required.

The **NM tactical team** shall:

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- Monitor actual and forecast weather and promptly notify FMP staff of potential problems arising.
- Obtain relevant information from the FMP and issue a low visibility alert message (AIM) to warn the AOs of the possible application of ATFCM measures and invite them to send an FCM with their RVR minima.
- Apply a regulation as requested by the FMP.
- Monitor the load after the implementation of the regulation.

### 6.1.2.2. Low visibility condition - with exceptional conditions (XCD)

The low visibility XCD is implemented as follows, a single regulation should be created for the required TFV:

- with XCD and a rate for the low visibility period, and
- without XCD and a rate as necessary when resuming normal operations.

There are three main cases indicating how flights can be affected by this XCD-regulation:

#### Case 1

Flights estimating during the XCD time are suspended, **if RVR is not known**. The FLS for suspended flights will contain a RESPBY time (clock + 20 minutes), enabling the AO to keep any present CTOT if the FCM with sufficient RVR is received by the NM in due time. The FLS will include the comment: 'RVR UNKNOWN'.

**Note:** Exempted flights (but not long haul) will also receive an FLS. If, later, the RVR is known and sufficient a DES will be sent or if it is insufficient a SAM will be sent.

**Note:** In the event of ETFMS failure the booking period is extended to ETFMS recovery time +30 minutes.

#### Case 2

Flights, estimating during the XCD time **with RVR in FCM or flight plan not compliant** with the requirement, will be delayed to arrive in the TFV after the XCD period. The SAM / SRM will include the comment: 'RVR CRITERIA NOT MET'.

**Note:** Exempted flights (but not long haul) will receive a SAM in order to arrive outside the XCD period. If later the RVR value of the exempted flight becomes sufficient an SLC will be sent.

#### Case 3

Flights estimating during the XCD time, having replied **with an FCM or flight plan giving an RVR value which is compliant** to the one that is stated in the XCD, will receive a SAM / SRM message in order to get a slot for landing during the low visibility period.

**Note:** Exempted flights (but not long haul) will not receive a SAM but will be displayed inside the XCD period with no delay.

The fact that the EOBT of a delayed flight (because RVR criteria not met) is no longer shifted will increase the visible delays. Care should be taken that these flights with a large visible delay are not manually forced into an XCD period where they are unable to land.

The decision for implementation and ownership of the ATFM regulation lies with the FMP.

#### **Procedure**

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The **FMP staff** shall:

- Coordinate with the NM tactical team the need of a regulation and provide the traffic volume (arrival), rates, time period of validity, regulation reason and RVR value.

The **NM tactical team** shall:

- Coordinate the traffic volume (arrival), rates, time period of validity and RVR value with the FMP staff.
- Inform the NM DOM.
- Create a new regulation:
  - With XCD as ANM remark.
  - Select '**XCD**' and '**Shift**'.
  - Introduce the agreed values: rate, time of applicability, reason, RVR
- Activate and publish the regulation.
- **Auto-link** the regulation (it will avoid that non-compliant RVR aircraft are pushed into the regulation).
- Keep the Helpdesk informed.

The **NM DOM** shall:

- Ensure that an AIM is prepared and issued with information about the new XCD regulation.

### Modify an XCD low visibility regulation

If a modification to the XCD regulation is required to adapt to new circumstances (improvement or deterioration),

the **FMP staff** shall:

- Request these changes to the regulation.

The **NM tactical team** shall:

- Coordinate the new values: rate, RVR and ending time of the regulation.
- When modifying only RVR, do not change any times.
- Modify the rate as agreed with the FMP.
  - If the regulation has **not started**, modify the rate, end time of the regulation and RVR (if necessary).
  - If the regulation has **started**, add a sub-period with XCD selected and new rate and RVR (if necessary).
- Inform the NM DOM.
- Keep the Helpdesk informed.

The **NM DOM** shall:

- Ensure that an AIM is prepared and issued informing the users of the modifications.

#### 6.1.3. De-icing

The management of de-icing conditions at aerodromes within an FMP's area of responsibility requires close coordination between those involved in de-icing, ATC and ATFCM.

Modifying the taxi time parameters in ETFMS ensures that any additional time for de-icing at the aerodrome is absorbed by the taxi time and not generated as ATC delay. It also offers ATC and the AO greater flexibility in such conditions. It is expected that the coordination process will be reflected in the taxi time.

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The NM will not normally give additional slot tolerance increases to flights departing from aerodromes where de-icing procedures are in force.

Only when the situation at a particular aerodrome becomes unmanageable due to unforeseen events such as the breakdown of de-icing rigs, the DTW and STW could be extended for a maximum period of 1 hour. It can be extended if necessary. The request has to be repeated every hour to confirm that the adverse condition continues and to verify if the current Network situation allows for further extensions.

### Procedure

The **FMP staff** shall:

- Agree with ATC at the aerodrome on any changes to the taxi time for the aerodrome.
- Coordinate with the NM tactical team as soon as possible which actions should be taken:
  - Increase the taxi time (see **Runway Criteria Update**) and ensure that the changes are notified to the NM tactical team at least two hours prior to the likely implementation of de-icing procedures for that aerodrome.
  - Consider modification to the slot tolerance window (STW) or departure tolerance window (DTW) (see **Short-term ATFCM solutions**). Only when the situation at a particular aerodrome becomes unmanageable.
  - If the problem is foreseen to extend beyond 1 hour then, for non-CDM airports, apply a departure regulation with a monitoring value which can be accepted (see **Apply a regulation**).

The **NM tactical team** shall:

- Coordinate and advise the FMP staff upon reception of such a request.
- Apply the agreed solution.
- Monitor its implementation.
- If the situation at the airport becomes unmanageable, extend the DTW and STW for a maximum period of 1 hour (as it is described in **Short-term ATFCM solutions**).

#### 6.1.4. Interruption of DPI messages

The interaction between the NMOC and CDM aerodromes requires two conditions to be met:

- a functional local A-CDM implementation governed by thorough local CDM procedures and
- fully operational systems on both sides (NMOC and Airport) combined with a flawless system-to-system communication.

However, operational issues or technical system failures can deteriorate the quality of the DPI messages, to the extent that they are no longer providing valuable progress status of the flights and / or resulting in further disturbance of operations at the airport. This procedure allows the temporary interruption of DPI messages.

In case of disrupted operations at the CDM airport, **Short-term ATFCM solutions** Departures from A-CDM, as an initial mitigation measure. In order to judge the severity of the disruption, consult **LEVELS OF IMPACT ON NETWORK OPERATIONS OF CDM AIRPORTS** as reference. If the operational consequences are further degraded than the conditions set out in this section (TSAT / TTOT transmitted via the DPI messages are less reliable than the FPL EOB / ETOT) this procedure may apply.

Several systems are involved in the A-CDM information sharing process. Hereunder is a list of possible unplanned issues that might affect the systems and the communication line:

- Technical failure of one of the airport CDM systems.
- Instable pre-departure sequencer used by the FMP / TWR.

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- Loss of communication between airport CDM systems.
- Technical failure affecting the communication between ETFMS and the Airport systems.
- Failure of the NM B2B Web Service.
- And others.

In such cases of technical system failures, this procedure may apply.

Planned interventions / outages such as technical maintenance could also cause a temporary interruption of the DPI transmission during a known period of time. In such cases this procedure may apply.

**Note:** The NMOC does not monitor the quality and completeness of the reception of DPI messages on a continuous basis.

### Procedure

Where a deterioration of the quality of DPI messages is identified, the **FMP / TWR staff** shall:

- Contact the NM DOM.
- In coordination with the NM DOM:
  - Identify the cause for DPI deterioration: severely disrupted operations, technical system failure or planned technical maintenance / outage.
  - Verify if all other options for dealing with this type of situation have been evaluated (see **Short-term ATFCM solutions**).
- Inform the NM CSO of technical system failures or any planned technical maintenance / outage.
- In case of planned technical maintenance / outage, allow a notice period of at least one day before the start of the intervention.
- If required, request the NM DOM to interrupt the DPI connection by using the following terminology: 'Disable all DPI message processing from <hh:mm>, <ICAO code> airport in Local Mode'.
- Coordinate with the NM DOM:
  - The time period when the interruption of the DPIs is in place.
  - A time when the coordination will be resumed in order to reassess the situation.
- After the disabling of DPI processing in the ETFMS, follow the procedures defined for non-CDM aerodromes.
- If it is decided to disable the transmission of DPI messages, use the following terminology to inform the NM DOM: '<ICAO code> airport will disable transmission of DPI messages for departure starting at <hh:mm> for approximately <time in hours> hours (or Until Further Notice) due to <specify reason>'.

The **NM DOM** shall:

- Contact the FMP / TWR staff (in case the FMP / TWR staff have not reported yet).
- In coordination with the FMP / TWR:
  - Identify the cause for DPI deterioration: severely disrupted operations, technical system failure or planned technical maintenance / outage.
  - Verify if all other options for dealing with this type of situation have been evaluated (see **Short-term ATFCM solutions**).
- Inform the NM OM, in case of a request to interrupt DPI messages.



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- Coordinate with the FMP/TWR:
  - The time period when the interruption of the DPIs is in place.
  - A time when the coordination will be resumed in order to reassess the situation.

- Inform the NM CSO of technical system failures.

The **NM OM** shall:

- Approve the interruption of DPI messages from the concerned aerodrome.
- Contact the NM APT Unit if the issue remains unsolved.

The **NM DOM** shall:

- Disable DPI processing in the ETFMS for the concerned aerodrome.
- Ensure that an AIM is sent and the Headline News is updated.
  - In case of planned technical maintenance / outage, a single AIM with the period of intervention needs to be sent.
  - In case of planned technical maintenance / outage with duration of less than 3 hours, it is not needed to disable the DPI processing in the ETFMS. Otherwise, the same procedure applies as for unplanned issues described before.

Once the FMP / TWR staff decides that DPI messaging can be resumed, the **FMP / TWR staff** shall:

- Request the NM DOM to enable DPI processing in the ETFMS.

The **NM DOM** shall:

- Enable DPI processing in the ETFMS for the concerned aerodrome.
- Ensure that an AIM is sent.

## **6.2. MANAGEMENT AND RECOVERY OF A DISRUPTION**

The objective of this operational procedure is to improve the management and the recovery process following a major disruption (mainly for ANSP system failures, but the same concept is applicable to any other kind of disruption affecting the Network).

The decision for implementation and ownership of the ATFM regulation lies with the FMP.

### **6.2.1. Disruption phase**

The NM and FMPs will apply measures (zero rate or any other rate agreed with FMP) with an initial standard duration of 2 (two) hours, to be reviewed every 30 minutes. However, a different initial zero / low rate regulation duration could be set, depending on the type or location of the disruption and taking into account the flight list (high number of long haul flights). This procedure can be applied for en-route sectors, AUA and aerodromes.

FMPs will nominate a disruption focal point that will be responsible to coordinate with the NM point of contact - Head of Operations or NM OM - the information to be published in NOP ref the disruption reason and any other relevant information on the end of disruption and start of the recovery phase. The ANSP focal point will contact the Head of Network Operations (+32 499 942365) or the NM OM (+32 2 745 1931).

All the technical coordination about ATFCM measures application, possible extension and, mitigation measures will be performed by NM DOM / SNOC and FMP (except the initial application of the regulation when disruption is notified, assuming that the first call to NMOC will be done with the NM NOC – CASA position).



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### The use of Flight Confirmation Message (FCM)

If FCM is used: XCD must be selected as well and all flights, including the exempted flights, originating from the ATFCM Area and the Adjacent Area will be affected by the regulation during the non-availability and will be suspended (FLS). At the reception of an FLS, AOs must send an FCM if the flight still intends to operate. They will receive a SAM / SRM in order to arrive after the re-opening time. The SAM / SRM will include the comment: 'AERODROME OR AIRSPACE OR POINT NOT AVAILABLE'. Flights not confirming will remain suspended. Where AOs prefer to operate to an alternate destination for flights not yet departed, they must cancel the FPL and refile to the alternate aerodrome (in case of aerodrome not available).

### The use of delay threshold mechanism

If the delay threshold mechanism is used: flights with a delay larger than the threshold (usually 3 hours in this case) will be suspended (FLS) and those with a delay lower than the threshold will receive a SAM. Exceptional conditions (XCD) may be used together with delay threshold mechanism to capture exempted flights.

### The use of Exceptional Conditions

In the event of the non-availability (zero-rate regulation) of an aerodrome or airspace, NM exceptional conditions (XCD) should be used. FPLs will be accepted in the IFPS and processed by the ETFMS accordingly. The ETFMS will either suspend flights or delay flights originating from the ATFCM Area and the Adjacent Area (including the exempted flights) to arrive when the aerodrome or airspace is available. After the non-availability period, the regulation should continue without XCD to regulate a possible bunching if needed.

### The use of 'Chaotic situation'

Setting 'Chaotic situation' will automatically set the 'OBT AFTER' to 30 minutes before the current clock time and de-select 'Protect A-DPI flights' in order to capture as much traffic as possible. Depending on the nature of disruption, the OBT AFTER may be further adjusted – check the flight list and coordinate / evaluate with the FMP if necessary.

Any of the above practices require prior coordination with FMP and relevant information published in NOP Portal or via AIM.

### Procedure

The **FMP staff** shall:

- Coordinate with the relevant CASA position (manned by the NM NOC) the need of a zero-rate regulation (or any other low rate decided by the FMP) and provide the traffic volume(s) and the regulation reason, based on local contingency plans/procedures. The regulation should not exceed 2 hours duration, unless other reasons require a different duration.
- Contact the NM DOM / SNOC **every 30 minutes** to update the ATFM regulation, if necessary.
- Provide the expected end time of the disruption, as available, If not done by the ANSP focal point.

The **NM NOC in CASA position, following the first call from the FMP, shall:**

- Apply the ATFM measure(s) not exceeding 2 hours:
  - For a zero rate regulation:

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- Select '**XCD**' and '**Shift**' and add 'XCD' as ANM remark.
- Introduce the agreed values: zero rate, time of applicability, regulation reason.
- Set '**Chaotic situation**' in the Slot Change Control Display.
- For a low rate regulation:
  - Introduce the agreed values: rate, time of applicability, regulation reason.

- **Auto-link**, activate and publish the regulation.
- Handover the NM DOM / SNOC on duty.

The **NM DOM / SNOC** shall then:

- Take-over any further coordination and action agreed with the FMP and open a dedicated disruption position if necessary.
- Coordinate the diversion management in order to accommodate rerouted flights.
- Depending on the amount of flights bunching at the end of the ATFCM measures and considering the impact on AOs and the Network impact, evaluate, in coordination with the FMP, the use of **FCM** or **Delay Threshold Mechanism** (with a value of 3 hours).
- Inform adjacent ANSPs the Network impact of the bunching.
- Inform stakeholders via the NOP Portal Headline News and AIM of:
  - any **ATFCM measure applied**,
  - the reason of the disruption as communicated by the ANSP focal point to Head NOS or NM OM (**avoid the word "closure" but rather use airspace or aerodrome unavailability**),
  - information on **airports capability for diversion management**,
  - **information for long haul flights (see the note below)**,
  - the **prognosis for the coming hours**,

**Note: Even if there is no info, there should be communication that 'news is expected in 'x' minutes' or 'no news available at this stage'.**

- Keep the Helpdesk informed about the delay situation.

**Note:** Advise long-haul flights (via Headline News or AIM) not captured by the initial 2 hour regulation, that landing at destination is not granted as the end of the disruption is unknown, so inviting them to fuel for the alternate or the nearest available airport.

- Inform the Aircraft Operators Liaison Cell (AOLC) as soon as the disruption is notified to the NMOC. The AOLC will provide AOs info on the disruption, if delegated by the Head of NOS or by the NM OM.

If **no contact is received 30 minutes** after the initial application of the ATFCM regulation,

The NM **DOM / SNOC** shall:

- Call the FMP asking whether to extend the regulation by one hour or any other agreed period, considering the available end of the disruption expected time.

**This procedure will be applied until the end of the disruption period.**

## 6.2.2. Recovery Phase

At a certain point in time, the FMP will communicate to the NMOC that the problem is going to be solved and therefore it will be necessary to replace the disruption measures with recovery measures. If the recovery sector configurations / capacities are updated frequently at short

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notice by the FMP, often not taking into account the flights bunching at the end of the disruption measures, it may cause heavy fluctuations to individual flight delays and departure time uncertainty for AOs (receiving several SRMs). The application of the recovery procedure will address the bunching issue and it will minimise CTOT fluctuations, giving AOs more stable departure times, and improving Network predictability. However, a stable CTOT will only be achieved when full capacity/sector configuration will be provided by the FMP.

As the duration of the recovery measures depends on the capacity values and sector configuration availability, it is not possible to set any fixed value beforehand.

The ANSP focal point will continue to coordinate with Head of Network Operations or the OM any possible relevant info on the recovery phase (the technical coordination will still be performed by DOM/SNOC and FMP).

### Procedure

At a certain point in time the FMP will communicate the DOM / SNOC that the disruption is (going to be) solved and ATFCM regulations need to be updated. Usually there is a bunching at the end of the zero / low rate regulations.

The **FMP staff** shall:

- Provide DOM / SNOC the most realistic sector configuration / capacities **until the end of the tactical day** (and beyond, if necessary) and coordinate the application of the recovery measures.
- Any other relevant update of the situation.

The **DOM / SNOC** shall:

- Apply the recovery ATFM measures **until the bunching disappears** from each applied ATFM measure.
- Take into account, if necessary, airport(s) night curfew, and whenever possible, coordinate curfew extension with the relevant airport authority (coordination can also be done by the NM Airport Unit staff, if / when available in the NMOC).
- Assist AOs with individual (or flow) alternative routing solutions (in coordination with the NM AOLO and IFPS staff) in order to minimise the ATFM delays given by the recovery measures.
- Keep stakeholders up to date through the NOP Portal Headline News and AIM on any applied measure and prognosis on the Network situation and delays until the conclusion of the recovery phase.
- Keep the Helpdesk informed about delay situation.

### 6.2.3. Priority repositioning of diverted aircraft

When an aircraft is diverted due to an aerodrome closure, severe capacity constraints or any other reasons, AOs may suffer extreme crewing difficulties if the aircraft cannot re-position to their original destination.

The following procedure is designed to give these flights a priority back to their original destination in case they are delayed by one or several regulations.

These difficulties can be a critical loss of crew / aircraft without possible recovery the same day if the flight is penalised by heavy delays because of ATFCM measures.

At all times the NM DOM may identify in the ETFMS the diverted flights and where they have diverted to.

### Procedure

Having received a request (via phone or e-Helpdesk) for assistance regarding a diverted flight,

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the **NM tactical team** shall:

- Inform the requester that the flight will be considered for priority re-positioning.
- Transfer the request to the NM AOLO (or the NM DOM, in case the NM AOLO is not on duty).

The **NM AOLO (or the NM DOM)** shall:

- Confirm that the flight has indeed diverted and will be experiencing severe crewing difficulties.
- Pass all relevant information to the NM DOM and indicate earliest and latest possible times of departure.
- Log the call sign in FREE.

The **NM DOM** shall:

- Check all relevant details to determine the severity of the situation together with information on the latest possible departure time.
- Coordinate with the relevant FMPs and execute agreed actions to ensure that all reasonable steps are taken to mitigate delay for the diverted flight to return to its original destination.
- Respect the acceptance rate agreed with the affected FMPs.
- Continue monitoring the number of diverted flights in the flight list and the impact on the Network.
- Update the NOP Headline News and issue AIMs concerning diversions and airport status, where necessary.

Upon completion of the steps above,

the **NM AOLO (or the NM DOM)** shall:

- Inform the AO concerned with feedback and any supplementary instructions whether or not any assistance was provided.

The **FMP staff** shall:

- Coordinate at local level any operational disruptions and severe capacity constraints possibly resulting in flight diversions.
- Identify the number of diverted flights.
- Ensure that information on diverted flights is correctly updated by sending ATC Flight Plan update messages (ACH, ARR).
- Evaluate the impact on local airport operations and coordinate significant changes with the NM tactical team (limited availability for diversions, delays in ground operations...).
- Coordinate with the NM tactical team to ensure that all reasonable steps are taken to mitigate delay for the diverted flight to return to its original destination.
- Continuously report to the NM tactical team concerning the severity of the situation and anticipate its evolution.

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## 6.3. INDUSTRIAL ACTIONS

## 6.3.1. General pre-tactical tasks for ANSP industrial action

After confirmation of strike action (NOTAM), coordination should be affected between the NMOC and the relevant FMP in order to ascertain the level of protection that is required both during and after the strike period. Legal procedures may govern ANSP strike action.

**Note:** In case of **French, Greek or Italian** industrial actions, there are **specific procedures** with details agreed with the respective ANSPs that **shall be followed**.

**Procedure**

The **FMP staff** shall:

- Communicate to the NM those details of the planned strike action that they have available.

Following information received on strike action,

the **NM pre-tactical team** shall:

- Verify that a strike NOTAM has been issued.
- Ascertain if a minimum service is to be provided.
- Coordinate with the affected FMPs on what protection is required and ascertain the associated acceptance rates.
- Apply regulations as agreed with the FMPs impacted by the industrial action. Note that regulations may need to be **auto-linked** and use FCM or a delay threshold value (3 hours).
- Assess the Network and investigate opportunities for alternative options for traffic to avoid the industrial action area: alternative routes that can be exceptionally open, RAD measures that can be modified (relaxed), use of EURO restrictions, ASM / ATFCM coordination... and agree as appropriate with concerned FMPs and AOs.
- Brief adjacent FMPs and coordinate an action plan to be prepared for probable on-loaded traffic.
- Participate in all relevant conferences.
- Include all details in the D-1 INP and Network Brief and all industrial action days.

The **NM OM** shall:

- Ensure that a news flash is issued in the NOP Portal Headline News with information regarding the strike, using the NOTAM as reference.
- Decide on the conferences and the participants required in order to have appropriate coordination.
- Ensure that the NOP Portal Headline News is updated with the conferences and their agendas.
- Chair all related conferences.
- Ensure that the NOP Portal Headline News is updated with a summary of the conferences (even publish the conference) and any other relevant information if deemed appropriate.
- Ensure that applicable telephone numbers are shared between:
  - NM manager on call, and
  - NMOC Operations Manager, and
  - The locally responsible manager.

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### 6.3.2. French industrial action

A strike in France is consecutive to an advanced notice (5 days) given by one or several ATCOs or Civil Service Unions.

DSNA will provide information regarding the strike via the blog <http://dsnado.canalblog.com>. Additionally, DSNA may host teleconferences (in French) with AOs to inform airspace users of the ATFCM measures.

DSNA staff cannot be asked about their intention to take strike action until the official start time of their duty. According to the importance of the expected action, the French administration will decide prior to the strike one of the following possibilities:

#### With Minimum Service

Controllers are requisitioned.

A NOTAM is issued that may include flights restrictions on airports. The airports applying minimum service are:

LFPO / PG / RG / RS / LC / LL / ML / MN / BO / BD / BI / BL / SB / KJ / KB / KC / ST and overseas airports.

#### Procedure during pre-tactical operations

The **DSNA staff** shall:

- Issue a general NOTAM informing of the industrial action and describing the ATFM measures and minimum service.
- Coordinate with the NM pre-tactical team the sector configurations, sector opening scheme and regulations (with their associated information) that will provide the required minimum service during the strike.
- Coordinate with the NM pre-tactical team possible ATFCM measures after the strike to avoid bunching.
- Participate in the teleconferences hosted by the NM and provide information.

The **NM pre-tactical team** shall:

- Introduce in PREDICT the sector configurations, sector opening scheme and regulations for all French ACCs with the updated rates during and after the strike, as coordinated with DSNA. Note that regulations may need to be **auto-linked**.
- Prepare possible mitigation alternatives for AOs and coordinate with impacted FMPs as required, such as:
  - Rerouteing via DAAA and DTTC.
  - Alternative routes within GCCC.
  - Rerouteing via T routes (T9, T213 and T16).
  - Relaxation of RAD restrictions (e.g. Swiss RAD).
- Prepare information and updates for any possible teleconference.
- Reflect the ATFCM measures and possible mitigation measures in the INP and Network Brief.

#### Procedure during tactical operations

The **DSNA staff** shall:

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- Monitor the application of the regulations and report to the NM tactical team on any possible modification to the regulations according to actual staffing.
- Request cancellation of ATFM measures on specific sectors regulations.

The **NM tactical team** shall:

- Monitor the application of the regulations and perform any modifications as reported by DSN in the ETFMS.

### Without Minimum Service

If the level of anticipated strike action in different ACCs is not very high, the French administration may decide not to implement 'Minimum Service', in which case, the situation is less predictable.

There are no requisitioned controllers. The problem with this scenario is that the situation is liable to change at short notice during the strike period, as different sectors are affected by strike action.

**Note:** A specific ACC or a TOWER (for example LFPO) may decide of an industrial action (with an advanced notice of 5 days). It depends on the decision of the French administration whether a minimum service is implemented or not.

### Procedure during pre-tactical operations

The **DSNA staff** shall:

- Issue a NOTAM informing of the industrial action.
- Coordinate with the NM pre-tactical team the sector configurations, sector opening scheme and regulations (with their associated information) for each impacted ACC. Each individual FMP decides the protection they will require.
- Coordinate with the NM pre-tactical team possible ATFCM measures after the strike to avoid bunching.

The **NM pre-tactical team** shall:

- Introduce in PREDICT the sector configurations, sector opening scheme and regulations for all French ACCs with the updated rates during and after the strike, as coordinated with DSN. Note that regulations may need to be **auto-linked**.
- Prepare possible mitigation alternatives for AOs and coordinate with impacted FMPs as required, such as:
  - Rerouteing via DAAA and DTTC.
  - Alternative routes within GCCC.
  - Rerouteing via T routes (T9, T213 and T16).
  - Relaxation of RAD restrictions (e.g. Swiss RAD).
- Prepare information and updates for any possible teleconference.
- Reflect the ATFCM measures and possible mitigation measures in the INP and Network Brief.

### Procedure during tactical operations

The **DSNA staff** shall:

- Monitor the application of the regulations and report to the NM tactical team on any possible modification to the regulations according to actual staffing.



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The **NM tactical team** shall:

- Monitor the application of the regulations and perform any modifications as reported by DSNA in the ETFMS.

### 6.3.3. Greek industrial action

When an industrial action is decided in Greece by ATCOs' unions, an advanced notice of four working days must be given. In the meantime, the Civil Aviation may take legal action. If the court rules that the industrial action is illegal, it cannot take place.

Alternatively if the court accepts the action, a NOTAM is issued 24 hours before the industrial action, controllers are requisitioned and a pre-tactical plan is created.

Overflying traffic is not affected, only arrivals and departures to / from Greek aerodromes. Usually exclusion for some flights are applied and communicated in the NOTAM.

Examples of Greek industrial action:

- a) 0900-1300;
- b) 2201-2159R (R=next day).

Usually the industrial action is of **3, 4 or 24 hours duration**.

The purpose of the pre-tactical plan is to ensure that departures and arrivals are not in the airspace during the industrial action period (in this case 0900-1300 or 2201-2159R) by using the DEP, ARR and global airspace regulations.

**Note:** In Greece, unlike in Italian industrial actions, arriving traffic does **not** have 30 minutes grace to reach its destination after entering the airspace.

**Note:** Although, according to the NOTAM, only military flights participating in mil exercises are not affected by the industrial action, in most cases all mil flights are excluded after coordination with Athens FMP.

### Procedure during pre-tactical operations

The **HCAA staff** shall:

- Issue a NOTAM to inform of the call for the strike 24 hours in advance.
- Promptly send the updated list of authorised flights to the NM (where appropriate).
- Coordinate with the NM pre-tactical team.

The **NM pre-tactical team** shall:

- Apply the following in PREDICT:
  - **4 zero rate regulations** for **arrivals** to cover the starting period of the industrial action, application for the first 2 hours would be enough. Traffic volumes (TFVs) are **LGSTRAR1-4**, with reference locations 4 aerodrome sets, so the zero rate periods refer to landing time. Examples: a) 0900-1100; b) 2201-0000R or preferably 2201-0300R to avoid complications with overlapping of regulations starting the day before and linking with the global zero rate that continues to the end of the industrial action.
  - **13 zero rate regulations** for **departures** to cover the starting period of the industrial action, application for 2 hours would be enough. TFVs are **LGSTRDE1 / 2 / 3 / 4 / 6 / 7 / 8 / 9 / LGSTDE10 / 11 / 12 / 13 / 14** (reference locations are the adjacent ACCs LWSSCTA, LBSRCTA, LAAACTA, LIBBCTA, LMMMCTA, HECCCTA, LCCCCTA, LTBJTMA, LTBSTMA, LTFETMA, LTBATMA, LTAAICTA, LTAAZCTA), so the zero rate periods refer to exiting the Greek airspace. Examples: a) 0900-1100; b) 2201-0000R or preferably 2201-0300R to avoid complications with overlapping of



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regulations starting the day before and linking with the global zero rate that continues to the end of the day.

- **1 zero rate regulation** for the **global Greek airspace** to cover the period to the end of the industrial action, starting by overlapping the departure and arrival regulations for 1 hour. TFV is **LGALL** with reference location consisting of all Greek airspace including LGGGCTA, LGMDCTA, TMAs, aerodrome zones, military areas, etc. From this traffic volume the departures / arrivals from / to Greek military airports are excluded. Examples: a) 1000-1300; b) 2300-2159R or preferably 0100R-2159R to avoid complications with overlapping of regulations starting the day before.
- The regulation for **LGALL** is the only one that shall be **auto-linked**.
- Select '**XCD**' and '**Shift**' (for all strike regulations).
- Select '**FCM**' (for all strike regulations).
- Prepare possible mitigation alternatives for AOs and coordinate with impacted FMPs as required.
- Reflect the ATFCM measures and possible mitigation measures in the INP and Network Brief. Include the following information in the INP:
  - As the NM is unable to restrict out-of-area flights with ATFCM measures, AOs must ensure these flights conform to published NOTAMs regarding airspace and airport non-availabilities.
  - Authorised flights (as in the NOTAM) will be suspended as well and they are requested to call Athens FMP in order to be de-suspended and excluded from the zero rate regulations.
  - LGGG / LGMD telephone contacts:  
FMP operations room: +30 210 9972654 / +30 210 9972693  
ACC Supervisor: +30 210 9972603  
ATFM-ASM division (office hours): +30 210 9972656 / +30 210 9972404 / +302109972405

## Procedure during tactical operations

The **HCAA staff** shall:

- Monitor the flight list.
- Notify the NM tactical team any flight that shall be excluded.
- Coordinate with the NM tactical team the ATFCM measures before or after the industrial action period and any possible modification to the pre-tactical regulations.

The **NM tactical team** shall:

- Manually exclude from the regulations those flights communicated by HCAA staff.
- Coordinate with the HCAA staff the ATFCM measures before or after the industrial action period and any possible modification to the pre-tactical regulations. Note that Athens FMP requests not to apply pre-tactical ATFM measures before or after a 4-hour period industrial action, but tactical regulations may be required.
- Log any relevant feedback in FREE.

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### 6.3.4. Italian industrial action

The Italian law 146 / 1990 regulates ATC industrial actions.

Italian ATCOs' unions must notify ENAV of the call for action not later than 10 calendar days before the strike day. The final decision might be taken at D-1. NOTAM is issued by ENAV (notified to the NM).

Normally ATC strike periods do not exceed 4 hours.

During an ATC strike a minimum service is applied. ATS services must be granted to the flight categories listed below during the strike period:

- State, humanitarian, medical, emergency, military, SAR, essential services.
- All intercontinental arrivals (including those transiting via Italian domestic aerodromes). According to Italian law, departures from HE, OL and LL are considered as intercontinental.
- All domestic flights in progress at the time of the commencement of the strike.
- All flights over-flying the Italian airspace (all departure / destination non-Italian airports).
- The arrivals to Italian airports of International flights (departing from ECAC states) whose Estimated Time of Arrival (ETA) is not more than 30 minutes after the commencement of the strike as in FPL.
- All departures from Italian airports that are scheduled (EOBT) prior to the commencement of the strike and delayed for reasons beyond the control of the parties.
- All flights authorised as published in the list issued by ENAC (part of intercontinental departures, part of the domestic flights to / from Italian islands) including updates that might be received during the strike day.
- Any other flight as requested by the Italian Network Manager position in LIRR ACC.

The requests for flight authorisation shall be received by ENAC - the Italian Civil Aviation Authority - (sent by the AO) not later than 8 working days prior the strike day. Although it is mandatory for AOs to respect the '8 days prior' rule, a few flights can be (in exceptional circumstances) authorised by ENAC after the deadline. ENAC will promptly send the updated list to ENAV that will forward it to the NM (by mail to the NM OM and the NM DOM) after changing the IATA call signs in ICAO code:

All FPLs of the flights not part of the categories listed above may be cancelled by AO or may be operated after the end of the strike period.

The role of the NM (NMOC) is to comply with the Italian law 146 / 1990 requirements and to ensure that all authorised flights listed above are regularly operated by AOs.

The contact points with ENAV and ENAC dealing with industrial actions are:

- The Italian Network Manager position in Rome ACC for ATFCM pre-tactical / tactical issues (via a VCS dedicated number in NMOC).
- ENAC strike coordinator office for issues related to the authorised flight list: +39 06 4459 6402

If the strike is confirmed by NOTAM, the NM will apply at D-1 a number of ATFM measures (zero rates), all applied with 'XCD / FCM: YES'. All zero rates have been agreed with ENAV and ENAC.

**Note:** By applying the 'XCD / FCM: YES' flights that are ATFM Exempted will be suspended as well.

The purpose of the zero rates is to close the Italian airspace (during the strike period) to all flights not being part of the categories to which ATS services must be granted (as in the list above).

The zero rates shall be applied pre-tactically and reflected in the ADP. The **TFV set LISTRIKE** contains all the TFVs prepared in advance that should normally be used for Italian industrial actions.

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Due to the high workload involved, a fixed strike position in the FM area will be necessary to deal with all the exclusions and coordination during the strike day. ENAV may request the exclusion of flights during the day of operations. Note that the responsibility of the exclusions is entirely attributed to ENAC / ENAV.

A different general rule is applied in case of airport handling or other air transport personnel strike: The services must be granted to 20 per cent of all the flights planned during the strike period.

### Procedure during pre-tactical operations

When a strike will be performed in an area of Italian responsibility,  
the **ENAC (or ENAV) staff** shall:

- Notify to the NM the call for strike as soon as it is received from the unions.
- Promptly send the updated list of authorised flights to the NM OM and the NM DOM after changing the IATA call signs into ICAO code.

Upon reception of the call for strike,

the **NM OM** shall:

- Publish the information on the strike in NOP Headline News as soon as received, together with the ENAC note to AOs (as an attachment).

#### In case of a national strike

The **NM pre-tactical team** shall:

- Apply 14 zero rates:
  - **5 zero rates** based (as reference location) on A / D sets (category: departure), one for each Italian ACC except for LIRR that has two zero rates for departures because this kind of AD set may include only 10 aerodromes. TFBs are: **LIBBDST1**, **LIMMDST**, **LIPPDST1**, **LIRRDST1**, and **LIRRDST4**.
  - **5 zero rates** based on A / D sets (category: arrivals, 2 AD sets for LIRR). TFBs are: **LIBBAST1**, **LIMMAST**, **LIPPAST1**, **LIRRAST1** and **LIRRAST2** (start time + 30 minutes).
  - **4 zero rates** based on airspaces TFBs for a national strike with intercontinental flights from Adjacent Areas (North Africa, Middle East) excluded. TFBs are: **LIBBSTR**, **LIMMSTR**, **LIPPSTR**, **LIRRSTR** (start time of these regulations at least 3 hours before the strike end time and auto link).
  - Select '**XCD**' and '**FCM**' (for all zero rate regulations).
  - **Auto-link** the regulations.
- Prepare possible mitigation alternatives for AOs and coordinate with impacted FMPs as required.
- Reflect the ATFCM measures and possible mitigation measures in the INP and Network Brief.

#### In case of a local ACC strike (one or more than one, but not all Italian ACCs),

the **NM pre-tactical team** shall:

- Apply the same zero rate regulations, but only those applicable for the striking ACCs.
- Prepare possible mitigation alternatives for AOs and coordinate with impacted FMPs as required.
- Reflect the ATFCM measures and possible mitigation measures in the INP and Network Brief.

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**In case of local aerodrome strikes** (individual aerodromes or group of aerodromes),

The **NM pre-tactical team** shall:

- Apply zero rate regulations to the appropriate TFBs included in **LISTRIKE**.

**In case of non-ATC industrial actions** (e.g. airport handling or other air transport personnel strike),

the **ENAC staff** shall:

- Inform the NM in a timely manner on all planned industrial actions by providing a list of authorised flights.

Upon reception of such information,

the **NM OM** shall:

- Publish the information on the strike in the NOP Headline News as soon as received to inform all airspace users.

## Procedure during tactical operations

During the strike day,

the **ENAV staff** shall:

- Detect inbound military flights originating from foreign aerodromes (except OOA).
- Detect all flights departing from Italian airports having an EOBT prior to the commencement of the strike that are delayed for reasons beyond the control of the parties (e.g. delayed by any other ATFM measure in force during the day of the strike or any other delay not depending from the AO). These flights shall be granted ATS services.
- Coordinate with the NM tactical team and promptly notify the previous flights and any other suitable flights, in order to exclude them from the zero rates by phone contacting the NM OM / NM DOM or the dedicated strike position (VCS), without the need of a fax or email confirmation.

The **NM tactical team** shall:

- Manually confirm and exclude all the authorised flights (as in the aforementioned list) from the zero rates.
- Together with ENAV, detect and exclude from the zero rates inbound military flights originating from foreign aerodromes (except the OOA) and exempted flights.
- Promptly exclude from the zero rates any other flights as notified by ENAV.
- It could happen that one (or more) ACC(s) or aerodrome(s) cancel the strike, in such case just cancel all zero rates related to the ACC(s) or aerodrome(s) no longer on strike.
- In the event of tactical modifications to the strike configuration (e.g. shifting of some of the time periods), check if the predefined TFBs in the **LISTRIKE** TFB set may be used.
- Provide feedback in FREE.

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## 7. POST OPERATIONS PHASE

### 7.1. GENERAL

The post operational phase of operations may begin as an event takes place, but is generally considered to commence on D+1 and continues for as long as needed to ensure completion of analysis.

The post operations phase in NOS and the NMOC is managed by the post operations team which provides the following:

- Operational support to the NMOC.
- Lessons learning following foreseen and unforeseen events, including follow-up of agreed actions to ensure implementation.
- Monitoring of the execution of the ADP in Tactical Operations via a rolling monitoring of the INP. **This includes a daily briefing between the DOM and Post Operations Management to discuss the Tactical situation and which also addresses any capacity constraints identified at D-1 together with any mitigation actions applied during Tactical Operations.**
- Production of regular and ad-hoc reports to Agency staff and stakeholders on the performance of the European ATM Network, including ATFM delay, number of ATFM restrictions and mitigation measures taken to reduce the impact of hotspots.
- In depth analysis of hotspots and constraints in the Network to assist in resolution.
- Monitoring and analysis of day to day actions and procedures to ensure best practices are compatible with performance targets.
- Providing an overview of all incident reporting and analysis, complaints and ad-hoc enquiries to identify trends.
- **Assist with the analysis of requests submitted under the Post Operations Performance Adjustment Process to PFR/OAR.**
- Operational input to PFR / OAR for monitoring and reporting.

### 7.2. PROVISION OF INFORMATION

The Post Operations team will obtain statistical information from the NM Data Warehouse (DWH) but requires further feedback from relevant stakeholders and any other reliable information sources such as FREE to enable full analysis.

#### Procedure

The **NM operational staff** shall:

- Provide feedback on operational occurrences or issues via FREE.
- The feedback should include:
  - A timeline of the event.
  - Actions taken and the reasons why. This should include details of actions that were proposed but unable to be implemented. **Additional information relating to the situation at the time of the occurrence (e.g. coordination between ATS Unit and NMOC, professional opinion of any other relevant information) may also be included.**
  - It is not necessary to give delay figures or details of regulation application times or rates as these are available to post operations via the Network Manager Interactive Reporting (NMIR).
  - A signature (3 letter identifier) to allow follow-up action.

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The **NM OM** shall:

- Produce a daily report giving basic details of events in the Network that had an impact on performance.

**In the case of the missing or incomplete information as detailed in the procedure above, the Post Operations team shall address follow-up questions to the relevant NMOC staff based on the three letter identifier associated to the measures. Any subsequent information on the occurrence shall be added to FREE by Post Operations staff.**

**Feedback via email from FMP or AO staff is also acceptable using the post operations functional address. Personal email accounts should not normally be used. The Post Operations team may instigate contact to the FMP or AO concerned for supporting information to support any analysis of the situation.**

Unsolicited requests for feedback and analysis by FMPs or AOs are welcome and should be made using the post operations functional address.

## 7.3. LESSONS LEARNT

The post operations team is responsible for analysing operational events where a significant Network impact occurred.

During the post operational phase the post operations team will collate all information relevant for a particular event with the emphasis on the operational feedback from both internal and external stakeholders.

If necessary a lessons learnt debriefing will be held to aid understanding of particularly complex events with a wide range of concerned participants.

### Procedure

The **NM Post Operations team** shall:

- Produce and publish a report containing:
  - A timeline of relevant events.
  - Relevant statistics including but not limited to: delay, flight efficiency impact and flight cancellations.
  - Issues arising / lessons learnt.
  - Recommendations and specific actions to resolve outstanding issues.

The actions shall give a clear requirement, specific accountability to an individual or function and a date for expected completion.

Lessons learnt and associated actions are recorded by the Post Operations team and reviewed in an annual meeting with the Post Operations Manager and senior NM management to discuss trends in line with the lessons learnt procedure: \NOM\Network Operations Services\NOS Post Operations.

## 7.4. INCIDENT OVERVIEW

Whilst the Post Operations team is not responsible for incident investigation there is a responsibility for maintaining an oversight of all incidents and customer complaints. NOMNOS\DOM shall produce annual statistics and data detailing the number and nature of incidents investigated over the previous year.

The Post Operations team will use this data to identify trends and in collaboration with senior management implement corrective actions.

**7.5. SUPPORT TO PFR**

The Post Operations team will provide operational input to reports produced by Performance, Forecasting and Reporting (PFR) including but not limited to the monthly and annual operational reports.

**The Post Operations team shall also provide support in the analysis of requests submitted as part of the Post Operations Performance Adjustment Process as defined on the following webpage: <https://www.eurocontrol.int/publications/post-operations-performance-adjustment-process>.**



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## 8. COMMUNICATION / CDM PROCESSES

### 8.1. INCIDENT REPORTING

For details concerning the submission of incidents to the NM see the Network Operations Handbook, **Operational Problem Reporting**.

### 8.2. AD-HOC INTERNAL TACTICAL BRIEFINGS ON ATFCM EVENTS

The NMOC may hold internal tactical briefings addressing specific situations as considered necessary. These briefings are intended to brief internal staff about the current state of the Network or some of its details.

When such an ad-hoc briefing takes place it may be necessary to use teleconference facilities in case off site internal staff need to be invited.

#### Procedure

The **NM DOM** shall:

- Decide whether to have a tactical ad-hoc briefing or not.
- Make sure relevant participants are available and invite them.
- Request the NM NOO to set the teleconference facility if required.
- Initiate and chair the briefing.

The **NM NOO** shall:

- Assist the NM DOM if required.

### 8.3. TELECONFERENCES

The NM may hold teleconferences with relevant stakeholders where circumstances are deemed to require it, e.g. to distribute information regarding industrial actions. In such cases the NM will inform of the access means to the teleconference and, where possible, release an agenda in advance. This information is normally made available via the NOP Portal Headline News and AIM. A recording of the teleconference may also be made available on the NOP Portal afterwards.

Teleconferences may be requested by ANSPs or AOs to the OM (via email or phone) on any subject.

In case a teleconference is requested, the following procedure shall be followed on D-1.

#### Procedure

The **NM OM** shall:

- Ensure that the conference is prepared and the relevant partners invited.
- Initiate and chair the conference.

The **NM pre-tactical team** shall:

- Accept or invite on-line interaction by the external clients that would be of anticipated value for the expected Network situation.
- Check that the WebEx application for pre-tactical is functional and correctly set up in adequate time.
- Ensure that the briefing includes information, explanation and explanatory graphics where possible as per INP.

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- Ensure that all the necessary documents / graphics... are set up in WebEx prior to the conference delivery time.
- Deliver the briefing when prompted by the conference leader.
- Following the conference incorporate a link to the recording on the NOP Portal.

The **FMP staff** invited to the conference should:

- Attend and participate in the conference. Uninvited FMP staff wishing to participate may do so.

The **NM tactical team** shall:

- Attend the conference and may provide an update on the expected and current Network situation.

### 8.3.1. Attendance at FAA National System Review conference (NSR)

The Federal Aviation Administration (FAA) National Daily System Review web conference is hosted by the FAA's New York Regional Office. This conference involves weather briefings, ATFCM measures, briefing of yesterday's North Atlantic operations, expected North Atlantic issues for today and tomorrow, any important issues from the East Coast ACCs (Boston, New York, Washington, Cleveland, Philadelphia,) AOs and sometimes individual airports.

The UK FMP also attends to give daily feedback and briefing on North Atlantic tracks and issues affecting their area of responsibility.

The NM (**Tactical and/or Pre-tactical team**) will attend the conference **when a** situation requires coordination with the FAA. Attendance at the conference increases communication between the NM and the FAA, and increases awareness of the current and future status of operations on the East coast of the United States. It is a source of information on any issues affecting the NAT for the next few days, and also a forum to discuss matters with NAT operators where necessary.

From the FAA's point of view, it is a chance for them to ask any pertinent questions on operations in Europe, both for traffic about to depart eastbound and for westbound departures the following day.

For the AOs it is an opportunity to address any matters which are affecting them either on arrival early morning in Europe or on departure.

#### Procedure

From Monday to Friday at 15:00 UTC in winter time (14:00 UTC in summer time) and depending on current events,

the **NM (tactical and/or pre-tactical team)** may:

- Attend the FAA's National Daily System Review conference
- When prompted by the presenter, report only pertinent information relating to North Atlantic operations or affecting the North Atlantic flow (i.e. major weather systems, industrial action etc. and how it will affect the North Atlantic flow)
- Pass on relevant information within the European Network.

### 8.4. NAT CDM PROCESS

A Collaborative Decision Making (CDM) process has been designed to improve efficiency, reduce delays and provide greater flexibility and predictability for North Atlantic traffic operations.

The 'East / West NAT tracks and loading' should give the NM DOM and concerned FMPs a clear indication of where any potential problems may arise. This information should facilitate mitigation of possible overloads.

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A teleconference hosted by NAVCanada will be set every day at 23:00 UTC regarding the NAT Eastbound flow into Europe. Issues concerning the Westbound traffic will be raised by the NMOC and concerned FMPs as relevant.

The 'East / West NAT tracks and loading' gives an indication of preferred routes and the demand on each track based upon the filed flight plan data.

## Procedure

Upon reception of the predicted tracks,

the **Shanwick Operations Supervisor (OS)** shall:

- Send the predicted tracks by fax to the NMOC and European FMPs concerned.

Upon receipt of these tracks,

the **NM DOM** shall:

- Confirm reception of the predicted tracks sent by Shanwick OS.
- Revise the ATFCM daily plan (D-1) and any additional information handed over from the late shift NM DOM prior to attending the NAT teleconference. The aim is to share relevant information affecting the Network.

Those **FMPs concerned** and the **NM DOM** shall:

- Attend the NAT teleconference at 23:00 UTC, where the loading of the tracks will be communicated as well as any other significant issues affecting the Eastbound flow (departure delays, significant weather, possible cancellations...).

Following the teleconference,

the **NM DOM** shall:

- Update the NOP Headline News with any significant information concerning the Eastbound flow (such as departure delays).
- After having studied received data, coordinate with FMPs and / or AOs concerned to improve the efficiency of the Network to:
  - Reduce overloads in certain sectors.
  - Consider diversions and re-positioning of flights due to weather.
  - Any other appropriate actions.

## 8.5. INFORMATION AND MESSAGES PRODUCED BY THE NMOC

### 8.5.1. Updating the NOP Portal Headline News

During tactical operations the NOP Portal Headline News shall be used to:

- Inform Network users about significant events affecting the Network (e.g.: major capacity shortfall, strikes, volcanic ash, etc.).
- Inform Network users about actions taken as a result of the events affecting the Network and give appropriate advice to minimise the impact.
- Reduce unnecessary queries to the e-Helpdesk through information sharing.

Internal NM issues must not be communicated through the NOP Portal Headline News. The NM shall communicate only those events that give added value in a timely manner. Previously-issued news should be found under the tab 'Archive News' if correctly stored.

NM DOMs are responsible to ensure that all NM tactical team members are competent to input text in the Network Headline News.

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## Procedure

During the day of operations,

**all NM tactical team** shall:

- Provide updates on the situation of the Network to the NM DOM.

The **NM DOM** shall:

- Request updates on the situation from all other NM tactical team members.
- Identify which events require publishing according to the use defined above.
- Ensure an appropriate information text for those events is prepared.
- Ensure their validity period.
- Instruct an NM **NOO** (or the NM NOC a NM NOO is not available) to input the prepared text in the Headline News.
- Approve publishing.

The **NM NOO** (or the **NM tactical team**) shall:

- Introduce the text in the NOP Portal Headline News.
- Publish the news flash when approved.

For some sensitive issues the NM OM shall be involved during the preparation of the text.

### 8.5.2. Maintaining pre-tactical information on the NOP Portal

The NM pre-tactical team is responsible for some of the information presented in the NOP Portal to externals. This information usually relates to pre-tactical planning and scenario data.

All data in the NOP Portal needs to be correlated between all sources to avoid conflicting or outdated information from multiple sources on the same subject.

## Procedure

The **NM pre-tactical team** shall:

- Ensure that the following data is correctly loaded on to the NOP Portal and upload it where needed:
  - D-1 plan.
  - Latest agreed axis plans and statistics.
  - Special events (such as the agreed and correct scenario list with correct descriptions and graphics).
- Ensure that the data on the NOP Portal is updated and no outdated or misleading information remains in the Portal.

### 8.5.3. ATFCM Information Message (AIM)

An AIM may be used to send information to NM customers about NMOC daily operations such as possible disruptions.

AIMs may be accessed via CHMI interfaces and the NOP Portal.

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### 8.5.3.1. Sending AIMs

The reason for sending an AIM is to inform the Network about possible disruptions such as airfields with weather issues, where to expect delays, available alternate routes, but also to bring attention to information of a more general nature such as RAD amendments, ETFMS / IFPS maintenance outages or important NOTAMs.

Several AIM templates are available in the AIM application under the 'Templates' tab.

#### Procedure during pre-tactical operations

Where an AIM is to be sent,

the **NM pre-tactical team** shall:

- Prepare the text or ask support to prepare the text if needed.
- Specify a validity period (avoid UFN as much as possible).
- Release the AIM.

#### Procedure during tactical operations

Where **FMP staff** require an AIM to be sent, they shall:

- Contact the NM tactical team and provide the associated information.

Upon receipt of such a request,

the **NM tactical team** shall:

- Prepare the text or ask support to prepare the text if needed.
- Specify a validity period (avoid UFN as much as possible).
- Inform the NM DOM.
- Release the AIM.

Where the **NM OM** or **NM DOM** decides to send an AIM they shall:

- Prepare the text or ask for support to prepare the text if needed.
- Check and correct the draft accordingly.
- Specify a validity period (avoid UFN as much as possible).
- Release the AIM.

Where the proposal comes from **other NM staff**, those staff shall:

- Prepare the text or ask support to prepare the text if needed.
- Specify validity period (avoid UFN as much as possible).
- Send it to the NM OM and the NM DOM to be reviewed and released.

### 8.5.4. ATFCM Notification Message (ANM)

The ATFCM Notification Message (ANM) is a message issued by the NM to inform all concerned of the measures in the ATFCM Daily Plan (ADP). The ADP is finalised the day before the day of operations and released around 17:00 UTC in winter time (16:00 UTC in summer time). An ANM will be sent on the day of operations, either by 'Change', 'Cancellation' or 'New' messages

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when a regulation is modified, cancelled or published. The ANM is available on the NM NOP Portal.

## 8.6. NOTAM MONITORING ON ROUTE AVAILABILITY

NOTAM monitoring will take place between 07.00 local and 22.00 local and this for 7 days on 7 (shift hours AD).

NOTAMs issued outside above mentioned time period will be handled the day after in the morning by the Early team. NOTAM daily output (D+1). If required (depending on effective / end date), those NOTAMs will be implemented in the CACD.

**Note:** This procedure concerns actions for the NM AD staff. It is published here to ensure awareness and transparency on the process with the NM operational stakeholders.

### Procedure

Note that the same shall be applied to AIP supplements.

All NOTAMs which could impact NOS operations appear in the OPSD Console (via MPMT) based on the official ICAO 'Q' codes (average of 550 per day). The Q codes can be different for each ANSP/State.

Only NOTAMs concerning route updates will be monitored by AD.

The decision to implement route availability updates depends on the following factors:

1. The time at which the NOS receives the notification of a route availability change.
  2. The stability of the NOTAM. Some ANSPs issue several NOTAMS (daily) with updates before effectiveness of activity.
  3. On request of ANSP, No NOTAM implementation in CACD. Report to OM and decision taken shall be communicated to all teams in the NOS Operations room.
- The ANSP shall handle the NOTAM tactically.
  - The ANSP may request the implementation of an H / S restriction.
  - The ANSP may request the implementation of a zero rate measure.

Route availability updates shall be implemented (if the NOTAM is stable) 5 days before effective date of NOTAM (AIP Sup), as flight plans may be received up to 5 days prior to EOBT.

Route availability updates received less than 5 days shall be always implemented (if NOTAM is stable).

Route availability updates received less than 1 hour before effectiveness of the NOTAM, but the period of NOTAM activity is more than 2 hours, route availability updates shall be implemented.

All NOTAMs / AIP supplements shall be kept in a dedicated binder at the NM AD Supervisor (SNOS / NOSU) desk.

4. For a number of states participating to the AUP/UUP process, an agreement exists that route closures are handled only by AUP/UUP (as published in an FTI on this subject). For these states, NOTAMs about route closures are not implemented in CACD by the Airspace data operations team but apply automatically upon release of the concerned EAUP/EUUP.
5. Route availability modification without NOTAM publication, The NM OM (or replacement) will take the decision on changing the route availability during the shift of the NMOC Airspace Data Team ( 06:00 (05:00Summer) UTC – 21:00 (20:00Summer) UTC).

The requested ANSP/State will be asked to publish ASAP the NOTAM

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The change will be published in the NOP headlines news
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**8.7. SUGGESTIONS FOR EVOLUTION OF SYSTEMS AND PROCEDURES**

FMPs are welcome to propose new user requirements in respect of any of the NM systems and procedures. Proposals will be considered in coordination with the appropriate stakeholder groups and decisions will be implemented by the NM.



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## 9. ATFCM CONTINGENCY OPERATIONS

Actions to be taken in the event of a major failure of a component of the ATS or ATFCM service which would result in significant reductions in capacity and/or major disruption to traffic flows are covered, respectively, by ACC/FMP and NM contingency plans.

### 9.1. ACC / FMP CONTINGENCY

FMPs shall have pre-defined contingency plans detailing the configurations, capacities and strategies in each critical event for their area of responsibility, in order to enable the NM to assist the FMP in contingency operation.

**Note:** A standard template for ACC contingency plans is available in Annex I.

The FMP shall coordinate their contingency plans with the NM. The FMP is responsible for ensuring such plans are kept updated and notified to the NM.

In the event of a failure requiring contingency action, the FMP Controller will initiate coordination with the NM to implement pre-planned contingency measures.

During the application of contingency measures, the FMP controller shall keep the NM up to date with all data and information required so that ATFCM measures can be modified to match the changing situation and in order to keep any other concerned parties informed via AIMs.

For guidelines for contingency planning of air navigation services, refer to [EUROCONTROL > Single European Sky](#) > Guidelines for Contingency Planning of Air Navigation Services:

<http://www.eurocontrol.int/articles/guidelines-contingency-planning-air-navigation-services>

### 9.2. ATFCM PROCEDURAL CONTINGENCY

If the ETFMS fails, or in the event of unavailability of the NM site at Brussels (NMOC site contingency), the ATFCM procedural contingency will be initiated. This is a phased operation, whereby nominated airports will apply predetermined departure intervals. In this case AOs concerned may expect high delays. Flights departing from non-nominated airfields are not affected by the ATFCM procedural contingency plan.

In order to permit an effective and orderly resumption of slot allocation by the ETFMS following recovery, flight plan and flight plan update messages will continue to be sent to the IFPS throughout the whole period of operation of the contingency plan.

More details of the actions that may be expected in the event of an ATFCM procedural contingency event are published in the seasonal ATFCM Procedural Contingency Plan that is published in the contingency portlet of the NOP Portal. Alternatively the plan can also be accessed via the Network Operations Library (<http://www.eurocontrol.int/network-operations/library>). It is important that FMPs and affected towers, download and save or print the plan when it is issued (twice a year) both to familiarise themselves with any changes and to ensure that the plan is available even if the NOP Portal is u/s.

### 9.3. NOP PORTAL CONTINGENCY

In the event of NMOC contingency and unavailability of the NM site at Brussels, the FP2 will inform users of the situation, including the URL to access the contingency NOP Portal ([www.contingency.nm.eurocontrol.int](http://www.contingency.nm.eurocontrol.int)), via:

- Headline News emails (only available to users that are subscribed at the NOP to the email service for the Headline news), and
- AIM (available to users that receive AIM via AFTN or SITA Type-B network).

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## 10. DEFINITIONS

Terms and definitions included in this document have the following meanings:

### 10.1. TERMS AND MEANINGS

**Airspace Data (AD).** The purpose of the Airspace Data section is to manage and provide all necessary airspace information to feed the core NMOC systems (IFPS, ETFMS) and the systems of our operational stakeholders.

**Air Traffic Flow Management (ATFM).** A service established with the objective of contributing to a safe, orderly and expeditious flow of air traffic by ensuring that air traffic control capacity is utilised to the maximum extent possible, and that the traffic volume is compatible with the capacities declared by the appropriate air traffic services authority.

**Air Traffic Flow and Capacity Management (ATFCM).** ATFM extended to include the optimisation of traffic patterns and capacity management. Through managing the balance of capacity and demand the aim of ATFCM is to enable flight punctuality and efficiency, according to the available resources with the emphasis on optimising the network capacity through the collaborative decision making process.

**ATFCM Daily Plan (ADP).** The set of tactical air traffic flow management measures prepared during the Pre-Tactical phase.

**ATFCM Slot Allocation Exemption.** The exemption of a flight from air traffic flow management slot allocation.

**ATFCM Incident.** A significant occurrence affecting an air traffic services unit, an aircraft operator or a central management unit resulting from the application of air traffic flow management measures or procedures.

**ATFCM Measures.** Actions taken to accomplish air traffic flow and capacity management.

**Aircraft Operator.** A person, organisation or enterprise engaged in, or offering to engage in, an aircraft operation.

**Capacity [for ATFCM purposes].** The operationally acceptable volume of air traffic.

**Cluster.** A cluster is an optional partition of an ATC Unit Airspace (AUA). It groups a number (at least one, but usually more) of Elementary Sectors (ES) from the concerned ATC Unit Airspace (AUA).

Typically, an ATC Unit Airspace (AUA) can be split into 2 or more clusters, e.g. one for the East and one for the West. This corresponds to the way the concerned ATC Unit is operated in terms of sector configurations, in fact as 2 different operational units in this example.

A Cluster must have at least one sector configuration and at least one activation of sector configuration.

When an AUA is partitioned into clusters, it cannot have sector configurations. Instead, the sector configurations are defined and activated in each of its clusters.

**Collaborative Decision Making (CDM).** Process which allows decisions about events to be taken by those best positioned to make them on the basis of most comprehensive, up-to-date and accurate information. This in turn will enable decisions about a particular flight to be made according to the latest information available at the time, thereby enabling the flight to be dynamically optimised to reflect near or real-time events.

**Critical Event.** An unusual situation or crisis involving a major loss of EATMN capacity, or a major imbalance between EATMN capacity and demand, or a major failure in the information flow in one or several parts of EATMN.

**Flow Management Position (FMP).** A working position established in appropriate air traffic control units to ensure the necessary interface between local ATFCM partners (i.e. ATCs, AOs and Airports) and a central management unit on matters concerning the provision of the air traffic flow and capacity management service.

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Depending on the internal organisation within a State, in addition to FMP staff some ATFCM activities may be carried out by other national units such as a Headquarters (HQ) Section. Where tasks are carried out by such units, coordination procedures must be established between the units concerned and the FMP(s) so that full account is taken of the situation in the FMP's area of responsibility before decisions are made or agreements reached.

**FREE.** The tool used to input internal feedback for the NMOC, which is a Remedy application. FREE provides a means of operational communication between tactical and pre-tactical teams.

**Integrated Initial Flight Plan Processing System (IFPS).** A centralised flight plan processing and distribution service that has been established within the NM.

**Monitoring Value (MV).** The monitoring value (MV) is the agreed number of flights accepted to enter into a reference location per rolling hour beyond which coordinated actions may be considered between the concerned parties in order to better balance the traffic load.

**Network Manager (NM).** Function provided by the EUROCONTROL Network Manager Directorate (NMD) as described in the NM Implementing Rule of the European Commission.

**Over-Delivery.** An occurrence when the declared rate is exceeded by the actual number of aircraft that enter a regulated sector during a particular period.

**Overload.** An occurrence when an air traffic controller reports that he/she has had to handle more traffic than they consider it was safe to do so.

**Post Operations.** An ATFCM phase that takes place after the day of operation for analysis of planning procedures and coordination, the results of which are fed back into the planning process for further consideration.

**Pre-Tactical.** An ATFCM phase which takes place during six days prior to the day of operation and consists of planning and coordination activities.

**Rate.** A value, required as input to slot allocation.

**Rerouting [for ATFCM purposes].** An ATFCM measure which requires an aircraft operator to file an alternate route/flight level in order to resolve ATC capacity problems and minimise delays.

**Route Availability Document (RAD).** A sole source planning document that combines AIP route flow restrictions with ATFCM routing requirements designed to make the most effective use of ATC capacity.

**Slot [for ATFCM purposes].** CTOT issued by the NM.

**Slot Adherence.** Compliance with a CTOT by the aircraft operator and ATC, taking into account the slot tolerance.

**Slot Allocation.** An ATFCM measure implemented by means of a departure slot in order to balance traffic demand against available ATC capacity.

**Slot Tolerance.** A window of time around a CTOT available to ATC for which the aircraft must not depart outside.

**Strategic.** An ATFCM phase which takes place seven days or more prior to the day of operation and includes research, planning and coordination activities.

**Suspension [for ATFCM purposes].** An ATFCM measure resulting in the suspension of a flight.

**Tactical.** An ATFCM phase, which takes place on the day of operation.

**Volume of Air Traffic [for ATFCM purposes].** The number of aircraft within a defined airspace or aircraft movements at an aerodrome, within a specified period of time.

**11. DICTIONARY OF ABBREVIATIONS**

A full listing of the EUROCONTROL acronyms and abbreviations is available at:

<http://www.eurocontrol.int/airial/definitionListInit.do?skipLogon=true&glossaryUid=AIRIAL>

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# ATFCM OPERATIONS MANUAL

## 12. CONTACTS

The operational language for all communications between the NM and FMPs is English. All telephone calls to the NM telephone numbers that begin with +32 2 745... for calls from outside Belgium (or 02 745... for those from Belgium) are recorded for investigation purposes.

### Strategic operations

Coordination required for strategic planning will be performed at national and NM management level using bilateral, multilateral meetings, mail and / or telephones.

### Pre-Tactical operations

To reduce telephone communications, environment data, configurations, monitoring value figures or other essential data required by the NM during the pre-tactical period shall, wherever practical, be inserted via CIFLO (in accordance with agreed procedures) or passed by email.

### Tactical operations

FMPs are allocated direct dial numbers to contact the NM. These positions are managing their airspace, and are the first point of contact for Tactical operations.

If requested by the NMOC staff, any decisions or requests for online CACD changes, new agreed regulations, regulation changes, flight exclusions etc., shall be supported in written, normally via fax or email (email address will be communicated at the time). In case of a long list of requests, the recommendation is to advise by phone the relevant NMOC position and then support the request with fax or email.

**Flow Management Positions, Towers and Aircraft Operators** that need support from the NMOC should use the FM Helpdesk in order to request help for flights with specific problems. The E-Helpdesk has a dropdown menu with a wide selection where **FMPs, TWRs and AOs** can specify their particular issue / problem.

### Contact addresses / telephone numbers of FMPs

Contact addresses and telephone numbers of individual FMPs are available in the appropriate NM Agreement.

### Contact addresses / telephone numbers at NM operations

Telephone numbers of the NM OM, NM DOM and NM pre-tactical should be used for operational coordination between FMPs and the NM.

BRUSSELS	NM OPERATIONS MANAGER	NM DEPUTY OPERATIONS MANAGER	NM AOLO	HELPPDESK	NM PRE-TACTICAL	NM MILO
OPS TELEPHONE	(32) 2 745.19.31	(32) 2 745.19.00	(32) 2 745.19.92	(32) 2 745.19.01	(32) 2 745.19.20	(32) 2 745.19.34
OPS FAX	(32) 2 729.90.27	(32) 2 729.90.27			(32) 2 729.90.26	(32) 2 729.30.08
OPS E-MAIL	<a href="mailto:NM.OM@eurocontrol.int">NM.OM@eurocontrol.int</a>	<a href="mailto:NM.DOM@eurocontrol.int">NM.DOM@eurocontrol.int</a>	<a href="mailto:NM.AOLO@eurocontrol.int">NM.AOLO@eurocontrol.int</a>		<a href="mailto:NM.PRETACT@eurocontrol.int">NM.PRETACT@eurocontrol.int</a>	<a href="mailto:NM.MILO@eurocontrol.int">NM.MILO@eurocontrol.int</a>
OPS AFTN	EUCHCEUW	EUCHCEUW	EUCHCEUW		EUCHCEUW	
OPS SITA	BRUEC7X	BRUEC7X	BRUEC7X		BRUEC7X	
WORKING HOURS	06:00 – 21:00 UTC	H24	06:00 – 21:00 UTC	H24	08:00 – 21:25 UTC	7:00 – 17:00 UTC in winter time (6:00 – 16:00 UTC in summer time)
NOP Portal	<a href="https://www.public.nm.eurocontrol.int/PUBPORTAL/gateway/spec/index.html">https://www.public.nm.eurocontrol.int/PUBPORTAL/gateway/spec/index.html</a>					

CONTINGENCY BRÉTIGNY-sur-ORGE (FRANCE)	
OPS TELEPHONE	VCS: (33) 1 6988 1742 PSTN: (33) 1 6988 3841

### Other ATFCM contact addresses at the NM



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BRUSSELS	NM STRATEGIC SECTION	NM POST OPERATIONS MANAGEMENT	NM ATFCM INCIDENT REPORTING	NM CSO
E-MAIL	<a href="mailto:nm.strategic.operational.planning@eurocontrol.int">nm.strategic.operational.planning@eurocontrol.int</a>	<a href="mailto:nm.post.operations.management@eurocontrol.int">nm.post.operations.management@eurocontrol.int</a>	<a href="mailto:nm.incident@eurocontrol.int">nm.incident@eurocontrol.int</a>	<a href="mailto:nm.cso.help-desk@eurocontrol.int">nm.cso.help-desk@eurocontrol.int</a>

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# ATFCM OPERATIONS MANUAL

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## 13. ANNEX A: FLIGHT DATA

### 13.1. FLIGHT DATA INFORMATION

For each flight there is a merging of long-term data process provided by the RPL system (where existing) and up-to-date information provided by the IFPS.

The ETFMS is loaded every night for the day + 1 with the RPLs. These RPLs are converted into FPLs in ETFMS 20 hours before the EOBT.

FPLs not originating from RPLs are received from IFPS after processing, at the earliest 48 hours before the EOBT.

A 4D profile is calculated, taking into account the above 2 sets of information.

The IFPS will perform message processing for IFR / GAT flights.

Other flight plan messages (DLA, CHG, CNL and DEP) are sent to ETFMS after processing by the IFPS.

**Note:** The IFPS invalidates DLA and CHG messages that indicate a negative EOBT (an EOBT that is earlier than the current EOBT) or changes greater than 20 hours in the future.

**Note:** Where the IFPS shall invalidate DLA / CHG messages that indicate a new EOBT that becomes in the past compared to the current system time (as a result of manual processing delays), those messages will be invalidated with the error message:

*'EFPM223: EOBT IN THE PAST COMPARED TO IFPS SYSTEM TIME'*

ATC may also send messages to ETFMS to update the flights according to ATC events.

Some AOs are sending Aircraft (operator) Position Report (APR) messages to ETFMS. APR messages will be sent for long haul flights departing outside the NM area and which are planned to enter the NM area (i.e. all departures excluding the one's from E\*, L\* and GC\*).

The APR message is expected to be sent 2 to 3 hours before the flight enters the NM area and contains estimate of the arrival time (ETA) of the flight or actual times over geographical positions at a distance from the NM area.

This data will then be used by the ETFMS to update the current flight model (CTFM) of the flight and also all other times (ETOs) in the flight profile are updated accordingly.

Upon the flight's entry into the NM area, the flight's profile is then updated by FSA and CPR messages where applicable.

Where a flight plan is found to be missing ATC shall send an ATC FPL Proposal (AFP) message to the IFPS providing the information for this flight.

The result for the IFPS is called APL (ATC FPL) and is distributed to all ATC Units. The same may apply when a route is changed by ATC once the flight is airborne. Then it is called an ATC Change (ACH).

Flight Notification Message (FNM) from Gander and Message From Shanwick (MFS) are messages that are received for trans-Atlantic flights which provide an estimate for the oceanic exit point. These estimates are also used by the ETFMS to update flight profiles.

### 13.2. ATFCM FLIGHT PROGRESS MESSAGES ORIGINATED BY NM SYSTEMS

#### 13.2.1. ETFMS Flight Data message (EFD)

The purpose of the ETFMS Flight Data message (EFD) is to inform users with the latest updates and about the latest state of a flight in ETFMS.

The EFD is basically an extract of flight data that is available in the ETFMS of which the flight profile is the most important part. The EFD will be sent by ETFMS to ANSPs of FDPAs that request such information.

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ETFMS will distribute the EFD in broadcast mode. The receiver can filter out the required update types and of each EFD, the required data can be extracted.

The first event at which an EFD will be sent is at the moment of the flight plan creation (e.g. reception of a FPL or APL message from IFPS).

EFD distribution will end when the status of the flight changes to terminated, cancelled or suspended in ETFMS. ETFMS will send an EFD for the status change followed by a limited number of periodically transmitted EFDs.

In between the transmission of the first EFD and the last one, EFDs will be distributed when the EFD data changes (e.g. FPL, CHG, DLA, CPR, FSA, DPI, slot changes, processing of a diversion by ETFMS, etc.).

### 13.2.2. Flight Update Message (FUM)

This message is used to supply airports of destination (ADES) with an Estimated Landing Date and Time (ELDT). In addition to the ELDT, the FUM will contain the last point in the flight plan route (PTID) with the corresponding Estimated Time Over (ETO).

The first FUM will be sent at earliest landing time as known by ETFMS - 3 hours or at ATC Activation. The last FUM is sent when ETFMS considers the flight as terminated, which is approximately 20 minutes after landing time.

The FUM will be sent at significant updates of the flight in the NMOC/ETFMS system in the following circumstances:

- at ATC activation of a flight;
- at LandingTime – 3 hours;
- at modification of the ELDT of more than 5 minutes;
- at important flight status changes (e.g. FLS);
- when the flight is reported as diverted.

The FUM will be sent by ETFMS to an address that is derived from the airports of destination (ADES) and only to those users/systems that wish to receive such information.

In case the FUM is sent for a diverted flight, i.e. when the 'adesold' field is present, the FUM is sent to both the new aerodrome of destination (in the 'ades' field) and to the original aerodrome of destination (in the 'adesold' field).

The FUM will have to be sent via the AFTN.

### 13.3. CORRELATED POSITION REPORTS (CPRS)

The ETFMS is receiving Correlated Position Report (CPRs), giving radar position information, at a regular interval of 30 seconds or 1 minute depending on the ANU (Air Navigation Unit).

Individual CPRs will arrive in the ETFMS inside a CPM (message). The content of an individual CPR for a particular flight may be checked in the operational log.

CSO is monitoring the status of the entry nodes and will call the NM OM if any node is not sending CPMs to ETFMS for periods greater than 15 minutes.

CPRs received within a radius of 5 NM and below 2 FL around ADEP or ADES will be ignored (except for activation monitoring).

#### 13.3.1. Deviation monitoring

A flight may deviate from its last computed profile triggering a profile recalculation in one or more of the following aspects:

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### 13.3.1.1. Time

Any deviation of the profile by more than 1 minute .

**Note:** If there is a level and/or a lateral deviation together with a time deviation, then the minimum time parameter does not apply (e.g. any time deviation even less than 1 minute is recalculated).

### 13.3.1.2. Level in en-route phases

Any deviation of the profile by more than 400 feet.

The point and airspace profiles are updated accordingly.

### 13.3.1.3. Level in climb / descent phases

Any deviation of the profile by more than 1000 feet.

The point and airspace profiles are updated accordingly.

### 13.3.1.4. Lateral

Any deviation of the profile by more than 10 nautical miles (NM).

**Note:** A further route included in an FSA or CPR message will always result in a profile recalculation even if the deviation does not exceed 10 NM.

If an incoming CPR / FSA message results in a recalculation of the profile of a flight , then the resulting 'NEW PREDICTION' may be seen in the operational log as follows:

#### NEW PREDICTION

Source: CPR / FSA

Deviation info: Time-xxx sec, Level-xxx, Lateral-xxx nm

Update info: Time shifted Y/N, Level updated Y / N, Lateral updated Y / N

Regulation\_Id; TRUE / FALSE; TTO\_Fix\_Id; TTO - Date and Time; FL; ATT (Actual Time at Target) – Date and Time; Compliance (BEFORE / INSIDE / AFTER)

**Note:** Under this line (one line per regulation the flight is subject to), each new profile deviation triggered by airborne data will give an indication if the flight is still crossing the regulation and, if yes, then compare if the ATT is compliant with the TTO.

CPR / FSA containing information which is outside the acceptable parameters will be discarded. This functionality is mainly useful to evaluate the quality of the profile by comparing various flight models to the received airborne message (plots, FSA...).

The ETFMS uses the measured aircraft speed (from CPRs) to extrapolate the speed to the subsequent segments of the route and update the flight profile accordingly.

## 13.4. TACTICAL FLIGHT MODELS

The flight data into the ETFMS are called Tactical Flight Models (TFMs).

When a flight plan is received, a Filed TFM (FTFM) is created. All known information on the flight is part of it. The FTFM will remain available until the flight is archived. The FTFM shows the request from the AO.

Any modification on the flight made by the AO (DLA, CHG...) or some DPI messages will update the FTFM.

At such a level, the status of the flight may be:

- PLANNED if it is an RPL.
- FILED if it is a FPL.

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### Example

An RPL or FPL is received from the IFPS. An FTFM is created.

A DLA, CHG is received. It modifies the FTFM and it is also indicated with \* next to off-blocks time in FTFM.

**Note:** If a new FPL is received in ETFMS when the previous one has not been cancelled, it may be merged with the initial one provided ARCID and ADEP are the same and EOBT not much different (less than the flight duration).

As the merging of flights is different in the IFPS and in the ETFMS, the flight may exist in the IFPS and not in the ETFMS. When this happens, the only solution is to ask the AO to cancel and refile a FPL with a different call sign in order for the ETFMS to allocate a slot.

If the flight is subject to a regulation or to a rerouting, the ETFMS creates a Regulated TFM. This RTFM indicates the effect of the measure on the flight (CTOT, route...). The status of the flight may be:

- SLOT ALLOCATED (Expecting FSA) & CPR
- REROUTED
- REROUTED SLOT ALLOCATED
- FILE SLOT ISSUED (Expecting FSA) & CPR

If the ETFMS receives a CPR / FSA, DEP or some DPI messages for a flight, a Current TFM (CTFM) is created. The CTFM indicates the real situation of the flight. The flight is in a status ATC activated. When the system time reaches the CTOT for a flight, the CTFM is also created. The flight is in a status TACT activated (Expecting an activation message).

Several FSAs may be received for the same flight and will update the CTFM profile forwards if there is a deviation. The first FSA received may also update the TOT whilst any subsequent FSA will only update backwards to the last frozen position (last received FSA / CPR).

A Nominal Tactical Flight Model (NTFM) has been introduced to normalise PREDICT demand data. It captures the initial flight plan received by the ETFMS before A-CDM data, CHG or DLA messages are applied. The presence of an NTFM is shown in the ETFMS flight data models and in the flight list's Flight Status column where a T and N indicate time and route differences.

### 13.5. FLIGHT ACTIVATION MONITORING (FAM)

As part of the ETFMS implementation, 'Flight Activation Monitoring' (FAM) has been implemented so as to detect flights flying later than planned (or not flying). This is done by looking at the flights for which no radar plots are received when the flight is supposed to be airborne (TACT activated) in an airspace covered by an entry node configured for activation monitoring.

When no radar plots have been received for flights subject to Flight Activation Monitoring, these flights will be shifted in their CTFM in 5 minute steps for a period of **20** or 120 minutes. The shifting period will be followed by an FLS if no activation is received.

### Example

A flight is supposed to take-off at 09:00 from a FAM enabled area. At clock time 09:00 the ETFMS will activate the flight. At 09:05 if no CPR / FSA / DEP is received the ETFMS will SHIFT the ATOT and all ATO times forward by 5 minutes. If no CPR / FSA / DEP info received the ETFMS will continue to shift the flight in 5-minute intervals to 09:**15**. At 09:**20** the flight will be suspended and an FLS sent. The comment 'NOT REPORTED AS AIRBORNE' will be stated. The Flight Data screen will show: Suspension Status: 'Suspended by activation monitoring waiting for ATC activation'. This will require a confirmation (DLA) by the AO or ATC stating the new EOBT before a DES or SAM will be sent. If the flight will not operate, the AO has to send a CNL message.

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FAM is applied on all flights, whether regulated or not, departing from, landing at or crossing areas where CPRs are received by the NM and FAM is activated.

A flight departing from, landing in or crossing a CPR / FAM enabled area with less than 3 hour flying time to the FAM enabled area and not reported as airborne will be shifted by 5 minute steps for a period of 20 minutes.

A flight departing from a non-FAM enabled area but with a destination in or crossing a CPR / FAM enabled area with more than 3 hours flying time to the FAM enabled area and not reported as airborne will be shifted by 5 minute steps for a period of 120 minutes.

A flight departing from a non-CPR / FAM enabled area will have FAM performed from a position along the route where 'safe coverage' starts, **i.e. FAM will be performed from the planned entry time to the CPR enabled area.**

The airspaces that are used by the system to determine 'safe coverage' are called ATC unit Airspace (AUAs). For a flight to be monitored it will have to remain in the first AUA it encounters on its profile. This is called the Flight Minimum Traversal Time (currently set to 0 seconds). All the AUAs a flight is planned to fly through can be seen in the Airspace Profile of the flight.

A flight shifted by Flight Activation Monitoring into an XCD regulation will not be affected by the XCD (i.e. suspended due strike) but will receive the suspension CTOT+20, if still not airborne. A flight shifted by Flight Activation Monitoring into a normal regulation will take up a slot in the following manner:

- Fill empty slot
- Push down Pre-allocated flight
- Take slot -60 / +20 min (bracketed slot)
- Create overload slot

**Note:** FAM is automatically disabled for an area in case ETFMS does not receive any CPRs from the area (i.e. Entry Node) anymore.

### 13.5.1. FAM status

The current (or past) effect of the FAM on the flights is maintained in order to display them on the flight data display, the flight list and (in particular) in the slot list. The FAM status of the flight may have one of the following values:

Code	Status	Meaning
.	Not_Under_FAM	not under FAM yet or never under FAM.
F	Subject_To_FAM	currently subject to FAM, if no data received, flight will be shifted soon.
f	Was_Subject_To_FAM	was subject to FAM but airborne data received before first shift
S	Shifted_By_FAM	currently shifted by FAM
s	Was_Shifted_By_FAM	was shifted by FAM, FPL data received when shifted
a	Airborne_When_Shifted_By_FAM	was shifted by FAM, airborne data received when shifted
U	Suspended_By_FAM	currently suspended by FAM
u	Was_Suspended_By_FAM	was suspended by FAM, FPL data received when suspended
A	Airborne_When_Suspended_By_FAM	was suspended by FAM, airborne data received when suspended

Before a flight is TACT activated, the flight FAM status will be set to Not\_Under\_FAM. When (and if) a flight becomes TACT activated, the status will be changed to Subject\_To\_FAM, if the flight is covered by entry nodes for which activation monitoring is on.

When the flight is shifted, the status will be changed to Shifted\_By\_FAM. After the shifting period, FAM will suspend the flight and its status will be changed to Suspended\_By\_FAM.

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In case flight plan data (e.g. a CHG, a DLA) is received while the flight is shifted or suspended by FAM, the flight FAM status will be changed to Was\_Shifted\_By\_FAM or Was\_Suspended\_By\_FAM.

An FCM for a flight suspended by FAM will not be accepted. This will trigger an ETFMS error message:

'CONFIRMATION MSG IGNORED FOR FLIGHT SUSPENDED BY FAM. PLEASE USE DLA OR CHG INSTEAD'

An FCM for a flight that is ATC activated will not be accepted by SITA or AFTN (it is not possible to do it via the CHMI), and will trigger the following ETFMS error message:

'FLIGHT ALREADY ACTIVATED'

An FCM for a flight that is TACT activated will not be accepted and will trigger the following ETFMS error message:

'CONFIRMATION MSG IGNORED FOR FLIGHT WITH TAKE OFF TIME IN THE PAST. PLEASE USE DLA OR CHG INSTEAD'

In case airborne data (e.g. FSA, DEP, ARR) is received while the flight is shifted or suspended by FAM, the flight FAM status will be changed to Airborne\_When\_Shifted\_By\_FAM or Airborne\_When\_Suspended\_By\_FAM.

A flight can be subject to FAM multiple times e.g., the flight could first be suspended by FAM and then delayed by a DLA. Based on this DLA, it could then be shifted again by FAM.

When the flight is not (actively) under FAM anymore (i.e. it is not TACT activated anymore), the FAM status shown for this flight will be based on the worse FAM status encountered.

In case the worse FAM status of the flight is 'worse' than the current FAM status of the flight, the flight data query display will show both the current FAM status and the worse FAM status encountered.

The order in the table above follows the 'worse' characteristic of the status. In other words, Airborne\_When\_Suspended\_By\_FAM is 'worse' than Was\_Suspended\_By\_FAM.

### 13.5.2. FAM control

An adjustable parameter enabling / disabling FAM is available.

If a flight max flight level is below the parameter (currently F090), no FAM will be done for this flight even if it is covered by an entry node.

If a flight ADEP is member of one or more 'disabling FAM' set of aerodromes, then no FAM will be done for the flight even if it is covered by an entry node. The 'Disabling FAM' set of aerodromes are all the set of aerodromes with name starting with DISFAM.

In the flight data query display, a new line (heading is FAM Disabled) has been added to show if there is a reason to disable the FAM for this flight. If there is no reason, the flight data display will show Not Disabled. If FAM is disabled for this flight due to a disabling FAM set of aerodromes, the display will show Sad DISFAM. If the FAM is disabled because of flight flying at a low altitude, the display will show Low Altitude.

The line FAM Disabled in the flight data query display represents the 'static' disabling status. The flight will be really subject to FAM only if 'Not Disabled' and the flight is covered by an 'active' entry node at the time the system will shift it or suspend it.

When the flight is TACT activated (i.e. possibly currently under FAM / shifted), the information shown in the data display is the 'real current complete' FAM status. Otherwise, the information represents the 'static' FAM information for the flight (i.e. assuming that the entry nodes are correctly sending radar plots).



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**14. ANNEX B: AIRPORT CDM (A-CDM)**

It is essential for airports to share dynamic and highly accurate data with the European ATM Network.

The Departure Planning Information (DPI) messages supply the Network Manager Operations Centre (NMOC) with airport situational information direct from the airport Collaborative Decision Making (CDM) systems in order to update the real-time flight situation prior to take-off.

In a symmetric process, the Flight Update Messages (FUMs) sent by the NMOC provide airports with an accurate estimated landing time of arriving flights, thus improving the planning of outbound flights. FUM messages may be provided to any airport (of destination) on request.

Currently, the NMOC uses 3 different classifications for the purpose of indicating the level of integration of the airports into the ATM Network:

- CDM Airports (A-CDM);
- Advanced ATC TWR Airports;
- Standard Airports.

CDM airports are airports that have implemented the Collaborative Decision Making process as is specified in the Airport CDM Implementation Manual and provide the full set of DPI messages to NMOC.

Advanced ATC TWR airports are airports that have not implemented or not fully implemented the CDM process but still would like to integrate into the ATM Network using a limited set of DPI messages.

Standard airports (non-CDM airports) are not integrated into the Network via the transmission of DPI messages to the NMOC.

**14.1. BENEFITS OF A-CDM**

Airport CDM brings substantial benefits to all partners by improving the quality of information on which decisions are made. This will lead to enhanced operational efficiency and facilitate optimum use of available capacity. With the number of airports implementing Airport CDM increasing, the Network benefits will be increased.

These benefits include an enhanced flow management process and reduced number of wasted ATFCM slots resulting in more used capacity throughout the Network as a more accurate timing of the traffic is provided to all partners. The DPI messages provide a way for the CDM airports to be integrated into the ATFCM process, supporting therefore the management of the Network by allowing a best adjustment between airports and ATC capacity. They allow the NM to better know the CDM airport constraints for a given flight and to take them into account in its own processes.

CDM airports have a better knowledge of the traffic to its destination and are able to take it into account in its own processes. The short term forecast of the traffic situation allows A-CDM to adapt and efficiently improve operations at the airport.

Airlines also benefit as they get a better view of their respective fleet situation before the departure of the flights.

**14.2. ADVANCED ATC TWR AIRPORTS**

An advanced ATC TWR airport provides Target Take-Off-Time (TTOT) estimations as well as Variable Taxi-Times (VTTs) and SIDs to the NMOC. These are provided from the moment that the aircraft leaves the blocks, which allows the NMOC to take the actual off-block event into account for ATFCM operations.

**14.3. LEVELS OF IMPACT ON NETWORK OPERATIONS OF CDM AIRPORTS**

For most airports (that are not CDM), the communication concerning ATFCM matters is done between the FMP and the NMOC. The TWR usually does not communicate directly with the



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NMOC. For example, the TWR provides runway-in-use changes to the FMP who then provides it to the NMOC.

For CDM airports it is normally agreed that the TWR and the NMOC communicate directly when it concerns individual flights, for example a flight for which a DPI has been received with late TTOT. The communication concerning global airport related issues should still go via the FMP, for example airport default capacity changes.

For the purpose of communication and cooperation between an A-CDM and the NMOC, 3 levels of Network impact of an airport have been identified:

- Level 0 - Normal operations.
- Level 1 - Adverse conditions or hindered operations
- Level 2 - Disrupted operations

The relevant Network impact level will be agreed between the TWR and the NMOC and the cooperation and support that the NMOC can give to a CDM airport depends on this Network impact level.

The definition of Network impact level will allow for a simplified communication between each TWR controller and the NMOC and each CDM airport and the NMOC.

The TWR / FMP shall inform the NMOC of any change in operations that significantly impact the Network (e.g. a change from adverse conditions back to normal operations). This applies to deteriorations of situations but also of improvements.

The NMOC may agree to have daily conference calls in order to improve operations with specific CDM airports if required.

### 14.3.1. Level 0 - Normal Operations

Normal operations are situations during which demand and capacity at the airport are in balance.

The TWR at the CDM airport will mainly coordinate individual flights as required with the NMOC.

It will be the responsibility of the TWR supervisor at the CDM airport to inform the local FMP. All matters concerning ATFCM regulations will be coordinated between TWR-FMP-NMOC and vice versa.

### 14.3.2. Level 1 - Adverse Conditions or Hindered Operations

The following are examples of events which may require special coordination between the A-CDM TWR supervisor (or representative), the FMP and the NMOC:

- Emergencies on the aerodrome such as situations of security alerts, hijacking, fire and short term closure of apron, taxiway or runway affecting departures.
- ATC system failures at the aerodrome or at the ACC not yet reflected in ATFCM measures but which may prevent departures for a short period.
- Extreme adverse weather situations such as heavy freezing rain or thunderstorm activity in the vicinity of the airport.

The fact that normal operations at an aerodrome may make the adherence to ETOTs or CTOTs difficult is not considered as an event which in itself requires special procedures. Difficulties that may arise in such circumstances are considered part of normal operations.

Individual aircraft which cannot make their CTOT / ETOT due to one-off events delaying their taxi / departure are not covered by this level. They are to be treated like any other aircraft whose CTOT is about to expire or has expired.

Low visibility conditions or conditions requiring routine de-icing procedures do not qualify as they are managed by the imposition of exceptional conditions (XCD) by the NMOC.

In the event of a significant drop of departure capacity at a A-CDM airport (e.g. single RWY ops, bad weather operations, etc.), it is important that a good coordination takes place first at local

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level between the A-CDM partners on the expected demand-capacity balancing (e.g. cancellations, prioritisation of flights,...) and then between the A-CDM TWR and the NM tactical team. Only after that process has taken place, NM tactical team may improve flights with excessive delays.

It will be the responsibility of the TWR supervisor at the CDM airport to inform the local FMP. However, all matters concerning ATFCM regulations will be coordinated between the FMP and the NMOC directly.

**14.3.3. Level 2 - Disrupted Operations**

Operations at an airport could be considered as severely disrupted in case of:

- Departure rate is below 25% of normal capacity;
- If TOBT and TSAT of the majority of the flights are differing by 90 minutes or more;
- During e.g. the last 2 hours there have been 2-4 runway closures of which the estimated begin and end times have been exceeded by more than e.g. 10 minutes;
- Suspension of departures (e.g. freezing rain) and no estimation for reopening is possible;
- Unexpected runway closure and no estimate can be made for reopening;
- It is important that during such situations, the A-CDM airport provides the best possible TTOT to the Network and the best possible balance is found between protecting the Network from over-deliveries and further disruption local operations.

The A-CDM TWR supervisor (or representative) will inform the NM DOM and FMP as soon as possible when local constraints have fully disrupted the current operations.

**14.4. INFORMATION REQUIRED FROM FMP / TWR FOR CDM AERODROMES**

The following is a list of items in which the NMOC is interested for situational awareness:

- Any situation affecting departure and arrival capacity such as:
  - unexpected runway closures,
  - lack of parking spaces.
- Any contingency operations such as:
  - interruption of DPI messages,
  - no longer issue start-up in accordance with TSAT,
  - extension of the night curfew,
  - stop of operations + its duration (e.g. during lightning),
  - de-icing + impact on departure rate.

Other information that may be provided if the situation requires:

- Landing runway(s) in use (if not done via CHMI).
- Departure runway(s) in use.
- Average ATC Ground Delay (TSAT-TOBT).
- Flow rates (if any).
- MDI.

It is interesting to have updates immediately when the situation changes including having a view on the situation for the next 1-2 hours.

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**14.5. DEPARTURE PLANNING INFORMATION (DPI)**

Departure Planning Information (DPI) messages are system-to-system messages sent by an airport CDM system to ETFMS. The types of DPI messages are:

- E-DPI (Early DPI)
- T-DPI-t (Confirmed)
- T-DPI-s (Sequenced)
- A-DPI (ATC DPI)
- C-DPI (Cancel DPI)

Each is sent at different times and at different trigger events. The messages include data about take-off times, i.e. estimated, aircraft operator or ATC target and push-back times by ATC taking into account individual taxi / sequencing times.

DPIs are complemented with the reception by the CDM system of updated NM data either via the FUM messages or derived from the EFD messages. A FUM will be sent for any change in the CDM status of the flight.

An essential requirement for DPI messages to be sent from an airport system is that a fully functioning CDM organisation exists at the airport concerned. Common data is shared and used by all partners at the airport; with DPIs, this information is also given to the NM, where it is used in its systems to update its own data making it more dynamically up-to-date, and subsequently it is shared with all NM users.

**14.5.1. DPI Messages**

There are 5 main types of DPI messages, the Early-DPI, the Target DPI-target, Target DPI-sequenced, the ATC-DPI and the Cancel-DPI. Each DPI serves a specific purpose and should be sent at its appropriate event and time frame. The DPI messages are recognised by their DPISTATUS in the message. The DPISTATUS of the messages are:

DPI Type	DPI Status
E-DPI	DPISTATUS EARLY
T-DPI-t	DPISTATUS TARGET
T-DPI-s	DPISTATUS SEQ
A-DPI	DPISTATUS ATC
C-DPI	DPISTATUS CNL

Each DPI messages also provides the ETFMS with:

- A variable taxi-time per flight.
- The SID per flight selected by ATC.

DCTs in the SID are taken into account by the ETFMS for the profile calculation. The ETFMS accepts a waypoint or a navigation aid point as a value in the SID field.

DPI messages may also provide the airport with the aircraft type (ARCTYP) and the aircraft registration as updated by the airport.

One or more E-DPI, T-DPI-t, T-DPI-s and A-DPI messages may be transmitted if the departure times differ from those previously transmitted by a defined parameter.

Normally, the sequence of DPI messages is E-DPI > T-DPI-t > T-DPI-s > A-DPI.

However, this order is not necessarily enforced by ETFMS during operations.

For some aerodromes and AOs, the ETFMS will compare the TOBT in a received DPI with the last EOBT of the flight and generate a DLA message if the TOBT is later than the EOBT, therefore updating the FTFM. According to ICAO, any changes to the EOBT of more than 15 minutes shall be communicated, either by using this feature or via a DLA message from the AO.

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Flights departing from DPI transmitting aerodromes may benefit from the extended departure and slot tolerance windows during adverse operating conditions at an airport enabled periods.

## 14.5.2. DPI Types

### E-DPI (Early-DPI)

The E-DPI message in the operational log, identified by the DPISTATUS=EARLY field, is sent after verification of the flight plan EOBT with the airport slot (SOBT) and as such confirms the ICAO FPL message. The provided SOBT field is currently not used by ETFMS. For CDM flights, the Scheduled Off Block Time (SOBT) is not relevant before the very first E-DPI (or is always equal to the EOBT of IFPS messages) and it will be set or updated by the greatest value between the EOBT field of the very first E-DPI message and the EOBT field of the latest IFPS message received before this very first E-DPI. E-DPI also provides the ETFMS with the first estimate of the taxi-time and the SID, if available.

The ETFMS handles this type in the same way it handles DLA messages, i.e. updating the FTFM triggering a recalculation of the Network impact with the update of the CTOT if applicable.

The ETFMS will show an IFPS discrepancy if the **TOBT** derived from the TTOT and taxi time is outside a window of + / - 15 minutes around the last known EOBT. This derived OBT **from TTOT and taxi time** overrides only the EOBT of the FTFM not the IOBT nor the LOBT and so does not appear in the ATFCM messages.

The CDM Status is set to 'e – estimated' if the E-DPI is accepted.

### T-DPI-t (Target-DPI-target)

Provides ETFMS with an updated Target Take-Off Time (TTOT), from which the ETFMS derives an updated OBT.

There are T-DPI-t and T-DPI-s. If no E-DPI has been received previously, the ETFMS will accept the T-DPI but a comment in the operational log 'T-DPI received before E-DPI' will be displayed.

The T-DPI-t is based upon the Target Off-Blocks Time (TOBT) derived from data such as the estimated landing time of the inbound aircraft, passenger connections, crew connections and the estimated turn-around time. It is based upon flight plan data and (local) updates during the turn-around. In general this information represents the AO's desires and does not take into account ATC constraints at the airport and / or ATFCM restrictions. Updates of the TTOT (TOBT + variable taxi time) by 5 minutes or more will trigger a new T-DPI-t message.

The CDM Status is set to 't – targeted' if the T-DPI-t is accepted.

T-DPI-t should be sent from EOBT-2 hours to EOBT - 30 minutes.

### ETFMS behaviour in response to T-DPI-t message:

#### 1. Non-regulated flights

- The ETFMS will use the TTOT to update the FTFM.
- The ETFMS will re-assess the impact of the T-DPI-t on the ATM Network.
- The ETFMS will show an IFPS discrepancy if the **TOBT** is outside a window of + / - 15 min around the EOBT (IFPS OBT).
- Any ATFCM suspension conditions will be re-assessed. If the flight remains or becomes suspended, the FTFM becomes the reference and it is based upon the TTOT of the T-DPI-t and the ETFMS will resend an FLS.

#### 2. Regulated flights

- If the TTOT is earlier than the Slot Tolerance Window (STW), then normally the CTOT is kept and TTOT is taken as a 'no slot before' time. The true revision process will try to improve the CTOT up to the last known TTOT.
- If the TTOT falls within the STW (-5 / +10), then flight profile is updated to this time with no recalculation done to the regulations (CTOs).

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- If the TTOT is after the STW, then a complete recalculation is performed by the ETFMS. The message is considered as a DLA by the ETFMS. The in-built 'recovery hole' mechanism may help to minimise huge added ATFCM delays.
- The flight will get the status RFI automatically regardless what the CACD settings for the AO concerned are and regardless of any previously received ATFM message.

The AO is not expected to (and should not) send SWM when operating from CDM airports.

### T-DPI-s (Target-DPI-sequenced)

The T-DPI-s (Sequenced) is based upon the Target Start-up Approval Time (TSAT) derived from the ATC sequencing plan. This information represents the ATC's desires and takes into account ATFCM restrictions and as accurately as possible any other taxiing / sequencing delays.

In some airports, T-DPI-s messages are sent at TOBT - 40 minutes for non-regulated flights and at TSAT - 10 minutes for regulated ones. Other airports are providing an optimal TTOT for regulated flights from TOBT - 40 minutes onwards. The optimal TTOT is the earliest possible TOT for a flight, taking all local constraints (e.g. TOBT, TSAT...) into account but not the CTOT. The ETFMS will make such a flight REAdy for immediate Improvement immediately and try to improve the CTOT taking into account this optimal TTOT.

CDM Status in the Flight List is set to 's' (sequenced).

### ETFMS behaviour in response to T-DPI-s message:

#### 1. Non-regulated Flights

The TOT of the FTFM is based upon the flight plan (FPL, DLA and CHG) and updates of E-DPI and T-DPI-t.

If the TTOT (TSAT + taxi time) is inside the DTW around the take-off-time of the FTFM then:

- Regulations crossed and suspension conditions are not assessed.
- Traffic load is updated through the creation of the Current Tactical Flight Model (CTFM) based upon the TTOT. If some regulations are now crossed by the CTFM, the slot lists are updated accordingly.

If the TTOT (TSAT + taxi time) is outside the DTW around the take-off-time of the FTFM then:

- Where the updated TTOT falls before the DTW, regulations crossed and suspension conditions are assessed based on this 'no slot before' time. If some regulations are crossed, a complete recalculation is performed by the ETFMS. If the updated TTOT falls after the DTW, the ETFMS will consider it as a DLA message.

In all cases, the traffic load is updated through the creation of the CTFM based upon the TTOT. The flight status in the flight list and slot list is set to 'tac'. FAM will start shifting at the TTOT and will suspend the flight 20 minutes after the TTOT.

#### 2. Regulated Flights

When the TTOT (TSAT + taxi time) is before the STW then:

- The TTOT is stored for possible future use as a no slot before time. The ETFMS will try to improve the CTOT up to the provided no slot before time at regular intervals and the ETFMS will use the no slot before time when the regulation schema is modified.
- The message is considered by the ETFMS as a REA and the system will try to improve the flight in the same manner.

Note that in case the TTOT is even before the ETOT of the FTFM, then the FTFM is updated. In fact in this case the T-DPI-s is processed in exactly the same way as a REA message (see REA message for more details).

When the TTOT (TSAT + taxi time) is inside the STW then:

- Regulations crossed and suspension conditions are not assessed, the traffic load is updated through the creation or update of the CTFM based upon the TTOT. If some

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regulations are (still or no longer) crossed by the CTFM, the slot lists are updated accordingly. FAM will start shifting at the TTOT and will suspend the flight 20 minutes after the TTOT.

- The ETFMS will no longer provide any CTOT improvements and the flight may be impacted by modifications of the regulation schema.
- When the TTOT (TSAT + taxi time) is after the STW then:
- Regulations crossed and suspension conditions are re-assessed based on this 'no slot before' time.
- If some regulations are still crossed, a complete recalculation is performed by the ETFMS. Otherwise, the RTFM is adjusted to this TTOT but the traffic load is updated through the creation of the CTFM based upon the TTOT. FAM will start shifting at the TTOT and will suspend 20 minutes after the TTOT.
- If the flight no longer crosses any regulations, an SLC message is sent.

### A-DPI (ATC-DPI)

The message provides the ETFMS with an accurate estimation of the actual take-off time. It is based upon the take-off-sequence of the flight and it is sent at push-back.

The ETFMS activates the flight on reception of the A-DPI; the CTFM is created. The ETFMS will reject the A-DPI message if the TTOT is outside the STW for regulated flights. The ETFMS will then expect updates on the TTOT from T-DPI-t or T-DPI-s. In some operational cases the TWR / FMP may request an extension of the CTOT. It will show a TOT violation in case the flight showed a TTOT outside the slot tolerance window.

FAM will start shifting at the TTOT and will suspend the flight 20 minutes after the TTOT (if A-DPI was accepted).

**The Tower Update A-DPI is a special type of A-DPI that can be manually triggered by the TWR controller to either:**

**a) request a CTOT extension.**

**b) request a new CTOT (search for first available CTOT).**

**c) request de-suspension for a flight that was suspended while (still) under control of ATC.**

### C-DPI (Cancel-DPI)

If the turnaround process is interrupted the airport will inform the NMOC about the event with a C-DPI message.

As a result of the reception of a C-DPI message the ETFMS will suspend the flight with the comment: suspended by departure airport. Any update to the TOBT / EOBT will de-suspend the flight.

A C-DPI may be sent and accepted at any time, even if it is the first DPI message. A C-DPI will also be accepted after a DLA message has been sent. After a C-DPI, an E-DPI, a T-DPI-t, a T-DPI-s, a **Tower Update A-DPI** or a new EOBT from a DLA/CHG message will be accepted by the ETFMS and will de-suspend the flight. An A-DPI sent after a C-DPI will be rejected.

**A C-DPI with reason UNDOADPI can be used to de-activate a flight which was wrongly activated and ETFMS will not suspend the flight. A wrong activation can occur when the pushback clearance event has been input by TWR for the wrong flight.**

#### 14.5.3. Suspended Flights

In case of a suspension due to IFPS revalidation, the Estimated Flight Model (FTFM) will not be updated but the flight remains suspended. An FLS is not re-sent. Any type of DPI messages will be rejected with the error 'FLIGHT SUSPENDED DUE TO IFPS REVALIDATION'.

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At a reception of any DPI message, with one exception for A-DPI, the ETFMS will re-assess suspension conditions and regulations crossed:

- If the flight remains suspended, the FLS message is re-sent.
- If the flight becomes de-suspended, then a DES or SAM message is sent.

### 14.5.4. CDM STATUS in the Flight List

A CDM status indicator is shown in the flight list. The first letter indicates:

(blank)	Not departing from a CDM airport
<b>C</b>	Departing from a CDM airport (expecting DPI)
<b>e</b>	Estimated (E-DPI)
<b>t</b>	Targeted (T-DPI-t)
<b>s</b>	Pre-sequenced (T-DPI-s)
<b>a</b>	Actual off-block (A-DPI)



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## 14.5.5. Message summary

Message	E-DPI	T-DPI-t	T-DPI-s	A-DPI	C-DPI
<b>Timing from OBT</b>	From EOBT - 3 hrs	From EOBT - 2 hrs	From TOBT – 40 min	At AOBT	At any time
<b>Received From</b>	A-CDM or Adv ATC TWR	A-CDM	A-CDM	A-CDM or Adv ATC TWR	A-CDM or Adv ATC TWR
<b>Received Data (some of these fields are optional)</b>	TT SID TTOT TOBT SOBT	TT SID TTOT (Target TOT) TOBT TSAT	TT SID TTOT (Sequence TOT) TOBT TSAT	TT SID TTOT AOBD AOBT	TT SID
<b>Derived Data</b>	CDM status = e	TOBT = TTOT – TT TTOT = No slot before CDM status = t	TSAT = Seq_TOT – TT TTOT = No slot before CDM status = s	CDM status = a	CDM status = e
<b>Effect on ETFMS</b>	FTFM recomputed with TTOT or EOBT + TT	FTFM recomputed with SID, TT, TTOT	<b>For Non Regulated Flight</b> When TTOT outside DTW ⇒ Perform Network assessment for suspension / regulation. When TTOT inside DTW ⇒ CTFM created <b>For Regulated Flight</b> When TTOT before ETOT ⇒ Same processing as REA When TTOT after ETOT and before STW ⇒ CTFM deleted ⇒ CTOT improvement possible When TTOT inside STW ⇒ <b>CTFM created</b> ⇒ No CTOT improvement When TTOT after STW ⇒ Perform Network assessment for suspension / regulation	TT updated tac activated CTFM created / updated (if TTOT inside STW)	Flight Suspended (FLS)
<b>Notes:</b> TTOT Target TOT TOBT: AO's Target OBT TSAT: ATC's Target Start-up Approval Time TTOT (T-DPI-s): ATC's updated Actual TOT No slot before: TTOT (Sequenced TOT) STW: Slot Tolerance Window DTW: Dep. Tolerance Window			<b>Following Network assessment</b> When Flight non-regulated / de-suspended: ⇒ CTFM re / computed ⇒ SLC / DES sent appropriately When Flight assessed regulated: ⇒ SAM / SRM sent ⇒ CTOT improvement possible If TTOT inside STW ⇒ CTFM created ⇒ No CTOT improvement When Flight assessed suspended: ⇒ FLS sent		

For further details refer to the DPI Implementation Guide and the Flight Progress Messages document.



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## 15. ANNEX C: SLOT ALLOCATION PROCESS

The slot allocation procedures detailed below are those applicable to the NM ETFMS. They are applied to all flights subject to ATFCM slot allocation departing from within the ATFCM area or from within the ATFCM Adjacent area and entering the ATFCM area.

### 15.1. DESCRIPTION OF THE COMPUTER ASSISTED SLOT ALLOCATION (CASA) SYSTEM

The CASA system is largely automatic and centralised, and functions from an AO's point of view in passive mode. In other words, the act of filing a flight plan effectively constitutes a request for a slot.

After coordination with the FMP, the NM decides to activate regulations in those locations where it is necessary. In ETFMS regulations include the start and the end times, the description of the location, the entering flow rate and some others parameters. In accordance with the principle of 'First Planned - First Served' the system extracts all the flights entering the specified airspace and sequences them in the order they would have arrived at the airspace in the absence of any restriction.

On this basis, the Take-Off Time (TOT) for the flight is calculated. It is this information, Calculated Take-Off Time (CTOT), which is transmitted to the AO concerned and to the control tower at the aerodrome of departure.

For each regulated point, area or airport, CASA builds and manages a list of slots i.e. the Slot List. A regulation may be specified over sub-periods, each sub-period being assigned a rate. CASA uses these items to build initially an empty Slot List. For instance, a four hour long sub-period associated with a basic rate of 28 flights per hour, would result in a Slot List made up of 112 slots separated from one another by approximately 2 minutes.

### 15.2. DESCRIPTION OF THE SLOT ALLOCATION PROCESS

#### 15.2.1. Pre-allocation stage

When the regulation is activated, CASA starts to receive flight data, based on Repetitive Flight Plan (**RPL**) and Filed Flight Plan (**FPL**) as available. Each flight concerned by the regulation is given a provisional slot based on the order of their Estimated Time Over (**ETO**) the restricted location.

This initial reservation is internal to the ETFMS system and is subject to amendment.

Due to the constant recalculation of the Slot Allocation List (SAL) as new flight plans arrive, the provisional slot is very likely to be changed.

When CASA receives new flight data, it pre-allocates the slot as close to the requested Estimated Time Over (**ETO**) the restricted location **as it is available**:

- If that slot is free, it is assigned to the flight, which thus suffers no delay.
- If that slot is already pre-allocated to a flight which is planned to overfly the restricted location after the new flight then the latter takes the slot. Of course, the consequence can be a chain reaction, because the flight whose slot has been taken tries to recover another slot, possibly by taking the slot of another flight, etc.

#### 15.2.2. Pending rate

In order to reduce the number of large delays for late updaters the pending rate will be kept entirely for flights that are modified after the SAM is issued with messages such as FCM, DLA or CHG messages. Late filers will not be considered for allocation of pending slots.

The default number of pending slots should be coordinated between the NMOC and the FMP either in pre-tactical or tactical. As a general rule, if a regulation duration is 2 hours or more and the rate is 20/60 or more, the pending rate should be 5 % of the total rate. It is not recommended to use pending slots for shorter regulations or with a lower rate.

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Pending slots are not used during activation of a regulation, taxi time change, deep rectification. A pending slot with an earlier time will not be allocated to a flight from a later slot, i.e. a flight will not be improved to an earlier slot by being a late updater, but will be allocated the next available later slot. At a certain time a pending slot is converted into a normal slot.

### 15.2.3. Slot amendment process

When CASA receives the flight data for the cancellation of a flight, this may improve the slots given to other flights. The slot amendment procedure aims to take into account the new slots made available. It applies only to pre-allocated flights. Therefore it is an essential requirement, with beneficial interest for AOs, to **cancel as early as possible** those flight plans which will **no longer operate**.

### 15.2.4. Allocation stage

At a fixed time before the Estimated Off-Block Time (**EOBT**) of each pre-allocated flight, called Slot Issue Time 1 (**SIT1**), the slot is allocated to the flight and a Slot Allocation Message (**SAM**) is sent to the AOs and ATC.

An allocated slot cannot be taken by another flight, unless the regulation is deep rectified and the CTOT has not been forced or as an effect of the true revision process (see below). However, an AO should update its EOBT, if it is thought that the flight will not be able to comply. Moreover, the slot allocated to a flight may be improved by the true revision process.

### 15.2.5. Window width

The window width is a parameter used to provide flexibility to CASA and to suppress small delays.

The normal value of the window width is 10 minutes. This value shall be used except in these cases:

- The FMP requests a different value for operational reasons. This value should be promulgated via an operational procedure.
- Very low acceptance rates, where the window width should be determined by using the following formula:  $(60 / \text{rate}) \times 2$ .

### 15.2.6. Late reception of slot messages

There are many mechanisms within the NM systems to prevent, in normal circumstances, the late transmission of a slot, or update to a slot. Nevertheless, there are four conditions that can cause the late reception of a slot time:

#### Late flight plan submission / update

The flight plan is filed or modified (reception of a FPL / DLA / CHG message by the ATFCM system) shortly before the EOBT. If needed, a SAM / SRM is sent immediately. Of course, in this case the SAM / SRM is also sent later than SIT1.

#### Slot Change Control Display

When a regulation is created, deep rectified and/or cancelled, the Slot Change Control Display is presented to the flow manager.

The Slot Change Parameters Display gives the flow manager possibility to decide:

- Which flights with ETO/CTO inside the regulation period are potentially affected by the action
- Which is the improvement/deterioration potentially given to the flights

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- Which is the flight status needed to get an improvement.

For flights having already received a slot, a SRM may be sent. However, a SRM is not sent for flights that are close to their off block time. The parameter TRS (Time to Remove from Sequence), related to each aerodrome, prevent it from happening. The values of the TRS for each aerodrome are available via the NM Client Application in the Environment / Aerodrome Details menu.

For flights that become regulated as a result of the new or modified regulation, a SAM is sent. There is no mechanism to forbid sending a SAM up to the last minute, however, for flights very close to their EOBT, the SAM will not indicate a delay i.e. it will indicate an 'on time' slot. The main reason for sending the SAM is to inform the Tower and the pilot that the flight has become regulated. If the flight preparation is on schedule, it should not be unduly affected. If the flight preparation is late, then the normal procedure for flights not able to cope with their slots must be used.

In case of cancellation of a regulation, a SLC may be sent. This can happen any time up to the CTOT. The main reason is to inform the Tower and the pilot that the flight is no longer regulated.

**Manual intervention**

The NMOC Air Traffic Flow and Capacity Controller manually allocates another slot to a given flight causing a SRM to be sent. This normally only happens following an agreement between the parties. See relevant manual actions.

**Transmission delay**

The message is sent early enough, but due to transmission problems it arrives late. The occurrence is limited but it may happen.

**15.2.7. Combined flow measures for one flight**

The general principle is that a flight which is subject to several CASA regulations is given the delay of the most penalising regulation and is forced with that delay into all other regulations.

**15.3. TRUE REVISION PROCESS**

This is the automatic mechanism that routinely attempts to improve the slot of allocated flights every minute; for a given flight, the true revision process takes place after the SAM has been issued until a time parameter before the CTOT. This parameter is linked to the Aerodrome of Departure (**ADEP**) and its associated parameter values.

**15.4. READINESS STATUS OF A FLIGHT****15.4.1. RFI and SWM status**

All flight plans are by default in Ready for Improvement (RFI) status. In case an improvement is possible, flights in status RFI will immediately receive a Slot Revision Message (**SRM**).

This default status may be changed to **SWM** status for all flights upon request, if an AO wishes to receive proposal of improvement via a Slot Improvement Proposal (**SIP**).

**15.4.2. RFI message**

The AO may change the status of a particular flight from SWM to RFI by sending the **RFI** message. It will immediately receive a Slot Revision Message (**SRM**) in case of improvement.

**15.4.3. Slot Improvement Proposal message**

The AO may change the status of a particular flight from **RFI** to **SWM** by sending the SIP Wanted Message (**SWM**). In case of possible improvement, the flight will receive a Slot Improvement Proposal (**SIP**) instead of SRM.

The AO may accept or refuse the new CTOT via a Slot Proposal Acceptance (**SPA**) message or a Slot Rejection (**SRJ**) message.

After a fixed time (**SIP** time out), if no response has been received from the AO, the proposal is cancelled and the slot that was booked for that flight, is released.

AOs are requested to use the **SRJ** message if they do not wish to take advantage of the **SIP**. This is designed to release the slot so that it can be offered to another flight.

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**16. ANNEX D: TRAFFIC VOLUMES**

A Traffic Volume (TFV) is an important element in the environment data structure, allowing the selection of a specific volume of air traffic in order to compare the traffic load and the available capacity during the activation period.

A TFV is a tool used by the NM and the FMPs for:

- monitoring,
- applying ATFCM measures.

Information concerning the TFVs are for most of them, semi-dynamic data. It is therefore possible in real time (through the Live database), to create a new TFV, provided the reference location exists, but not to modify or delete it. Semi-dynamic data may be modified or deleted only in the Load database. But, they may be created in the LIVE database.

The load database is the one which is prepared for the next AIRAC cycle.

The live database is the one which is currently used. It contains the actual AIRAC cycle data.

**16.1. BASIC DEFINITIONS**

A TFV must always be related to only one Reference Location (RL) but one RL can constitute the basic element for several TFVs. The RL is based on a geographical entity. It is either an aerodrome (AD), a set of aerodromes (AZ), an airspace volume (AS), or a significant point (SP).

When aerodromes and sets of aerodromes are used as reference location they shall always be qualified as being either:

- Arrivals (Category: 'A'): only arriving traffic will be considered in the TV.
- Departures (Category: 'D'): only departing traffic will be considered in the TV.
- Global (Category: 'G'): both arriving and departing traffic will be considered in the TV.

An airspace or a significant point used as reference location shall always be qualified as being Global (Category 'G').

**Airspace volumes** describe the ATC structure, which is formed by the following elements:

- Elementary sectors (ES),
- Collapsed sectors (CS),
- ATC unit airspace (AUA),
- Cluster,
- RSA,
- Flight information region (FIR),
- Region (REG).

FIR and REG cannot be used as a reference location

**Significant points** (Navigation Aid (NVA), Waypoint (PWP), Reference Points (RFP) and GEO Points (GEO)) are global but additional to the existing information a flight level band must be added.

The TFV activation period is:

**Automatic:** for TFV with a reference location formed of an ES or a CS, derived from the sector configuration activation table.

They are qualified as **monitorable** (MO).

**Manual:** for all other TFVs it must be specified in the TFV activation period table.

TFVs may be global (all traffic) or with flows.

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**Cluster:** a cluster is an optional partition of an ATC Unit Airspace (AUA). It groups a number (at least one, but usually more) of Elementary Sectors (ES) from the concerned ATC Unit Airspace (AUA).

Typically, an ATC Unit Airspace (AUA) can be split into 2 or more clusters, for example one for the East and one for the West. This corresponds to the way the concerned ATC Unit is operated in terms of sector configurations, in fact as 2 different operational units in this example.

A cluster must have at least one sector configuration and at least one activation of sector configuration.

When an AUA is partitioned into clusters, it cannot have sector configurations. Instead, the sector configurations are defined and activated in each of its clusters.

### 16.2. FLOWS

Flows on TFVs have the purpose of specifying the flights which are subject or not to ATFCM measures.

A traffic volume always consists of **all** or **one** or **several** flows. In the case of all flows, it means that no specified flow is defined (i.e. all traffic is included).

A flow consists of **upstream** element(s) (coming FROM), or **downstream** element(s) (going TO), or both. The location(s) can be aerodrome(s), or set(s) of aerodromes with a flow originating or terminating at these aerodromes, airspace volumes or significant points. A flow may be defined by a maximum of three upstream and three downstream elements, with a minimum of 1 upstream or downstream element. The reference location has to be between the upstream and the downstream locations.

When a reference location is an airspace volume the time considered for a given flight is the entry time to the airspace volume. For a significant point it is estimated time over (ETO) and for an aerodrome Estimated time of arrival (ETA) or estimated time of departure (ETD) respectively.

The ETFMS differentiates between the upstream and the downstream portion comparing times. When a time is **before** the reference location time then it is considered upstream. When it is **after** it is considered downstream.

As soon as a required flow is specified, the **List of Flows** should be checked first to see whether that flow already exists.

If the flow does not exist, a special form **Create Flow** has to be used. When defining a new flow, the following format must be adhered to:

**Format: From > To** ('>' being the location). All elements to the left of the symbol are upstream and all elements to the right are downstream. From and To represent flow elements and they can be either:

#### **A Set of Aerodromes (AZ)**

**Example:** ED> OR ED&>

& is used to indicate a set of aerodromes larger than the one indicated.

#### **An Airspace Volume (AS)**

Elementary sectors (ES), collapsed sectors (CS), ATC unit airspace (AUA), flight information region (FIR) and region (REG)

**Example:** LOVV@> the sign @ after the name of the FIR indicate that the flights are entering this airspace.

#### **An Aerodrome (AD):**

**Example:** EDDF>

#### **A Significant Point (SP):**

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Example: BNE>

## 16.2.1. Associated flows

Flows may be associated to a reference location. This is a particular feature that should not be confused with the use of flows in traffic volumes.

The association of flow(s) to a reference location allows the NM and the FMPs to display detailed counts of these flows of traffic for that particular reference location. The display is done through a traffic volume and therefore a reference location with associated flow(s) will normally, but not always, be linked to a global traffic volume (i.e. without specified flow).

## 16.2.2. Autoshow flows

An Autoshow flow behaves like an associated flow. Such a flow will be shown automatically in any TFV when ETFMS detects at least one matching flight. In particular:

- departing flights for which a T-DPI-s has been processed ('CDMS' flow);
- departing flights for which an A-DPI has been processed ('CDMA' flow);
- flights subject to delay threshold ('DTM' flow).

## 16.2.3. Flows defined directly in the ETFMS

It is possible for the NM tactical team to create ETFMS flows that may be used directly in count and flight list queries. This enables the users to see which flights are going via some points / airspaces / aerodromes / set-of-aerodromes before (or without) defining a traffic volume for this purpose.

## 16.2.4. Flows defined with Communication, Navigation and Surveillance (CNS) conditions

It is possible to create flows with defined Communication, Navigation and Surveillance (CNS) conditions. These flows may then be used in TFVs which can be regulated according to applicable operational procedures.

## 16.3. SET OF AERODROMES

To create a flow it may be necessary to use a set of aerodromes as a flow element. Already existing sets of aerodromes are detailed in the [List of Sets of Aerodromes](#) (max. 2000).

To create a new set of aerodromes it is necessary to provide the following information (via a DMR):

### 16.3.1. Set of aerodromes identifier

A set of aerodromes identifier (maximum 8 characters) must be unique within all Sets of Aerodromes (including IFPS Aerodrome Groups) and is normally formed by the common letters of the ICAO location indicators. It can also contain a third letter indicating an FIR within the State, a digit indicating a smaller grouping within an FIR, etc., but the only fixed rule is to make it as short as possible in order to permit its use in the flow description;

### 16.3.2. Set of aerodromes name

A set of aerodromes name (maximum 20 characters) is the operational name or a short description of the set of aerodromes;



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## 16.3.3. Set of aerodromes description

It is formed by the list of all aerodromes inside the set. They are described using the ICAO location indicators. Wild cards can also be used. A set of aerodromes can contain maximum **150** aerodromes and **30** wild cards.

A **wild card** is replacing a single character or a group of characters in an aerodrome identification. It permits to group several aerodromes with common letter(s) in the ICAO location indicator. e.g. all German aerodromes can be simplified to ED??+ET??

## 16.4. INDIVIDUAL ITEMS DESCRIPTION

### 16.4.1. Traffic volume set id

The traffic volume set id (max. 8 alphanumeric characters) is the name of the set to which the traffic volume must be attached.

When creating a new TFV Set always use the four letters of ICAO location indicators in the beginning of the name.

Example: LSAZFMP.

The number of traffic volumes attached to a traffic volume set is limited to **200**.

### 16.4.2. Reference location identifier

The reference location identifier (max. 12 characters) is the identification of a significant point, aerodrome, set of aerodromes or airspace volume to which the traffic volume concerned is related.

For an aerodrome indicate arrival, departure or global.

### 16.4.3. Traffic volume identifier

The traffic volume identifier (max. 8 alphanumeric characters) should clearly indicate the location and purpose of the traffic volume. Individual characters have the following meaning:

#### 1. The reference location is an airspace volume

An indicator must be added to the airspace volume to indicate that the TFV is not a global one. This indicator may be placed either at the end either between the ACC name and the sector name.

Example: LFFTE1, EGT1CLW

#### 2. The reference location is an aerodrome or set of aerodromes

The first four letters indicate the aerodrome by the ICAO location indicator; the next letters indicate arrival, departure, global or any other special conditions (fog, special event...).

A qualifier may be added as for the airspace volume either at the end or between the aerodrome name and the next letters.

Example: LFPOARR1 EHAM1ARR

#### 3. Set of aerodromes

The characters describe the set of aerodromes identifier may range from two to eight characters. If the set of aerodromes has to be used as a reference location it cannot contain more than ten aerodromes and wild cards cannot be used.

Example: LFP

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**4. Significant point**

The characters are dedicated to describe the significant point name and supplementary data, if applicable.

Example: MOPUG1I

**16.4.4. Traffic Volume name**

The **name** attribute of a Traffic Volume may be used to describe the Traffic Volume using plain language. The maximum length of the **Traffic Volume name** is 500 characters. There may be maximum 15 lines, and each line may contain maximum 60 characters.

The allowed characters are: 0-9 A-Z , . : = ' + - ) ( / Blank ' ?

It is not possible to insert a forbidden character (line shows in red).

This limitation is to enable transmission of this text via AFTN (as part of the ANM) without any alteration.

**16.4.5. Skip In and Skip Out parameters**

**Skip In parameter is a set time that ETFMS and PREDICT take into account to consider whether a flight has to be counted in the concerned TFV. If the time between entry and exit is less than the 'Skip In' time for the concerned TFV, then the flight is not counted in that TFV. IFPS does not take this parameter into account.**

**Example: if the 'Skip In' is set to 1 minute, a flight profile needs to be for at least 1 minute inside the TFV for this flight to be counted inside it.**

**Skip Out parameter is a set time that ETFMS and PREDICT take into account to consider whether a flight crossing the same TFV twice has to be counted only once or twice in that TFV. If the time between exit and re-entry is less than the 'Skip Out' time for the concerned TFV, then the flight is only counted once. IFPS does not take this parameter into account.**

**Example: if the 'Skip Out' is set to 15 minutes, a flight profile needs to have at least 15 minutes between the exit of the airspace and the re-entry into the same airspace to be counted inside it for a second time.**

**Individual 'Skip In' and 'Skip Out' parameter values may be specified per TFV. If they are not specified, by default the TFV inherits the 'Skip In' and 'Skip Out' values from its Airspace Reference Location. Airspace 'Skip In' and 'Skip Out' values are only used as default values for a TFV.**

**The 'Skip In' and 'Skip Out' values are specified in minutes and seconds.**

**'Skip In' maximum value is 09MIN00SEC.**

**'Skip Out' maximum value is 59MIN59SEC.**

**16.5. FLOWS INSIDE THE TFV (MAXIMUM 50 FLOWS)**

In the first column of the form **Traffic Volume Description** give the list of flows required. In the second column of the form indicate if the flows are included (IN), excluded (EX), exempted (EM) or included and exempted (IE).

Each flow may be defined as:

**Included (IN):** flow(s) will be subject to counts and possible ATFCM measures.

When one or more flows have been Included, all the other flights are then considered excluded.

**Excluded (EX):** flow(s) will not be subject to counts and possible ATFCM measures.

This exclusion can be used when no flow is defined in the TFV, (i.e. everybody is concerned), and it is necessary to exclude a particular flow.

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When it is necessary to exclude a flow which is part of flows already included.

**Exempted (EM):** flow(s) will be subject to counts, but not to ATFCM measures. In case of a regulation these flights will be shown in the slot list but with no delay and they will not be considered for a rerouting.

This exemption can be used when no flow is defined in the TFV (i.e. everybody is concerned) and it is necessary to exempt a particular flow.

When it is necessary to exempt a flow part (sub-flow) of flows already included.

**Included / Exempted (IE):** flow(s) will be subject to counts but not to ATFCM measures.

This inclusion / exemption can be used when at least one flow has been defined as Included (IN) in the TFV before **and**

When the included / exempted (IE) flow is not part (sub-flow) of the flow(s) already defined as included (IN) in the TFV.

### 16.6. MONITORABLE TFV (MO)

The MO information indicates the TFV which shall be monitored by the NM pre-tactical and tactical teams and FMPs when the sector is active in a sector configuration. Several TFVs may be monitorable. The MO TFV may be non-MO and vice-versa on live data.

#### 16.6.1. ANM traffic volume description field

The ATFM Notification Message (ANM) contains the list of ATFCM measures for the following day and it provides, in addition to other details, the description of each location where an ATFCM measure is to be applied. This is done through the 'ANM TFV description' field which is part of the information stored in the CACD for each traffic volume. The term ANM TFV description is used mainly in the regulation editor screen of the ETFMS; in the NM CACD terminology the field ANM TFV description is called 'Traffic Volume Name'.

##### System limitations

The following most important system limitations are:

- The NM CACD limitation for the TFV Name / ANM TFV Description is 40 characters. Pre-tactical and Tactical operations can manually input 90 characters;
- The NM CACD limitation for the TFV Note / ANM Remark is 250 characters. Pre-tactical and Tactical operations are reduced to 128 characters;
- To take the most complex case as an example, when a TFV is created for a scenario, it is necessary to describe:
  - The city pairs involved in the route / profile change;
  - The forbidden route / sector;
  - The route / profile advice that AOs should follow when they re-file their FPL;
  - All this needs to be described in plain language to enable a clear understanding of the scenario and its implications and requirements.
  - Once the description is created it must be stored so that when a Regulation is applied the appropriate Field is auto-filled with the correct information and this information is published via ANM to all our customers.

### 16.7. ALLOCATING DELAY TO AERODROMES

Certain traffic volumes with reference locations based on airspaces are designed for airfield restriction purposes (protected location). These traffic volumes need to report their delay characteristics as airfield, rather than en-route, to improve statistics.

An indication of the change of delay attribution is auto-populated into the regulation editor when one of these traffic volumes is entered. The regulation cause is reflected in the SAM and SRM

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messages by value OA 83 in the REGCAUSE field. It is not possible to set up or change the type of delay attribution from the default value from the regulation editor.

Traffic volumes with the following characteristics may have protected locations:

- An airspace reference location that includes within its geometrical dimensions the airport that should be protected.
- Contains a single included flow with the airport as a downstream flow element.
- May contain excluded flows
- May contain exempted flows but not included exempted flows.

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**17. ANNEX E: COUNTS**

A count is the number of flights in a given location (airspace, point, traffic volume or aerodrome) during a specified time period. This may be the actual or expected number of flights.

**Monitoring value**

The monitoring value (MV) is the agreed number of flights accepted to enter into a reference location per rolling hour beyond which coordinated actions may be considered between the concerned parties in order to better balance the traffic load.

**Rate**

The rate is the number of flights managed in one regulation. The rate may be identical to the capacity if it is a global regulation; nevertheless rate and monitoring value are managed independently.

**Overdelivery**

An occurrence when the declared ATC monitoring value is exceeded by the actual number of aircraft that enter a regulated sector during a particular period.

**Overload**

An occurrence when an air traffic controller reports that he / she has had to handle more traffic than they consider it was safe to do so.

**17.1. COUNT INTERVALS**

The ATFCM staff have the choice between a set of intervals. This interval choice is done in the query display (when choosing counts or counts on flow). The default interval is 'Hour every 20 minutes' and it means that when asking counts the system is providing Hourly counts every 20 minutes (e.g. counts from 10h00 to 11h00, 10h20 to 11h20, etc.).

Other values are:

- Hour every 1 min
- Hour every 5 min
- Hour every 10 min
- Hour every 20 min
- 1 min
- 5 min
- 10 min
- 20 min
- 30 min
- Hour
- Day

Some of these counts are not providing hourly values and such values cannot be compared to an hourly monitoring value. To avoid confusion in the count display showing non-hourly values, the capacity column is filled in with %%% when the capacity cannot be compared to the values.

**Note:** Due to a technical limitation in the system, the maximum number of intervals the system can compute is limited to 128, which is sufficient to compute a value every 20 minutes for that day and day +1. When the interval is such that more than 128 values should be shown, the period will be automatically reduced to the period covering the 128 values. When switching the interval value, the period is automatically reset to the biggest possible period.

**17.2. FLIGHTS**

In the ETFMS, the source of a flight plan may be an FPL, an AFP or an RPL.

FPL and AFP-sourced data represents flight plans filed directly with the IFPS by the message originator, while RPL-sourced data undergoes a different process in that RPLs are filed first to the RPL section and then generated to the IFPS. A copy of each day's RPL traffic is sent directly to the ETFMS each night at around 03h00 UTC. Such data cannot be used as active flight plan data until a second copy of each RPL is submitted by the RPL system to the IFPS for full processing at 20 hours prior to the EOBT of each RPL. On successful processing of such data, the IFPS will then send a copy of each individual RPL, in the form of an IFPL, to the ETFMS, from which point, that flight plan may be considered valid.

**17.3. DEMAND COUNTS**

The demand is the count made in the ETFMS from the flight plan filed by the aircraft operator in any given location (airspace, point, traffic volume or aerodrome). The demand takes in account any flight plan modifications (CHG, DLA, and CNL) and take-off-time updates from CDM airports that are based upon airline updates such as E-DPI and T-DPI-t messages.

This demand is built from the Filed Tactical Flight Model (FTFM) of individual flights (See **Tactical Flight Models**).

**17.4. REGULATED DEMAND COUNTS**

The regulated demand shows the counts according to any regulations that have been implemented. If any flights are delayed, they are displayed in the regulated demand according to their new entry time. After reception of ATC data (e.g. FSA, CPR) in the ETFMS, the regulated demand does not change anymore, making the regulated demand unsuitable for monitoring purposes.

The Tactical Flight Model used in this case is the Regulated Tactical Flight Model (RTFM) for regulated flights and the FTFM for those flights that are not regulated.

**17.5. ACTUAL COUNTS**

The actual counts (shown in the ETFMS as 'Actual') show the number of flights, which are either:

- ATC: flights (currently airborne or landed) for which an airborne message has ATC activated the flight (e.g. FSA, CPR).
- TAC: TACT activated or landed flights for which no airborne message was received and that are departing from an aerodrome, or first entering the NM area via an airspace, that does not systematically cause FSAs to be sent to the NM. In addition, flights for which NM has received take-off time updates from CDM airports and Advanced ATC TWR airports which are based upon information from ATC or off-blocks (A-DPI), will also be displayed as TACT activated.
- FSA: TACT activated or landed flights for which no airborne message was received and that are departing from an aerodrome, or first entering the NM area via an airspace, that systematically causes FSAs to be sent to the NM.

These 3 columns (ATC, TAC and FSA) are displayed next to the ACT column to show how many flights are established as active (ATC), those flights that cannot be guaranteed as active (TAC), and those flights for which there is a high probability of becoming active (FSA).

The reference Tactical Flight Model from which the actual counts are created is the Current Tactical Flight Model (CTFM).

**17.6. LOAD COUNTS**

The load shows the counts according to the best information that the ETFMS has on each flight in a defined location:

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If the flight is actual, it uses the real departure time and any subsequent updates to compute the entry time (CTFM).

If the flight is not actual but regulated, it uses the regulated demand (slot time) to compute the entry time (RTFM).

If the flight is not actual, nor regulated, it uses the flight plan, E-DPI and T-DPI-t information to compute the entry time (FTFM).

The load is the count that is used by the NM tactical team to monitor the traffic situation.

### 17.7. OCCUPANCY COUNTS

Occupancy counts provide the number of flights that are inside a defined location at a precise time and correspond to the flights that are (or will be) worked by ATC at that time.

Occupancy count queries are available for traffic volumes, airspace volumes, delayed flights, aircraft operator and all flights. Occupancy counts are available to external users.

An occupancy count is a technique used by FMPs to monitor defined location loading. Occupancy Traffic Monitoring Values (OTMVs) for a sector / traffic volume may vary based on traffic complexity, technical status and the staff situation of the day. The FMPs / ACCs are in the best position to judge this.

The decisions taken by the NM are based on load monitoring and not on the assessment of occupancy counts, but access to occupancy counts are available via the query display in the ETFMS.

#### 17.7.1. Basic Definitions

Some basic definitions of parameters used in OTMVs are:

**Duration:** Time Interval reference defined for a specific traffic volume. The interval is used to evaluate and compare the load against the Occupancy Traffic Monitoring Values (Peak and Sustained).

**Peak:** Occupancy Traffic Monitoring Value defined for a specific duration interval. If the load value in the traffic volume for the pre-defined duration exceeds the peak value an alarm is triggered.

**Sustained:** Occupancy Traffic Monitoring Value defined for a specific duration interval. This value indicates the maximum sustained value manageable. The condition is the following.

**Step:** Time rolling interval for which a duration period is 'moved' to evaluate the load.

**Elapse:** Time interval that defines the 'evaluating' period of sustained value.

**Occurrence:** Number of times that the load is above the sustained value defined.

#### 17.7.2. Alarms generation

**Peak Alarm:** If the load value of a step for a duration interval is above the peak value then the step is coloured as being overloaded (red). Exceptionally, an interval of one step between two peaks will be also marked in red.

**Sustained Alarm:** If the load of a step for a duration interval is above the sustained value AND there are more than x occurrences above the sustained value in the elapse interval then all the steps are coloured as being overloaded (orange - even if there are some values below the sustained between the first and the last values above the sustained).

#### 17.7.3. Occupancy query access from the NID

It is possible to access the OTMV load and counts from the NID in order to simplify the ability to check occupancy counts and if necessary move the slot to a time to reduce overloads.



**17.8. SPECIAL LOCATIONS**

Special locations are artificial locations used to count and obtain flight lists on non-geographical locations. ETFMS supports following type of special locations:

Delayed flights - used for counts and flight lists on flights having a delay.

Aircraft operator - used for counts and flight lists for a specific operator.

All flights - used for counts and flight lists on all flights in the system.

For the more classical geographical locations (points, aerodromes, airspace or set of aerodromes Set of Aerodrome, Air Navigation Unit, Traffic Volume Set, Regulation, Restriction) the time of entry and exit corresponds to the time computed in the profile by the ETFMS.

For special locations, a flight is considered to have a time of entry at the TOT of the flight and an exit time at the flight arrival time.

**17.9. SEGMENT COUNTS**

The segment counts enable the user to examine 'flows' on the ETFMS map. Access to a flow's flight list from the flow displayed on the map display is possible.

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**18. ANNEX F: ASM – ATFCM PROCESS****18.1. THE BASIS OF THE FUA CONCEPT**

Flexible Use of Airspace (FUA) concept is based on the fundamental principle that airspace should not be designated as either pure civil or military airspace, but rather be considered as one continuum in which all user requirements have to be accommodated to the extent possible.

The Flexible Use of Airspace concept is based on the possibilities offered by new or adaptive airspace and route structures that are particularly suited for temporary allocation and utilisation, namely non-permanent ATS routes called conditional routes (CDRs) and temporary areas (TSAs, TRAs, CBAs and AMC-manageable R or D areas).

The application of the FUA concept includes the setting-up of national airspace management cells (AMCs), for the daily allocation and promulgation of flexible airspace structures, and on the establishment of the Centralised Airspace Data Function (CADF) within the NM. The CADF disseminates the daily information of airspace structures status to aircraft operators.

The concept is intended to allow the maximum use of airspace through civil / military coordination. The application of the FUA concept ensures that any airspace segregation / reservation shall be temporary and based on the real need for a specified time period.

A comprehensive summary of the FUA concept can be found in the **European Route Network Improvement Plan, Part 3 Airspace Management Handbook, Guidelines for airspace management**, which is available on the NM website and contains a list of the acronyms used.

**18.2. THE ASM LEVELS**

The three main levels of airspace management (ASM) correspond to civil / military coordination tasks together with the associated rules for their usage in a distinct and close relationship. Each level has an impact on the others:

- **ASM LEVEL 1** Strategic Level: establishment of pre-determined airspace structures. Related tasks include the high level definition and review of the national airspace policy, taking into account both national and international airspace requirements.
- **ASM LEVEL 2** Pre-tactical Level: day-to-day allocation of airspace according to the user requirements. The task is to conduct the operational management within the framework of the structures and procedures defined at Level 1.
- **ASM LEVEL 3** Tactical Level: real-time use of airspace allowing a safe OAT / GAT separation. This level consists of the activation, de-activation or reallocation of the airspace allocated at Level 2 and the resolution of specific airspace problems and / or individual traffic situations between Operational Air Traffic (OAT) and General Air Traffic (GAT).

**18.2.1. Area Control Centre (ACC)/Flow Management Position (FMP) - CDR / Areas Requests**

Requests for CDRs and / or airspace volumes availability, more relevant in FRA environments, will normally be based on capacity shortfalls identified in the pre-tactical ATFCM phase. The Flow Management Positions (FMPs) and the associated Area Control Centres (ACCs) in coordination with the NM will assess the expected traffic forecast for the next day, highlight areas of insufficient ATC capacity and agree to the requirement for traffic flow adjustment requests.

As a result of this pre-tactical ATFCM coordination process, and after consideration of all other relevant ACC factors, the FMPs / ACCs, as Approved Agencies (AAs), will submit, on the day before operations, their request of CDRs and / or airspace volumes to the AMC.

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**18.3. THE ASM AIRSPACE STRUCTURES****18.3.1. Temporary Airspace Restriction and Reservation**

The Temporary Airspace Allocation (TAA) process consists in the allocation process of airspace of defined dimensions assigned for the temporary reservation/segregation (TRA / TSA) or restriction (D / R) and identified more generally as an "AMC-manageable" area.

Two different types of airspace reservation can be established taking into consideration the activity that would take place associated with the transit possibility:

- Temporary Reserved Area (TRA);
- Temporary Segregated Area (TSA).

Temporary Segregated Areas (TSAs) are areas that are temporarily reserved for the exclusive use of specific users to ensure the safety of all operations.

Whenever an area is planned to be used for activities not always requiring a segregation to protect not-participating aircraft, it should be designated as Temporary Reserved Areas (TRA). In this way it would be possible to improve the flexibility in the usage, allowing tactical crossing when the activity inside does not require a protection of not-participating traffic.

**18.3.2. Cross-Border Areas (CBAs)**

Cross-Border Areas are the Temporary Segregated/Reserved Areas established over international boundaries. They are established by the States to allow military training and other operational flights to be carried out on both sides of a border.

**18.3.3. Reduced Coordination Airspace (RCAs)**

Reduced coordination airspace is a specific portion of airspace with which GAT is permitted off-route without requiring GAT controllers to initiate coordination with OAT controllers.

**18.3.4. Conditional Routes**

Flexible airspace structures have been established that are suited to temporary use, one of these are the so-called Conditional Routes (CDR).

Conditional Routes (CDR) are ATS routes that are only available for use under specified conditions. A Conditional Route may have more than one category, and those categories may change at specified times. Special care shall be taken in the use of Conditional Routes that have been established for the implementation of FUA.

CDR routes are grouped into three categories and are published by national authorities:

- Category 1 Conditional Route (CDR1)

This CDR route is available for flight planning during times published in the relevant National AIP unless closure has been requested through National Airspace Use Plan (AUP). The EAUP / EUUP shall notify closures of CDR1 routes.

- Category 2 Conditional Route (CDR2)

This CDR route is not available for flight planning unless opening has been requested through the National Airspace Use Plan (AUP). Flights may only be planned on a CDR2 in accordance with conditions published daily in the EAUP / EUUP.

- Category 3 Conditional Route (CDR3)

This CDR route is not available for flight planning at all. Flights shall not be planned on these routes but ATC may issue tactical clearances on such route segments.

**Note:** NM working arrangements took the decision to move to a single CDR category (CDR1). A Transition period of 18 months has been agreed to achieve the final implementation of a single CDR category at latest by the beginning of 2020.

#### 18.4. THE ASM AIRSPACE UNITS

##### 18.4.1. Approved Agencies (AAs)

Those concerned national authorities approve units, known as Approved Agencies (AAs), to utilise CDRs, TSAs / TRAs, CBAs or AMC-manageable restricted and danger areas.

AAs are required by States to submit airspace / CDR requests to the AMC for airspace utilisation and allocation in order to perform their operations with the required safety.

Any request could be presented as a block of airspace / FLs for CDRs required during a specified period of time with the possibility of adapting the request in time and flight level.

The requests should refer to the 24H period of time between 06:00 UTC the next day to 06:00 UTC the day after (D 0600hrs to D+1 0600hrs).

##### 18.4.2. Airspace Management Cell (AMC)

A joint civil/military Airspace Management Cell (AMC) exists to conduct the day-to-day management and temporary allocation of national airspace according to user requirements.

Approved Agencies (AAs) responsible for airspace activities submit requests for allocation of airspace or routes (CDRs) to the AMC the day before operations.

After the AMC has received, evaluated and de-conflicted the airspace requests, the notification of the airspace allocation (CDRs, TSAs, etc.) are published in a daily Airspace Use Plan (AUP).

After the AUP publication, additional requests / information can be received by AAs and any change in the allocation plan will be communicated through national Updates Airspace Use Plans (UUPs).

##### 18.4.3. Centralised Airspace Data Function (CADF)

The CADF is an ASM function established in the NM by the ECAC States to collect the information from AMCs through national AUPs / UUPs and to compile the daily EAUP / EUUP.

Any inquiries regarding CADF function should be directed to the AD Supervisor.

If it is found that an incorrect or incomplete EAUP / EUUP has been issued, the AD Supervisor will contact the NM OM (see the NM Agreement) to advise him of the requirements to issue a new EUUP.

#### 18.5. THE ASM PROCESS

##### 18.5.1. National Airspace Use Plan (AUP) / Updated Airspace Use Plan (UUP)

After the coordination process, by 15:00 UTC (14:00 UTC summer) the AMC should promulgate the AUP via CIAM or local ASM tools for the 24-hour period from 06:00 UTC on the day of operations to 06:00 UTC the next day (06:00 UTC D to 06:00 UTC D +1);

AMC will notify of any change of airspace status published with AUP via the promulgation of the first convenient UUP from 17:00 UTC (16:00 UTC summer) every hour up to 20:00 UTC (19:00 UTC summer) on D-1 with validity from 06:00 on D day to 0600 UTC D+1, and then from 07:00 UTC (06:00 UTC summer) on D+1 every 30 minutes up to 20:00 UTC (19:00 UTC summer). Each UUP promulgated by AMC supersedes the previous one(s).

##### 18.5.2. European Airspace Use Plan (EAUP) / European Updated Airspace Use Plan (EUUP)

The European Airspace Use Plan (EAUP) contains the consolidated list of available CDR2s, and unavailable CDR1s or permanent ATS routes as repetition of prior notice by NOTAM. It also contains the planned activations of restricted/reserved airspace structures.

The EAUP is issued by the NM each day by 15:00 / 14:00 UTC (winter / summer time). It covers the 24 hour time period between 06:00 UTC the next day to 06:00 UTC the day after. After the

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publication of the EAUP, updated Airspace Use Plans may be issued and published as European Updated Airspace Use Plan (EUUP).

EAUPs and EUUPs are available through the NOP Portal, in the EAUP/EUUP portlet. A Compare function enables the user to visualise the changes made between different versions.

In the context of B2B web services, the same data is also available through the e-AMI (electronic Airspace Management Information). A system to system connection can be established to integrate the e-AMI into stakeholders' own applications.

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## 19. ANNEX G: ROUTE AVAILABILITY DOCUMENT (RAD)

The Route Availability Document (RAD) is an ATFCM tool that is designed as a sole-source flight-planning document, which integrates both structural and ATFCM requirements, geographically and vertically.

The RAD is published each AIRAC cycle following a structured standard process of Requirement, Validation and Publication by the NM in cooperation / coordination with the States and the AOs. After publication, the RAD may be updated through the increment file. For details of route characteristics, refer to the ENR section of the relevant AIP.

### 19.1. BASIC PRINCIPLES

The objective of the RAD is to facilitate flight planning in order to improve ATFCM while allowing aircraft operators' flight planning flexibility. It provides a single, fully integrated and coordinated routeing scheme. Except where otherwise specified the RAD affects all NM airspace.

The RAD enables ANSPs to maximise capacity and reduce complexity by also defining restrictions that prevent disruption to the organised system of major traffic flows through congested areas with due regard to AOs requirements.

The RAD is designed as a part of the NM ATFCM operation. It organises the traffic into specific flows to make the best use of available capacity. Whilst, on its own, it will not guarantee the protection of congested ATC sectors during peak periods, it should facilitate more precise application of tactical ATFCM measures when required.

The RAD should also assist the NM in identifying and providing re-routeing options. Global management of the demand will, potentially, lead to an overall reduction of delays.

It is important to note that to achieve this, some re-distribution of the traffic may be required through the implementation of scenarios. This may result in modified traffic / regulations in some areas where, under normal circumstances, they would not be seen.

The RAD is subject to continuous review by the NM, the ANSPs and AOs to ensure that the requirements are still valid and take account of any ATC structural or organisational changes that may occur. Further reviews may be initiated at the request of the States or the user organisations.

### 19.2. STRUCTURE

The routeing organisation is defined by a list of restrictions on specific points, ATS route segments, DCT segments or sectors in both the upper and lower airspace.

The document includes all route flow restrictions valid for the NM area of responsibility.

**Note 1:** Details of weekend periods **and/or** the start and end time of the periods relates to the **restricted object** concerned unless specified otherwise.

**Note 2:** Additional periods can be declared as weekends (e.g. Busy Fridays, Nights, Bank Holidays), refer to national publication, relevant annex or RAD Harmonisation Rule (published on the NOP Portal) for details.

Reference is made to the phases of ATFM operation. These are as follows:

- **Strategic phase:** A planning phase from more than six days before the day of operation;
- **Pre-tactical phase:** A planning phase during the six days before the day of operation;
- **Tactical phase:** The day of operation.

### 19.3. PERIOD OF VALIDITY

The routeing organisation is permanently effective and applies daily H24, unless otherwise specified.

**19.4. NM APPLICATION**

The RAD is fully integrated into the NM systems, including IFPS. Any changes to an Annex will automatically be checked provided the relevant notification period has been observed.

Changes agreed outside the AIRAC cycle will be published in the RAD increment file (Published on the NOP Portal) and implemented in NM systems in real time.

**19.5. PERMANENT AMENDMENTS**

Permanent amendments to the RAD, or the period of validity, will be coordinated by the NM with the States concerned together with the AO organisations. All States concerned shall provide their request for changes to the NM, taking into account agreed publication and implementation dates, in accordance with AIRAC procedures.

Suspension of navigation aids, and / or replacement by temporary mobile units will be promulgated in the appropriate Annex of the RAD. Amendments will be published as follows:

- 28 days in advance of the relevant AIRAC cycle.
- Amendments will be highlighted in bold lettering.
- Last-minute changes will only be accepted on an exceptional basis, and only when they have an operational impact.

**19.6. FLIGHT PLANNING**

The RAD defines restrictions on points, ATS route segments, DCT segments, sectors or through specified areas during the published period of validity. Aircraft operators planning flights through these areas must flight plan in accordance with these route restrictions, taking into account any change of validity.

When a route is restricted between two points it must be understood that all segments, between the recorded points, are included in the restriction. Cross-boundary restrictions will be identified with a cross-boundary code (e.g. EGEB2000).

When filing flight plans, aircraft operators must comply with any flight level limitation published in the RAD.

An operator who has submitted a flight plan for a route and wishes to change to another route must either send a CHG message giving the new route, or cancel the existing flight plan and submit a new flight plan following the replacement flight plan procedure. This applies equally to re-routeing proposed by the NM and to changes made at the initiative of the operator.

## 20. ANNEX H: REGULATORY REPORTING PROCESS

All reports referenced in this process description are available through the NM dashboards (ATFM statistics and NMIR) that can be accessed at:

<https://ext.eurocontrol.int/analytics/>

The Agency website provides instructions on how to access the portal.

<http://www.eurocontrol.int/articles/Network-operations-monitoring-and-reporting>

### 20.1. REPORTING PROCESS FOR ATFM COMPLIANCE

#### General Principles

There are three phases to the reporting process:

- **Phase 1.** Monitoring and contributing to the detection of potential problems: the NMD is responsible for producing reports on the different indicators and providing them to the accountable entity (e.g. Member State, ATS unit) to inform them of their situation.
- **Phase 2.** Investigation on the detected problems: the accountable entity is responsible with support provided by the NMD.
- **Phase 3.** Reporting: the accountable entity is responsible.

### 20.2. NON-COMPLIANCE TO ATFM DEPARTURE SLOTS

#### Requirements

Member States shall ensure that where adherence to ATFM departure slots at an airport of departure is 80 % or less during a year, the ATS unit at that airport shall provide relevant information of non-compliance and the actions taken to ensure adherence to ATFM departure slots. Such actions shall be indicated in a report.

#### Process

##### Phase 1:

- A report monitoring the adherence of European aerodromes of departure to ATFM departure slots, according to the yearly target of 80 % (independently of the number of movements), shall be part of ATFM Statistics – ATFM compliance dashboard, Departure Compliance tab. This report shall present a summary per country and shall include the details of each aerodrome of departure not compliant with the target.

##### Phase 2:

- The ATS units are responsible for investigating the detected problems.
- They have the possibility to use the NM dashboards to investigate and get details (from monthly figures per aerodrome of departure until flight list associated to a day of departure) via the following reports:
  - ATFM Statistics – ATFM compliance dashboard, Departure Compliance tab
  - NMIR ATFM Compliance dashboard, the Slot Tolerance tab



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### Phase 3:

- The Member States where EC law is directly applicable are responsible for reporting to the EC, copying in the NMD ([nm.ops.perf@eurocontrol.int](mailto:nm.ops.perf@eurocontrol.int)). The Member States where EC law is not applicable should report to NM.

## 20.3. GRANTED EXEMPTIONS

### Requirements

Member States shall ensure that the central unit for ATFM notifies a member State which grants exemptions in excess of 0,6 % of that member State's annual departures

### Process

#### Phase 1:

- A report monitoring the yearly level of exempted flights per country and their adherence to the target of 0.6% per year shall be part of ATFM Statistics – ATFM compliance dashboard, ATFM Exemption tab. This report shall present a quarterly evolution per country together with country details (yearly and monthly repartition) about each status of exemption. NM provides the Member States through the nominated Focal Point the list of exempted flights. NM notifies the Member States when their annual exemptions exceed the 0.6% target.

#### Phase 2:

- The member states are responsible for leading the investigation of the detected problems.
- The member states have the possibility to use the NM dashboards to investigate and get details: list of exempted flights per country for a period of 1, 2, 3, 7 days or for a full month via the following report:
  - ATFM Statistics – ATFM compliance dashboard, ATFM Exemption tab
  - ATFM Statistics – Exempted flights dashboard
  - NMIR ATFM Compliance dashboard, the ATFM Exemption tab

#### Phase 3:

- The Member States where EC law is directly applicable are responsible for reporting to the EC, copying in the NMD ([nm.ops.perf@eurocontrol.int](mailto:nm.ops.perf@eurocontrol.int)). The Member States where EC law is not applicable should report to NM.

## 20.4. NON-COMPLIANCE TO FLIGHT PLAN SUSPENSIONS

### Requirements

The ATS unit at the airport concerned shall provide relevant information on any failure to adhere to flight plan suspensions at that airport and of the actions taken to ensure adherence. Such actions shall be indicated in a report.

### Process

#### Phase 1:

- A report monitoring the flights activated by ATC, while suspended by the Flight Activation Monitoring (FAM), with airborne data received when temporary suspended (subsequently referred to as unduly activated traffic below) shall be part of ATFM Statistics – ATFM compliance dashboard, Flight Plan Suspensions tab.
- The report shall present a yearly/monthly evolution of the European zone together with the individual country adherence values (according to their unduly activated traffic). To

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complete this report, a summary per country will give monthly figures for the country and detail for each aerodrome of departure having unduly activated traffic.

### Phase 2:

- The ATS unit is responsible for leading the investigation of the detected problems.
- The ATS unit shall have the possibility to use the NM dashboards to investigate and get information via the following reports:
  - ATFM Statistics – ATFM compliance dashboard, Flight Plan Suspensions tab
  - NMIR Flight dashboard, the Flight List tab, analysis type - flights subject to FAM
  - NMIR Traffic and Delay dashboard, FAM Monitoring:
    - Counts on shifts and suspension induced by FAM
    - Counts of flight subject to FAM
  - NMIR ATFM Compliance dashboard, the Flight Plan Suspension tab

### Phase 3:

- The Member States where EC law is directly applicable are responsible for reporting to the EC, copying in the NMD ([nm.ops.perf@eurocontrol.int](mailto:nm.ops.perf@eurocontrol.int)). The Member States where EC law is not applicable should report to NM.

## 20.5. MISSING OR MULTIPLE FILED PLANS

### Requirements

Member States shall ensure that the central unit for ATFM monitors the occurrences of missing flight plans and multiple flight plans that are filed.

### Process

#### Phase 1:

- NMD will produce summary reports of
  - Missing Flight Plans – CRCO flights: the number of flight plans held by the central route charges office (CRCO) that reference flights having no equivalents in NMD operational systems (ETFMS), published monthly on the ATFCM website at <https://ost.eurocontrol.int/sites/ATFMR/Pages/Missing-Flight-Plans-CRCO.aspx>
  - ATFM Statistics – ATFM compliance dashboard, Missing Flight Plans - APL Flights tab: the report will cover quarterly the flights entering NM airspace without a valid FP and ATC filed the flight plan
  - ATFM Statistics – ATFM compliance dashboard, Multiple Flight Plans tab: the number of flights where the NMD was not notified of take-off (i.e. that remained suspended by the Flight Activation Monitoring (FAM))
  - ATFM Statistics – ATFM compliance dashboard, Duplicate Flight Plans – Number of Flight Plans having the same ADEP / ADES, same registration, same first three letters of ACFT ID, EOBT within 15 minutes of each other and FPLs overlapping in time (usually one operated and the other(s) cancelled)
  - NMIR ATFM Compliance dashboard, the Missing, Multiple and Duplicate tabs

#### Phase 2:

- The Member States entities are responsible for leading the investigation of the detected problems.

#### Phase 3:

- The member States shall provide feedback to the NMD ([nm.ops.perf@eurocontrol.int](mailto:nm.ops.perf@eurocontrol.int)).

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## 20.6. OPERATIONS CAUSING PREJUDICE TO ATFM

### Requirements

Member States shall ensure that the central unit for ATFM reports to the airport slot coordinators on repeated operation of air services at significantly different times from the allocated airport slots or with the use of slots in a significantly different way from that indicated at the time of allocation, where this causes prejudice to ATFM.

### Process

#### Phase 1:

- When the misuse of an airport slot impacting ATFM is detected, a report to the relevant airport slot coordinator and / or airline involved shall be provided directly by the NMD.

#### Phase 2:

- The airport slot coordinator and / or airline involved shall lead the investigation of the detected problems and report back to the NMD with the results.

#### Phase 3:

- The airport slot coordinator and / or airline involved shall provide feedback to the NMD ([nm.ops.perf@eurocontrol.int](mailto:nm.ops.perf@eurocontrol.int)).

## 20.7. ANNUAL REPORT ON THE QUALITY OF THE ATFM IN THE ECAC AIRSPACE

### Requirements

When implementing Article 11, member States shall ensure that the central unit for ATFM produces annual reports indicating the quality of the ATFM that shall include details of:

- (a) causes of ATFM measures;
- (b) impact of ATFM measures;
- (c) adherence to ATFM measures;
- (d) contributions by parties referred to in Article 1(3) to the optimisation of the overall Network effect.

**Note:** Parties are: operators of aircraft; ATS units, including ATS reporting offices and aerodrome control services; entities involved in airspace management; airport managing bodies; central ATFM unit; local ATFM units; slot coordinators of coordinated airports.

### Process

#### Phase 1:

- NMD will report on the quality of the ATFM in the Network in the Annual Network Operations Report, the NM Annual Report and the ATFM Annual Report.

#### Phase 2:

- NMD shall consult those reports in line with existing requirements and arrangements.

#### Phase 3:

- NMD shall publish / submit the reports in line with its formal consultation process.

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21. ANNEX I: ACC CONTINGENCY PLAN TEMPLATE

OCCURRENCE	INITIAL ACTION				RECOVERY	
	AFFECTED AREA	CONTINGENCY MEASURE	TFV TO BE USED	RATE	ACTIONS	RATE
Evacuation of the ACC						
Radar failure						
Ground and R/T failure						
R/T failure						
Telephone failure						
Power failure						
FDPS						
Staff shortage Strikes						

<mailto:nm.acc-contingency@eurocontrol.int>

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## 22. ANNEX J: ATFCM MESSAGE TYPES

### 22.1. SLOT RELATED MESSAGES – ORIGINATED BY THE NM

The following table gives examples of all ATFCM messages currently in use. The table includes a brief description of each message and subsequent actions.

SLOT RELATED MESSAGES - ORIGINATED BY THE NM		
MESSAGE & <i>example</i>	DEFINITION	PROCEDURE & ACTION
<b>-TITLE SAM (1)</b> <b>-ARCID AMC101</b> <b>-IFPLID AA12345678</b> <b>-ADEP EGLL</b> <b>-ADES LMML</b> <b>-EOBD 160224</b> <b>-EOBT 0950</b> <b>-CTOT 1030</b> <b>-REGUL RMZ24M</b> <b>-TTO -PTID VEULE -TO 1050 -FL F300</b> <b>-TAXITIME 0020</b> <b>-REGCAUSE CE 81</b>	<b><u>SAM</u>: SLOT ALLOCATION MESSAGE</b>  The <b>SAM</b> is used to inform AOs & ATS of the Calculated Take-Off Time (CTOT) computed by CASA for an individual flight, to which AOs / ATC must adhere.	Sent to AOs / ATS 2 hours before the last received EOBT. AOs / ATC must comply with the CTOT.
<b>TITLE SAM (2)</b> <b>-ARCID AMC 101</b> <b>-IFPLID AA12345678</b> <b>-ADEP EGLL</b> <b>-ADES LMML</b> <b>-EOBD 160224</b> <b>-EOBT 0945</b> <b>-CTOT 1200</b> <b>-REGUL LMMLA24</b> <b>-TTO -PTID GZO -TO 1438 -FL F060</b> <b>-COMMENT AERODROME OR AIRSPACE OR POINT NOT AVAILABLE</b> <b>-TAXITIME 0010</b> <b>-REGCAUSE AA 83</b>	<b><u>SAM</u>: SLOT ALLOCATION MESSAGE</b> <b><u>In the case of:</u>      <u>Non Availability</u></b>  A <b>SAM</b> message is sent by the NM when a problem occurs on the flight path requiring a modification of the take-off time e.g. non-availability of aerodrome for a short period.	In the event of a non-availability for a short period the NM activates exceptional condition mechanism to inform AOs individually of the delay of their flight(s).  The AO and ATC shall comply to the(NEW)CTOT according to the usual ICAO rules. The (NEW may be modified as the situation requires. When an AO submits an amendment (e.g. DLA or CHG) to IFPS, he must always give as EOBT the earliest EOBT he may comply with. This time is not directly related to the (NEW)CTOT provided in the SRM. The EOBT in IFPS should always reflect the time at which the AO actually wants to be off-blocks. The flight plan may be modified to avoid the problem area. Reference shall be made to AIM / ANM and NOTAM.

Network Manager

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SLOT RELATED MESSAGES - ORIGINATED BY THE NM		
MESSAGE & <i>example</i>	DEFINITION	PROCEDURE & ACTION
<b>(3)</b> -TITLE SAM -ARCID <i>AMC 101</i> -IFPLID <i>AA12345678</i> -ADEP <i>EGLL</i> -ADES <i>LMML</i> -EOBD <i>160224</i> -EOBT <i>0945</i> -CTOT <i>1200</i> -RVR <i>100</i> -REGUL <i>LMMLA24</i> -TTO -PTID <i>GZO</i> -TO <i>1438</i> -FL <i>F060</i> -COMMENT <i>RVR CRITERIA NOT MET</i> -TAXITIME <i>0010</i> -REGCAUSE <i>WA 84</i>	<b><u>SAM</u>: SLOT ALLOCATION MESSAGE</b> <b><u>In the case of</u> Runway Visual Range (RVR)</b> An SAM message is sent by the NM when a problem occurs at or around aerodromes requiring a modification of the take-off time e.g. low visibility conditions which affect ATC capacity. The flight is delayed to arrive when RVR requirement is met (the RVR field will be added in the SAM message indicating the minimum RVR required as well as the related comment).	ETFMS sends individual Slot Allocation Messages to inform AOs and / or ATC that a flight has been delayed to arrive when RVR requirement is met. An SAM will be sent immediately at or after the moment of slot issue. AOs / ATC must conform to the SAM and, where required, the relevant AIM. Flights delayed due to insufficient RVR are repositioned in the slot list at reception of messages from AOs (see FCM below). The message will be followed by a SRM (indicating the NEWCTOT) or an SLC which indicates the departure requirements. Flights affected by weather conditions may become subject to other ATFCM regulations as well.
<b>(1)</b> -TITLE SRM -ARCID <i>AMC101</i> -IFPLID <i>AA12345678</i> -ADEP <i>EGLL</i> -ADES <i>LMML</i> -EOBD <i>160224</i> -EOBT <i>0950</i> -NEWCTOT <i>1020</i> -REGUL <i>RMZ24M</i> -TTO -PTID <i>VEULE</i> -TO <i>1025</i> -FL <i>F300</i> -TAXITIME <i>0020</i> -REGCAUSE <i>CE 81</i>	<b><u>SRM</u>: SLOT REVISION MESSAGE</b> After CASA has issued an initial <b>SAM</b> , subsequent updates may be notified via the <b>Slot Revision Message (SRM)</b> . This message may be used to indicate a delay increase or decrease.	The <b>SRM</b> notifies a significant change of slot It is issued not earlier than 2 hours before the last received EOBT. This EOBT may be provided by DLA or CHG. AOs / ATC must comply with the NEWCTOT.

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## SLOT RELATED MESSAGES - ORIGINATED BY THE NM

MESSAGE & <i>example</i>	DEFINITION	PROCEDURE & ACTION
<b>TITLE SRM (2)</b> -ARCID <i>AMC 101</i> -IFPLID <i>AA12345678</i> -ADEP <i>EGLL</i> -ADES <i>LMML</i> -EOBD <i>160224</i> -EOBT <i>0945</i> -NEWCTOT <i>1200</i> -REGUL <i>LMMLA24</i> -TTO -PTID <i>GZO</i> -TO <i>1438</i> -FL <i>F060</i> -COMMENT <i>AERODROME OR AIRSPACE OR POINT NOT AVAILABLE</i> -TAXITIME <i>0010</i> -REGCAUSE <i>AA 83</i>	<b><u>SRM</u>: SLOT REVISION MESSAGE</b> <b><u>In the case of</u> : Non Availability</b>  An <b>SRM</b> message is sent by the NM when a problem occurs on the flight path requiring a modification of the take-off time e.g. non-availability of aerodrome.	In the event of a non-availability for a short period the NM activates exceptional condition mechanism to inform AOs individually of the delay of their flight(s).  The AO and ATC shall comply with the (NEW) CTOT according to the usual ICAO rules. <b>The (NEW) CTOT may be modified as the situation requires. When an AO submits an amendment (e.g. DLA or CHG) to IFPS, he must always give as EOBT the earliest EOBT he may comply with. This time is not directly related to the (NEW) CTOT provided in the SAM / SRM. The EOBT in IFPS should always reflect the time at which the AO actually wants to be off-blocks. The flight plan may be modified to avoid the problem area. Reference shall be made to AIM / ANM and NOTAM.</b>
<b>-TITLE SRM (3)</b> -ARCID <i>AMC 101</i> -IFPLID <i>AA12345678</i> -ADEP <i>EGLL</i> -ADES <i>LMML</i> -EOBD <i>160224</i> -EOBT <i>0945</i> -NEWCTOT <i>1200</i> -RVR <i>100</i> -REGUL <i>LMMLA24</i> -TTO -PTID <i>GZO</i> -TO <i>1438</i> -FL <i>F060</i> -COMMENT <i>RVR CRITERIA NOT MET</i> -TAXITIME <i>0010</i> -REGCAUSE <i>WA 84</i>	<b><u>SRM</u> : SLOT REVISION MESSAGE</b> <b><u>In the case of</u> Runway Visual Range (RVR)</b>  An SRM message is sent by the NM when a problem occurs at or around aerodromes requiring a modification of the take-off time e.g. low visibility conditions which affect ATC capacity. The flight is delayed to arrive when RVR requirement is met (the RVR field will be added in the SRM message indicating the minimum RVR required as well as the related comment).	ETFMS sends individual Slot Allocation Messages to inform AOs and / or ATC that a flight has been delayed to arrive to arrive when RVR requirement is met.  <b>A SRM will be sent immediately</b> <b>AOs / ATC must conform to the SRM and, where required, the relevant AIM.</b> Flights delayed due to insufficient RVR are repositioned in the slot list at reception of messages from AOs (see FCM below). <b>The message will be followed by a SRM (indicating the NEWCTOT) or an SLC which indicate the departure requirements.</b>
<b>-TITLE SLC (1)</b> -ARCID <i>AMC101</i> -IFPLID <i>AA12345678</i> -ADEP <i>EGLL</i> -ADES <i>LMML</i> -EOBD <i>080901</i> -EOBT <i>0945</i> -REASON <i>OUTREG</i> -TAXITIME <i>0020</i>	<b><u>SLC</u>: SLOT REQUIREMENT CANCELLATION MESSAGE</b>  Sent to AOs / ATS to advise that a flight which has received a <b>CTOT</b> is no longer subject to an ATFCM restriction.	The flight is no longer subject to ATFCM measures and may depart without delay.  <b>If the EOBT of the flight is not realistic (e.g. more than 15 minutes in the past) the SLC will indicate a COMMENT PLEASE UPDATE EOBT WITH A DLA MSG reminding the AO to update its EOBT by sending a DLA).</b>



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SLOT RELATED MESSAGES - ORIGINATED BY THE NM		
MESSAGE & <i>example</i>	DEFINITION	PROCEDURE & ACTION
<b>(2)</b> -TITLE SLC -ARCID AMC101 -IFPLID AA12345678 -ADEP EGLL -ADES LMML -EOBD 080901 -EOBT 0945 -REASON VOID -COMMENT FLIGHT CANCELLED -TAXITIME 0020	<b><u>SLC</u>: SLOT REQUIREMENT CANCELLATION MESSAGE</b>  <b><u>In the case of</u> Cancel</b>  Sent to AOs / ATS to confirm that the slot of a regulated flight has been released as a result of a CNL.	When an SLC is issued as a result of a CNL, the field -COMMENT FLIGHT CANCELLED will be included in the SLC.
-TITLE SIP -ARCID AMC 101 -IFPLID AA12345678 -ADEP EGLL -ADES LMML -EOBD 080901 -EOBT 0945 -CTOT 1030 -NEWCTOT 1010 -REGUL UZZU11 -RESPBY 0930 -TAXITIME 0020	<b><u>SIP</u>: SLOT IMPROVEMENT PROPOSAL MESSAGE</b>  The <b>SIP</b> proposes a NEWCTOT. A response is expected from the AO.  If no response is given, the proposal expires at the respond by (RESPBY) time (15 minutes after the SIP issue time) and the last published CTOT remains valid.	If CASA is able to improve the CTOT by a significant amount, by using the slots freed due to a revised EOBT, Slot Missed Message or an improved flow rate, etc., a proposal is put to the AO before the NEWCTOT becomes firm.  The AO accepts the proposal with an <b>SPA</b> or rejects with an <b>SRJ</b> .
<b>(1)</b> -TITLE FLS -ARCID AMC101 -IFPLID AA12345678 -ADEP EGLL -ADES LMML -EOBD 080901 -EOBT 0945 -REGUL LMMLA01 -COMMENT AERODROME OR AIRSPACE OR POINT NOT AVAILABLE -TAXITIME 0020 -REGCAUSE AA 83	<b><u>FLS</u>: FLIGHT SUSPENSION MESSAGE</b> <b><u>In the case of</u> : Non Availability</b>  The ETFMS indicates with an <b>FLS</b> that this flight is considered as not taking off. The flight data are kept in the database but suspended (non-availability of an aerodrome for a long period).	In the event of a non-availability for a long period the NM activates the exceptional condition mechanism to inform AOs individually of the suspension of their flight(s).  The identifier of the regulation(s) concerned together with the corresponding regulation reason are inserted in the FLS message  AO must confirm their intent to operate in the provided regulation(s) with an FCM, in order to receive a slot after re-opening.

## ATFCM OPERATIONS MANUAL

## SLOT RELATED MESSAGES - ORIGINATED BY THE NM

MESSAGE & <i>example</i>	DEFINITION	PROCEDURE & ACTION
<b>(2)</b> -TITLE FLS -ARCID <i>AMC101</i> -IFPLID <i>AA12345678</i> -ADEP <i>EGLL</i> -ADES <i>LMML</i> -EOBD <i>080901</i> -EOBT <i>0945</i> -RVR <i>350</i> -RESPBY <i>0855</i> -REGUL <i>UZZU11</i> -COMMENT <i>RVR UNKNOWN</i> -TAXITIME <i>0020</i> -REGCAUSE <i>WA 84</i>	<b>FLS: FLIGHT SUSPENSION MESSAGE</b> <b><u>In the case of Runway Visual Range (RVR)</u></b>  The flight is suspended (comment will be RVR UNKNOWN) until the flight's RVR is provided to the NM.	ETFMS sends individual Flight Suspension Messages to inform AOs and / or ATC that a flight has been suspended. <b>A RESPBY time is also in the message enabling the AO to keep its present CTOT if the CHG / FCM with sufficient RVR is received by the NM in due time.</b> An <b>FLS</b> will be sent immediately where a flight has already received a CTOT. The <b>FLS</b> is sent instead of a <b>SAM</b> at the moment of slot issue.  The identifier of the regulation concerned together with the corresponding regulation reason are inserted in the FLS message.
<b>(3)</b> -TITLE FLS -ARCID <i>AMC101</i> -IFPLID <i>AA12345678</i> -ADEP <i>EGLL</i> -ADES <i>LMML</i> -EOBD <i>080901</i> -EOBT <i>0945</i> -COMMENT <i>SMM RECEIVED</i> -TAXITIME <i>0020</i>	<b>FLS: FLIGHT SUSPENSION MESSAGE</b> <b><u>In the case of : Slot Missed Message (SMM)</u></b>  After the reception of a <b>SMM</b> , the flight is put in suspension and ETFMS originates an <b>FLS</b> . The flight will be de-suspended after the reception of a DLA.	The flight will be de-suspended at reception of a DLA / CHG updating the EOBT or a new DPI message triggered by a TOBT update. The AO is expected to send a DLA / CHG or communicate the updated TOBT to the A-CDM platform. The message will be followed by a SAM (indicating the CTOT) or a DES, which indicates the departure requirements. If the flight has already departed, the first received ATC message (DEP / FSA) or the first received CPR will automatically de-suspend the flight.  AOs / ATC must conform to the FLS and, where required, the relevant AIM. The message will be followed by a SAM (indicating the CTOT) or a DES which indicate the departure requirements.
<b>(4)</b> -TITLE FLS -ARCID <i>AMC101</i> -IFPLID <i>AA12345678</i> -ADEP <i>EGLL</i> -ADES <i>LMML</i> -EOBD <i>080901</i> -EOBT <i>0945</i> -COMMENT <i>NOT REPORTED AS AIRBORNE</i> -TAXITIME <i>0020</i>	<b>FLS: FLIGHT SUSPENSION MESSAGE</b> <b><u>In the case of : Flight Activation Monitoring</u></b>  The flights, which are expected to be airborne but are not actually reported as airborne will be regularly 'shifted' then suspended and ETFMS will originate an FLS. The flight will be de-suspended after the reception of a DLA.	Flights may be reactivated at reception of DLA or CHG messages from AOs. AOs / ATC must conform to the FLS and, where required, the relevant AIM. The message will be followed by a SAM (indicating the CTOT) or a DES which indicates the departure requirements.  If the flight has already departed, the first received ATC message (DEP / FSA) or the first received CPR will automatically de-suspend the flight.

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**ATFCM OPERATIONS MANUAL**

SLOT RELATED MESSAGES - ORIGINATED BY THE NM		
MESSAGE & <i>example</i>	DEFINITION	PROCEDURE & ACTION
<b>(5)</b> -TITLE FLS -ARCID BEL2CC -IFPLID AA00126947 -ADEP EBBR -ADES LIPZ -EOBD 120119 -EOBT 0543 -COMMENT <b>SUSPENDED BY DEPARTURE AIRPORT</b> -TAXITIME 0016	<b>FLS: FLIGHT SUSPENSION MESSAGE</b> <u><b>In the case of : Cancel DPI</b></u>  At airports transmitting DPI messages the Cancel DPI (C-DPI) is sent when there is an interruption to the departure planning process and a new Off-Block-Time is not (yet) known, triggering the FLS.	The flight is de-suspended at reception of: <ul style="list-style-type: none"> <li>• A delay or change message (DLA/CHG) updating the EOBT.</li> <li>• DPI messages: For example a DPI message updating the TOBT.</li> <li>• An A-DPI message will also de-suspend the flight, regardless if a previous DPI message is not sent.</li> </ul> The message will be followed by a SAM (indicating the CTOT) or a DES which indicates the departure requirements. If the flight has already departed, the first received ATC message (DEP / FSA) or the first received CPR will automatically de-suspend the flight.
<b>(6)</b> -TITLE FLS -ARCID BEL2CC -IFPLID AA00126947 -ADEP EBBR -ADES LIPZ -EOBD 120119 -EOBT 0543 -PTOT 1000 -RESPBY 0720 -REGUL DVR9811  -COMMENT SUSPENDED DUE TO DELAY EXCEEDING THRESHOLD VALUE. SEND FCM BEFORE RESPBY TO SECURE PTOT. ALTERNATIVELY, REROUTE, OR UPDATE EOBT WITH A DLA MSG, OR CNL	<b>FLS: FLIGHT SUSPENSION MESSAGE</b> <u><b>In the case of : Regulation with Delay threshold Monitoring (used in specific circumstances decided by the NM)</b></u>  To additionally give to the airspace users delay information and time to react before fully suspending a flight crossing a high delays regulation.  An additional benefit is that the flights do not lose the initial sequence based on the ETO, as the slot is kept booked for a period of 20 minutes.	If, at SIT1 (EOBT - 2 hours) or later, the delay of the flight is bigger than the Delay Confirmation threshold time specified in the regulation editor, a slot for that flight will be booked, for a period of 20 min. Flights presenting delays below the threshold value will get a SAM.  A FLS will be sent containing a Proposal Take-Off Time (PTOT) and a Time for response by (Time of FLS issuance +20 min). By sending a Flight Confirmation Message (FCM) message within the time for response by, the airspace user shows its acceptance of the PTOT, upon receipt of a FCM a SAM is sent (PTOT becomes the CTOT). If the airspace user fails to respond within the Time for response by, the booking is lost and the flight remains suspended. Before SIT1, provisional delays and flights affected by delay threshold regulations can be monitored using external interfaces (NOP / CHMI).
-TITLE DES -ARCID AMC101 -IFPLID AA12345678 -ADEP EGLL -ADES LMMML -EOBD 080901 -EOBT 0945 -TAXITIME 0020	<b>DES: DE-SUSPENSION MESSAGE</b>  This NM message indicates that a flight which was previously suspended is now de-suspended.	The flight is de-suspended by ETFMS and is no longer subject to ATFCM measures. No action is normally required of AOs / ATS <b>but if the EOBT of the flight is not realistic (e.g. more than 15 minutes in the past) the DES will indicate a COMMENT PLEASE UPDATE EOBT WITH A DLA MSG</b> reminding the AO to update its EOBT by sending a DLA. In the meantime the flight will be counted as if departed taxi time + TIS after the de-suspension. AO shall update the EOBT by sending a DLA / CHG

## ATFCM OPERATIONS MANUAL

## SLOT RELATED MESSAGES - ORIGINATED BY THE NM

MESSAGE & <i>example</i>	DEFINITION	PROCEDURE & ACTION
<b>-TITLE RRP</b> (1) <b>-ARCID</b> <i>AMC101</i> <b>-IFPLID</b> <i>AA12345678</i> <b>-ADEP</b> <i>EGLL</i> <b>-ADES</b> <i>LMML</i> <b>-EOBD</b> <i>080901</i> <b>-EOBT</b> <i>1030</i> <b>-ORGRTE</b> <i>MID UA1 RBT UG32 TOP UA1 ELB UA12 PAL UA18 EKOLA A18 MLQ</i> <b>-CTOT</b> <i>1230</i> <b>-RRTEREF</b> <i>EGLLLMML1</i> <b>-NEW RTE</b> <i>MID UA1 RBT UG32 BAJKO UA21 NIZ UA2 AJO UA9 CAR UB21 PANTA B21 MLQ</i> <b>-NEWCTOT</b> <i>1105</i> <b>-RESPBY</b> <i>0900</i> <b>-COMMENT</b> <i>PURPOSE IS ATFCM</i> <b>-TAXITIME</b> <i>0020</i> <b>-TOT LIMIT -VALPERIOD</b> <i>20080901105020080901450</i>	<b>RRP: REROUTEING PROPOSAL MESSAGE</b>  This message is sent to an AO to offer a different CTOT or to avoid the need for a slot on a new route. A 'respond by time' is also added.  <b>Example 1</b>  The flight had already received a CTOT corresponding to its original route (ORGRTE). A new CTOT is offered provided the flight is refiled along the proposed new route (NEW RTE).	This issue follows a what-if reroute and 'apply' made at the NM. The AO who wishes to benefit from the offer shall consequently modify its flight plan either with a CHG (this solution preferred when the flight is conducted wholly within the IFPS / NM area of responsibility) or a CNL and refile using the Replacement Flight Plan procedure (RFP). This should be received before the RESPBY time.  At the reception of the new route in the flight plan ETFMS will merge it to the proposal.

## ATFCM OPERATIONS MANUAL

SLOT RELATED MESSAGES - ORIGINATED BY THE NM																
MESSAGE & <i>example</i>	DEFINITION	PROCEDURE & ACTION														
<p><b>-TITLE RRP</b> (2)</p> <p><b>-ARCID</b> <i>AMC101</i></p> <p><b>-IFPLID</b> <i>AA12345678</i></p> <p><b>-ADEP</b> <i>EGLL</i></p> <p><b>-ADES</b> <i>LMML</i></p> <p><b>-EOBD</b> <i>080901</i></p> <p><b>-EOBT</b> <i>1030</i></p> <p><b>-ORGRTE</b> <i>MID UA1 RBT UG32 TOP UA1 ELB UA12 PAL UA18 EKOLA A18 MLQ</i></p> <p><b>-CTOT</b> <i>1230</i></p> <p><b>-RRTEREF</b> <i>EGLLLMML2</i></p> <p><b>-NEW RTE</b> <i>MID A1 BOGNA UA1 RBT UG32 TOP UA1 ELB UA12 UA18 EKOLA A18 MLG DCT MLQ</i></p> <p><b>-RESPBY</b> <i>0900</i></p> <p><b>-REASON</b> <i>OUTREG</i></p> <p><b>-COMMENT</b> <i>PURPOSE IS ATFCM</i></p> <p><b>-TAXITIME</b> <i>0020</i></p> <p><b>-TOT LIMIT -VALPERIOD</b> <i>200809011050 200809011450</i></p>	<p><b>Example 2</b></p> <p>This flight is rerouted from a route which is crossing a regulated area(s) to a new route without a regulation.</p> <p>The REASON OUTREG indicates that there is no slot required, for that route.</p>	<p>Then SLC, SAM, SRM messages will be transmitted as appropriate.</p> <p>The possible combination of optional fields is as follows :</p> <table><tr><td>-CTOT -NEWCTOT</td><td></td></tr><tr><td>-CTOT -REASON</td><td></td></tr><tr><td>-PTOT -NEWPTOT</td><td></td></tr><tr><td>-PTOT -REASON</td><td></td></tr><tr><td>-PTOT -NEWCTOT</td><td></td></tr><tr><td>-NEWCTOT</td><td>only</td></tr><tr><td>-NEWPTOT</td><td>only</td></tr></table>	-CTOT -NEWCTOT		-CTOT -REASON		-PTOT -NEWPTOT		-PTOT -REASON		-PTOT -NEWCTOT		-NEWCTOT	only	-NEWPTOT	only
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SLOT RELATED MESSAGES - ORIGINATED BY THE NM		
MESSAGE & <i>example</i>	DEFINITION	PROCEDURE & ACTION
<b>-TITLE RRP</b> (3) <b>-ARCID</b> <i>AMC101</i> <b>-IFPLID</b> <i>AA12345678</i> <b>-ADEP</b> <i>EGLL</i> <b>-ADES</b> <i>LMML</i> <b>-EOBD</b> <i>080901</i> <b>-EOBT</b> <i>1030</i> <b>-ORGRTE</b> <i>MID UA1 RBT UG32 TOP UA1 ELB UA12 PAL UA18 EKOLA A18 MLQ</i> <b>-PTOT</b> <i>1230</i> <b>-RRTEREF</b> <i>EGLLLMML1</i> <b>-NEW RTE</b> <i>MID UA1 RBT UG32 BAJKO UA24 NIZ UA2 AJO UA9 CAR UB21 PANTA B21 MLQ</i> <b>-NEWPTOT</b> <i>1100</i> <b>-RESPBY</b> <i>0730</i> <b>-COMMENT</b> <i>PURPOSE IS ATFCM</i> <b>-TAXITIME</b> <i>0020</i> <b>-TOT LIMIT -VALPERIOD</b> <i>200809011050 200809011450</i>	<b>Example 3</b>  This flight has not yet received its slot, only a provisional take-off (PTOT) time was calculated. A new provisional take-off (NEWPTOT) time is calculated which corresponds to the new proposed route. This value may be modified until the final slot is issued.	This issue follows a what-if reroute and 'apply' made at the NM. The AO who wishes to benefit from the offer shall consequently modify its flight plan either with a CHG or a CNL and refile using the Replacement Flight Plan procedure (RFP). This should be received before the RESPBY time.  At the reception of the new route in the flight plan ETFMS will merge it to the proposal. Then SLC, SAM, SRM messages will be transmitted as appropriate.

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SLOT RELATED MESSAGES - ORIGINATED BY THE NM		
MESSAGE & <i>example</i>	DEFINITION	PROCEDURE & ACTION
<b>-TITLE RRP</b> (4) <b>-ARCID</b> <i>AMC101</i> <b>-IFPLID</b> <i>AA12345678</i> <b>-ADEP</b> <i>EGLL</i> <b>-ADES</b> <i>LMML</i> <b>-EOBD</b> <i>080901</i> <b>-EOBT</b> <i>1030</i> <b>-ORGRTE</b> <i>MID UA1 RBT UG32 TOP UA1 ELB UA12 PAL UA18 EKOLA A18 MLQ</i> <b>-PTOT</b> <i>1230</i> <b>-RRTEREF</b> <i>EGLLLMML2</i> <b>-NEW RTE</b> <i>MID A1 BOGNA UA1 RBT UG32 TOP UA1 ELB UA12 UA18 EKOLA A18 MLG DCT MLQ</i> <b>-RESPBY</b> <i>0730</i> <b>-REASON</b> <i>OUTREG</i> <b>-COMMENT</b> <i>PURPOSE IS ATFCM</i> <b>-TAXITIME</b> <i>0020</i> <b>-TOT LIMIT -VALPERIOD</b> <i>200809011050200809011430</i>	<b>Example 4</b>  Same as above. The flight has not yet received a slot and is proposed a route with no regulation active at the time of the proposal.	The possible combination of optional fields is as follows :  <div style="display: flex; justify-content: space-between;"> <div> <b>-CTOT -NEWCTOT</b>  <b>-CTOT -REASON</b>  <b>-PTOT -NEWPTOT</b>  <b>-PTOT -REASON</b>  <b>-PTOT -NEWCTOT</b>  <b>-NEWCTOT</b>  <b>-NEWPTOT</b> </div> <div>       only only           </div> </div>

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SLOT RELATED MESSAGES - ORIGINATED BY THE NM		
MESSAGE & <i>example</i>	DEFINITION	PROCEDURE & ACTION
<b>-TITLE RRP</b> (5) <b>-ARCID</b> GRV090A <b>-IFPLID</b> AT00002136 <b>-ADEP</b> LGKV <b>-ADES</b> LGAL <b>-EOBD</b> 140204 <b>-EOBT</b> 0525 <b>-ORGRTE</b> N0250F090 IDILO <b>-RRTEREF</b> LGKVLGALG3 <b>-NEW RTE</b> N0250F090 SOSUS1A SOSUS <b>G12</b> IDILO IDILO1A <b>-RESPBY</b> 1305 <b>-REASON</b> OUTREG <b>-COMMENT</b> PURPOSE IS FLIGHT EFFICIENCY <b>-TAXITIME</b> 0005 <b>-TOTLIMIT -VALPERIOD</b> 201402040530 201402040930	<b>Example 5</b>  Flight which is not regulated receives a new route with no regulation active at the time of the proposal.	This issue follows a what-if reroute and 'apply' made at the NM. The AO who wishes to benefit from the offer shall consequently modify its flight plan either with a CHG or a CNL and refile This should be received before the RESPBY time.



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# ATFCM OPERATIONS MANUAL

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SLOT RELATED MESSAGES - ORIGINATED BY THE NM		
MESSAGE & <i>example</i>	DEFINITION	PROCEDURE & ACTION
<b>-TITLE RRP</b> (6) <b>-ARCID</b> GRV090A <b>-IFPLID</b> AT00002136 <b>-ADEP</b> LGKV <b>-ADES</b> LGAL <b>-EOBD</b> 140204 <b>-EOBT</b> 0525 <b>-ORGRTE</b> N0250F090 IDILO <b>-RRTEREF</b> LGKVLGALG3 <b>-NEW RTE</b> N0250F090 SOSUS1A SOSUS <b>G12</b> IDILO IDILO1A <b>-RESPBY</b> 1305 <b>-REASON</b> OUTREG <b>-COMMENT</b> PURPOSE IS ATFCM <b>-TAXITIME</b> 0005 <b>-TOTLIMIT - VALPERIOD</b> 201402040530 201402040930	<b>Example 6</b>  Flight which is not regulated receives a more efficient route proposed route with no regulation active at the time of the proposal.	This issue follows a FLIGHT EFFICIENCY PROPOSAL made at the NM. The AO who wishes to benefit from the offer shall consequently modify its flight plan either with a CHG or a CNL and refile This should be received before the RESPBY time.

## ATFCM OPERATIONS MANUAL

## SLOT RELATED MESSAGES - ORIGINATED BY THE NM

MESSAGE & <i>example</i>	DEFINITION	PROCEDURE & ACTION
<b>-TITLE RRN</b> (1) <b>-ARCID</b> <i>AMC101</i> <b>-IFPLID</b> <i>AA12345678</i> <b>-ADEP</b> <i>EGLL</i> <b>-ADES</b> <i>LMML</i> <b>-EOBD</b> <i>080901</i> <b>-EOBT</b> <i>1030</i> <b>-ORGRTE</b> <i>MID UA1 RBT UG32 TOP UA1 ELB UA12 PAL UA18 EKOLA A18 MLQ</i> <b>-CTOT</b> <i>1230</i> <b>-RRTEREF</b> <i>EGLLLMML1</i> <b>-NEW RTE</b> <i>MID UA1 RBT UG32 BAJKO UA21 NIZ UA2 AJO UA9 CAR UB21 PANTA B21 MLQ</i> <b>-NEWCTOT</b> <i>1105</i> <b>-RESPBY</b> <i>0900</i> <b>-COMMENT</b> <i>PURPOSE IS AOWIR</i> <b>-TAXITIME</b> <i>0020</i> <b>-TOT LIMIT -VALPERIOD</b> <i>200809011050200809011450</i>	<b>RRN: REROUTEING NOTIFICATION MESSAGE</b>  This message is sent to an AO to notify a rerouteing triggered through the NM Client Application.  <b>Example 1</b>  The flight had already received a CTOT corresponding to its original route (ORGRTE). A new CTOT is offered provided that the flight is refiled along the proposed new route (NEW RTE).	The RRN message is issued in case of an acceptance of the rerouteing with option 'CNL original FPL', book slot and flight plan refile by the AO via SITA / AFTN.  The flight plan is cancelled in the NM system and a new slot may be booked :  The IFPS proceeds exactly as if a cancel (CNL) message had been submitted by the user. SLC are distributed with the FPL cancellations. RRN messages are sent by ETFMS to AO addresses in accordance with the addressing rules in the ATFCM Users Manual and, in addition, to the address associated to the NM Client Application having made the Apply.

## ATFCM OPERATIONS MANUAL

## SLOT RELATED MESSAGES - ORIGINATED BY THE NM

MESSAGE & <i>example</i>	DEFINITION	PROCEDURE & ACTION
<b>-TITLE RRN</b> (2) <b>-ARCID</b> AMC101 <b>-IFPLID</b> AA12345678 <b>-ADEP</b> EGLL <b>-ADES</b> LMML <b>-EOBD</b> 080901 <b>-EOBT</b> 1030 <b>-ORGRTE</b> MID UA1 RBT UG32 TOP UA1 ELB UA12 PAL UA18 EKOLA A18 MLQ <b>-CTOT</b> 1230 <b>-RRTEREF</b> ELLLLMML2 <b>-NEW RTE</b> MID A1 BOGNA UA1 RBT UG32 TOP UA1 ELB UA12 UA18 EKOLA A18 MLG DCT MLQ <b>-RESPBY</b> 0900 <b>-REASON</b> OUTREG <b>-COMMENT</b> PURPOSE IS AOWIR <b>-TAXITIME</b> 0020 <b>-TOT LIMIT -VALPERIOD</b> 200809011050200809011450	<p><b>Example 2</b></p> <p>This flight is rerouted from a route which is crossing a regulated area(s) to a new route without a regulation.</p> <p>The REASON OUTREG indicates that there is no slot required, for that route.</p>	<p>This message includes the new route description and e.g. :</p> <p><b>-NEWCTOT</b> 1105 the new slot calculation result  <b>-REASON</b> OUTREG when the new route is not subject to ATFCM regulation or  <b>The user is now expected to file a new flight plan in order to match the new conditions. This shall be received before RESPBY time.</b></p> <p>The route should be fully consistent with the one provided within the RRN message and also displayed on the NM Client Application.  Then SAM or FLS messages will be transmitted as appropriate.  The possible combination of optional fields is as follows :</p> <p><b>-CTOT -NEWCTOT</b>  <b>-CTOT -REASON</b>  <b>-NEWCTOT</b> only</p>
<b>-TITLE</b> ERR <b>-ARCID</b> AMC101 <b>-FILTIM</b> 0915 <b>-ORGMMSG</b> SMM <b>-REASON</b> SYNTAX ERROR	<p><b>ERR: ERROR MESSAGE</b></p> <p>The error message indicates that an error has been found in a message previously received by ETFMS. The erroneous field or the reason for rejection may be indicated.</p>	<p>This message is sent by ETFMS when a message is received but its syntax is incorrect and cannot be processed.</p> <p>It can also be sent when a message is received with a correct syntax but the message cannot be correlated to an existing flight plan or the message is not relevant (e.g. an EOBT earlier than the previous one).  AOs / ATS resend the correct message.</p>

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**22.2. SLOT RELATED MESSAGES – ORIGINATED BY AOS / ATS**

SLOT RELATED MESSAGES - ORIGINATED BY AOs / ATS		
ATFCM messages originated by AOs / ATS may include the IFPLID, preferably only if generated automatically.		
MESSAGE & example	DEFINITION	PROCEDURE & ACTION
<b>-TITLE SMM</b> <b>-ARCID AMC101</b> <b>-ADEP EGLL</b> <b>-ADES LMML</b> <b>-EOBD 080901</b> <b>-EOBT 0945</b> <b>-CTOT 1020</b>	<p><b><u>SMM</u>: SLOT MISSED MESSAGE</b></p> <p>This message is originated by an AO when a slot time given in the <b>SAM</b> cannot be achieved but where a new EOBT cannot be supplied.</p>	<p>NM cancels the issued CTOT and issues the suspension with an FLS message. The flight is suspended until :</p> <p>AOs / ATS will advise new EOBT (when known) via a Change (<b>CHG</b>), Delay (<b>DLA</b>) or CNL and refile into IFPS.</p> <p>The NM responds with an SAM or a DES.</p>
<b>-TITLE SPA</b> <b>-ARCID AMC101</b> <b>-ADEP EGLL</b> <b>-ADES LMML</b> <b>-EOBT 0945</b> <b>-NEWCTOT 1010</b>	<p><b><u>SPA</u>: SLOT IMPROVEMENT PROPOSAL ACCEPTANCE MESSAGE</b></p> <p>This message is a positive response to a Slot Improvement Proposal (<b>SIP</b>) message.</p>	<p>NM confirms thereafter NEWCTOT with an SRM if an SPA is received within the RESPBY time.</p> <p>If an <b>SPA</b> outside RESPBY time or if parameters of restriction have changed, an error message will be sent stating the REASON i.e. VOID. AOs / ATC comply with the NEWCTOT or SRM.</p>
<b>-TITLE SRJ</b> <b>-ARCID AMC101</b> <b>-ADEP EGLL</b> <b>-ADES LMML</b> <b>-EOBT 0945</b> <b>-REJCTOT 1010</b>	<p><b><u>SRJ</u>: SLOT PROPOSAL REJECTION MESSAGE</b></p> <p>This message is confirmation that an AO cannot comply with a Slot Improvement Proposal (<b>SIP</b>) message.</p>	<p>Use of this message will allow the SIP slot to be released back into the system for potential use elsewhere.</p> <p>The AO keeps the original slot received before the <b>SIP</b>.</p>
<b>-TITLE RFI</b> <b>-ARCID AMC101</b> <b>-ADEP EGLL</b> <b>-ADES LMML</b> <b>-EOBD 080901</b> <b>-EOBT 1030</b>	<p><b><u>RFI</u>: RFI MESSAGE</b></p> <p>The RFI message is used by the AO to change the flight's readiness status from SWM (RFI NO) to RFI. The RFI status of the flight will be set to YES.</p>	<p>The AO operating a flight having its RFI status set to YES will receive an SRM if any improvement is possible. ATC will also receive the same message.</p> <p>AO and ATC shall comply with the NEWCTOT.</p>
<b>-TITLE SWM</b> <b>-ARCID AMC101</b> <b>-ADEP EGLL</b> <b>-ADES LMML</b> <b>-EOBD 080901</b> <b>-EOBT 1030</b>	<p><b><u>SWM</u>: SIP WANTED MESSAGE</b></p> <p>The SWM message is used by the AO to indicate that it cannot accept SRM when an improvement is possible but wants to be in a position to refuse an improvement. The RFI status of the flight will be set to NO.</p>	<p>The AO operating a flight having its RFI status set to NO will receive a SIP if any improvement is possible.</p> <p>The AO will accept the proposal with an SPA or reject it with an SRJ.</p>

## ATFCM OPERATIONS MANUAL

MESSAGE & <i>example</i>	DEFINITION	PROCEDURE & ACTION
<b>-TITLE REA</b> <b>-ARCID ABC101</b> <b>-ADEP EGLL</b> <b>-ADES LMML</b> <b>-EOBD 080901</b> <b>-EOBT 1030</b> <b>-MINLINEUP 0005</b>	<p><b>REA: READY MESSAGE</b></p> <p>For flights having already received their slot and being in a situation to depart before their CTOT (doors closed and ready to depart), the AO may ask local ATC to send a Ready (REA) message. In the REA local ATC may also include a MINLINEUP time, to indicate the minimum time needed for that flight to get from its position to take-off.</p>	<p>Only ATC / ATFCM units can send a REA message.</p> <p><b>REA</b> may be sent between EOBT minus 15 minutes and the CTOT of the flight. When the REA is filed before the EOBT, the flight is considered as having a new EOBT at this filing time and the MINLINEUP as a revised taxi time.</p> <p>The MINLINEUP is constrained in the range [0 min, 90 min]</p> <p>If an improvement is possible AO and ATC will receive an SRM.</p>
<b>-TITLE FCM (1)</b> <b>-ARCID AMC101</b> <b>-ADEP EGLL</b> <b>-ADES LMML</b> <b>-EOBT 0945</b> <b>-RVR 200</b>	<p><b>FCM: FLIGHT CONFIRMATION MESSAGE</b></p> <p>An AO indicates to ETFMS the RVR capability of a flight with an EOBT in the future.</p> <p>A suspended flight with an EOBT in the past or an obsolete EOBT must first be amended by a DLA and then confirmed by an FCM, which includes the flight's RVR capability. When the route has also to be changed it must be amended by a CHG, which will include an amended route and the flight's RVR capability.</p>	<p>An AO may send an <b>FCM</b> in response to a selective AIM or to an individual FLS message to provide the RVR operating minima which should be given in metres. When the flight's RVR capability is requested, the flight is kept suspended within ETFMS until this RVR capability is provided by CHG or FCM message or until the NM releases the RVR requirement or until a DLA / CHG message pushes the flight outside the period requesting the RVR.</p>
<b>-TITLE FCM (2)</b> <b>-ARCID AMC101</b> <b>-ADEP EGLL</b> <b>-ADES LMML</b> <b>-EOBT 0945</b> <b>-REGUL LMMLA01</b>	<p><b>FCM: FLIGHT CONFIRMATION MESSAGE</b></p> <p>An AO indicates to ETFMS that a flight with an EOBT in the future is now confirmed for the regulation(s) provided in this FCM.</p> <p>A suspended flight with an EOBT in the past or an obsolete EOBT must first be amended by a DLA and then confirmed by an FCM. When the route has also to be changed it must first be amended by a CHG and then confirmed by an FCM.</p>	<p>An AO may send an <b>FCM</b> in response to a selective AIM or to an individual FLS message.</p> <p>When a confirmation is requested, the flight is kept suspended within ETFMS until FCM message(s) confirm the flight in all affecting regulation(s) requesting a confirmation or until the NM releases the confirmation requirement or until a DLA / CHG message pushes the flight outside the period requesting the confirmation.</p>

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<b>-TITLE FCM</b> <b>-ARCID</b> <i>AMC101</i> <b>-ADEP</b> <i>EGLL</i> <b>-ADES</b> <i>LMML</i> <b>-EOBT</b> <i>0945</i> <b>-RVR</b> <i>200</i> <b>-REGUL</b> <i>LMMLA01</i>	<p>(3) <b>FCM: FLIGHT CONFIRMATION MESSAGE</b></p> <p>An AO indicates to ETFMS that a flight with an EOBT in the future is now confirmed for the regulation(s) provided in this FCM. The message may include the flight's RVR capability.</p> <p>A suspended flight with an EOBT in the past or an obsolete EOBT must first be amended by a DLA and then confirmed by an FCM. When the route has also to be changed it must first be amended by a CHG and then confirmed by an FCM.</p>	<p>An AO may send an <b>FCM</b> in response to a selective AIM or to an individual FLS message. If so required, it includes the RVR operating minima which should be given in metres.</p> <p>When both a confirmation and a flight's RVR capability are requested, the flight is kept suspended within ETFMS until FCM message(s) confirm the flight in all affecting regulation(s) requesting a confirmation and provide the flight's RVR capability or until the NM releases the confirmation and the RVR requirement or until a DLA / CHG message pushes the flight outside the period requesting the confirmation and the RVR.</p>
MESSAGE & example	DEFINITION	PROCEDURE & ACTION
<b>-TITLE RJT</b> <b>-ARCID</b> <i>AMC101</i> <b>-ADEP</b> <i>EGLL</i> <b>-EOBT</b> <i>0945</i> <b>-ADES</b> <i>LMML</i> <b>-RRTEREF</b> <i>EGLLLMML1</i>	<p><b>RJT: REROUTEING REJECTION MESSAGE</b></p> <p>Used by an AO to reject an <b>RRP</b> message.</p>	<p>Use of the <b>RJT</b> will enable the slot potentially associated with the RRP, to be released back into the system for possible use elsewhere.</p>

Network Manager

**EUROCONTROL**


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**ATFCM OPERATIONS MANUAL**

**22.3. PRIMARY FIELD COMPOSITION OF TACTICAL ATFCM MESSAGES**

PRIMARY FIELD COMPOSITION OF TACTICAL ATFCM MESSAGES EXCHANGE (1)														
Message Field	SAM	SRM	SLC	SIP	FLS	DES	RRP	RRN	ERR	SMM	SPA	SRJ	FCM	RJT
-TITLE	1	1	1	1	1	1	1	1	1	1	1	1	1	1
-IFPLID	1	1	1	1	1	1	1	1	(1)	(1)	(1)	(1)	(1)	(1)
-ADDR	(1)	(1)	(1)	(1)	(1)	(1)								
-ARCID	1	1	1	1	1	1	1	1	(1)	1	1	1	1	1
-ADEP	1	1	1	1	1	1	1	1	(1)	1	1	1	1	1
-EOBD	1	1	1	1	1	1	1	1	(1)	(1)	(1)	(1)	(1)	(1)
-EOBT	1	1	1	1	1	1	1	1	(1)	1	1	1	1	1
-IOBD	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)
-IOBT	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)
-CTOT	1			1			(1)	(1)		1				
-NEWCTOT		1		1			(1)	(1)			1			
-NEWPTOT							(1)	(1)						
-REJCTOT												1		
-REASON	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)					
-ADES	1	1	1	1	1	1	1	1	(1)	1	1	1	1	1
-REGUL	1<	1<		1<	0<								0<	
-ORGRTE							1	1						
-PTOT					(1)		(1)	(1)						
-NEW RTE							1	1						
-RRTEREF							(1)	1						(1)
-RVR	(1)	(1)			(1)								(1)	
-RESPBY				1	(1)		1	1						
-ORGMSG									(1)					
-FILTIM									1					
-ERRFIELD														
-MINLINEUP														
-COMMENT	0<	0<	0<	0<	0<	0<	1	1	0<					
-TAXITIME	1	1	1	1	1	1	1	1	(1)					
-REGCAUSE	1	1			(1)									
-OBTLIMIT - VALPERIOD							1	1						
-TTO	1	1												

'1' means: exactly one field of the specified type is required  
 '(1)' means : a single optional field of the specified type is allowed

a 'blank cell' means: this field is not in a message  
 'n<' means: n or more occurrences of this field can appear in a message

**Note:** Refer to the IFPS Users Manual for the format of FLS message used in flight plan.

## ATFCM OPERATIONS MANUAL

PRIMARY FIELD COMPOSITION OF TACTICAL ATFCM MESSAGES EXCHANGE (2)								
Message Field	SWM	RFI	REA					
-TITLE	1	1	1					
-ADDR								
-ADEP	1	1	1					
-ADES	1	1	1					
-ARCID	1	1	1					
-COMMENT								
-CTOT								
-EOBD	(1)	(1)	(1)					
-EOBT	1	1	1					
-ERRFIELD								
-FILTIM								
-IFPLID	(1)	(1)	(1)					
-IOBD	(1)	(1)						
-IOBT	(1)	(1)						
-MINLINEUP			(1)					
-NEWCTOT								
-NEWPTOT								
-NEW RTE								
-ORGMSG								
-ORG RTE								
-PTOT								
-REASON								
-REGCAUSE								
-REGUL								
-REJCTOT								
-RESPBY								
-RRTEREF								
-RVR								

'1' means: exactly one field of the specified type is required  
 '(1)' means: a single optional field of the specified type is allowed

a 'blank cell' means: this field is not in a message  
 'n<' means: n or more occurrences of this field can appear in a message



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