



**Network Manager**  
nominated by  
the European Commission



# European Route Network Improvement Plan

## **PART 4** **RAD Users Manual**

European Network Operations Plan 2013-2015

Edition June 2015



Network Manager  
nominated by  
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# **European Route Network Improvement Plan (ERNIP)**

## **Part 4**

### **ROUTE AVAILABILITY DOCUMENT USERS MANUAL**

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<b>Abstract</b>			
<p>The need to establish improved links between the processes of Airspace Design and Airspace Utilisation in coordination with the Operational Stakeholders is one of the top priorities for the Network Manager.</p> <p>To fulfil this requirement a multidisciplinary team had been established in support of Operational Stakeholders dealing with all aspects of the Route Availability Document (RAD) from policy to implementation and review, namely the "NM RAD Team".</p> <p>This document details the roles and responsibilities of the NM RAD Team as well as the relationships with all other responsible bodies involved in the entire RAD process.</p>			
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0.2	19.04.2012	Draft RNDSG/76 agreement	All
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1.1	21.05.2012	Released Issue NDOP/2 and NMB/4 Approval	All
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## EXECUTIVE SUMMARY

The Route Availability Document (RAD) is created based on COMMISSION REGULATION (EU) No 255/2010 of 25 March 2010 laying down common rules on air traffic flow management where in accordance with Article 4 - General obligations of Member States, paragraph 4 where a common reference document containing the policies, procedures and description for route and traffic orientation shall be created.

The RAD is also created based on COMMISSION REGULATION (EU) No 677/2011 of 7 July 2011 laying down detailed rules for the implementation of air traffic management (ATM) network functions and amending Regulation (EU) No 691/2010, Annex I - The European Route Network Design (ERND) Function, Part B - Planning principle 5(d) stating that the European Route Network Improvement Plan (ERNIP) shall include route network and free route airspace utilisation rules and availability.

The RAD is designed as a part of the Network Manager Air Traffic Flow and Capacity Management (ATFCM) operation.

The need to establish improved links between the processes of Airspace Design and Airspace Utilisation in coordination with the Operational Stakeholders is one of the top priorities for the Network Manager.

To fulfil this requirement a multidisciplinary team had been established in support of Operational Stakeholders dealing with all aspects of the RAD from policy to implementation and review namely "NM RAD Team".

The NM RAD Team, in close coordination with all the Operational Stakeholders, is responsible for preparing of a common RAD, collating, coordinating, validating and publishing it.



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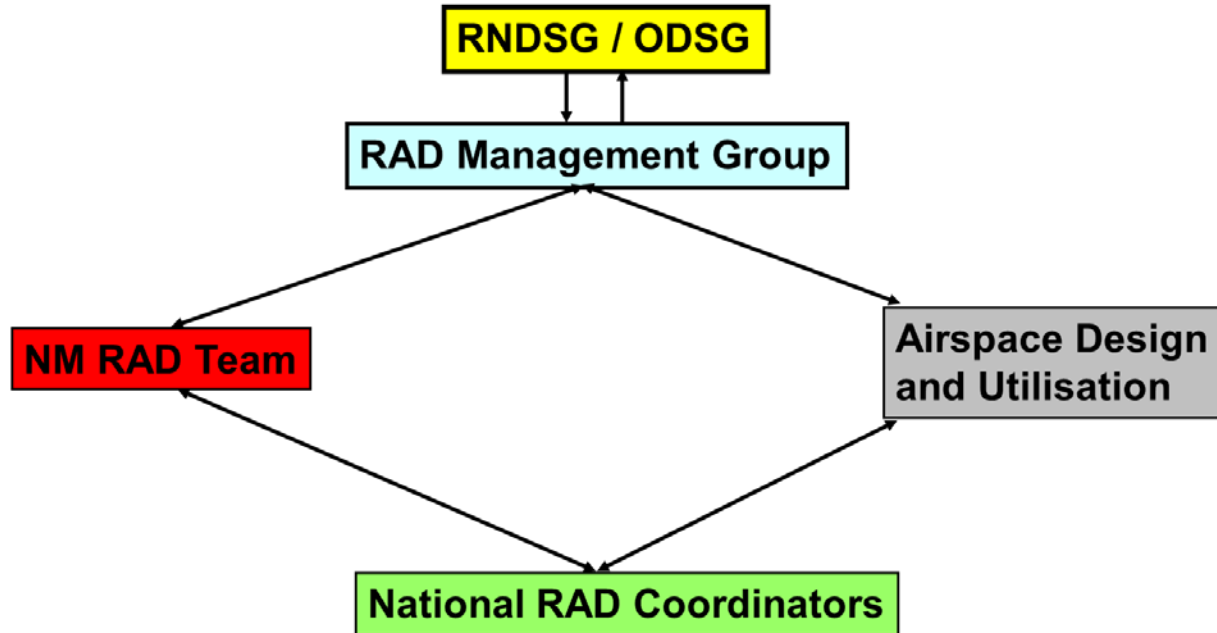
# 1. RAD general issues

## 1.1 Scope

- 1.1.1. The RAD is a common reference document containing the policies, procedures and description for route and traffic orientation. It also includes route network and free route airspace utilisation rules and availability.
- 1.1.2. The RAD is also an ATFCM tool that is designed as a sole-source flight-planning document, which integrates both structural and ATFCM requirements, geographically and vertically.
- 1.1.3. The RAD is updated each AIRAC cycle following a structured standard process of:
  - a) Requirement;
  - b) Validation;
  - c) Publication by the Network Manager in cooperation/coordination with all Operational Stakeholders.
- 1.1.4. The RAD is only applicable to the IFR part of the Flight Plan.
- 1.1.5. The RAD document consists of:
  - a) General description;
  - b) 6 (six) Appendices:
    - Appendix 2 - Area Definition;
    - Appendix 3 - Flight Level Capping limits;
    - Appendix 4 - En-route DCT limits;
    - Appendix 5 - Airport Connectivity;
    - Appendix 6 - Flight Profile Restrictions;
    - Appendix 7 - FUA Restrictions.
  - c) a Network wide Pan-European Annex;
  - d) if necessary, a separate Annex for Special events, containing restrictions of temporary nature (i.e. European/World Sport Events, Olympic Games, large scale Military exercises, economic forums ...).
- 1.1.6. The RAD may be suspended, or temporarily relaxed, in cases where it has an abnormally adverse impact upon the traffic flows. This action will always be co-ordinated through the cooperative decision making (CDM) process between the Network Manager and its Operational Stakeholders.
- 1.1.7. Amendments will be published by the NM RAD Team as follows:
  - a) 28 days in advance of the relevant AIRAC cycle;
  - b) Amendments will be highlighted in **RED BOLD** lettering and will be annotated by abbreviation NEW / AMD;
  - c) Restrictions that have been removed will be annotated by abbreviation DEL;
  - d) "Last minute" changes:
    - are changes required due to exceptional circumstances and/or only when they have a significant impact on operational requirements;
    - shall be:
      - announced by the NRCs as ordinary amended (AMD / DEL) or new RAD requirements (NEW);
      - exceptionally annotated as such;
      - sent via e-mail to the NM RAD Team in accordance with ERNIP Part 4;
    - will be promulgated on the NM NOP portal via the "Increment File".

## 1.2 Control and management of the RAD

- 1.2.1. The control and management of the RAD is carried out through a process described below:



*Picture 1 : RAD management*

- 1.2.2. The NM RAD Team is responsible for the maintenance and publication of the RAD; this is co-ordinated through liaison with the National/ANSP RAD Coordinators (NRCs) on an AIRAC cycle basis. Development of the RAD is through the RAD Management Group (RMG) established to monitor the evolution of the RAD; the NRCs are contacted if and when necessary on matters of procedure.
- 1.2.3. The final content of any amendment to the RAD shall be positively agreed between the NM RAD Team and State/FAB/ANSP concerned.

## 1.3 Requirements

- 1.3.1. The RAD provides a single fully integrated and co-ordinated list of restrictions and requirements for all areas where the NM provides ATFCM services.
- 1.3.2. Exceptions to the RAD are not envisaged under normal conditions, however, temporary changes to the RAD restrictions due to exceptional circumstances or operational necessity shall be published by AIM giving details of the traffic affected, the period of activation and, where practical, the corresponding routings.
- 1.3.3. The RAD document shall also be available via the NM NOP portal.

- 1.3.4. The structure of each restriction is hierarchical and specific and has been arranged to facilitate parsing of the information into computer systems.
- 1.3.5. For the usage of the restricted object (ATS route segment, point, NAVAID, airspace definition - ATC Unit, DCT, etc.) there are 3 (three) main types of restrictions:
- Not available for ...**  
Flight planning via restricted object is forbidden for described flow(s).
  - Only available for ...**  
Flight planning via restricted object is allowed exclusively for described flow(s).
  - Compulsory for ...**  
Flight planning via restricted object is the only valid option for described flow(s).
- 1.3.6. For the combination of elements that define the flow of traffic, there are 2 (two) types of restrictions - inclusive and exclusive:
- INCLUSIVE restriction** - traffic must meet **ALL** of the conditions to be subject to the restriction. The implicit logical operator between the listed conditions is an "AND" - Logical Conjunction.

Fictitious Example

Airway	From - To	Utilization
UL1	AAAAA - BBBBB	Not available or Only available or Compulsory for traffic Above FL275 With DEP ... With ARR ...

- EXCLUSIVE restriction** - traffic only needs to meet **ONE** of the numbered sub-conditions to be subject to the restriction. The implicit logical operator between the numbered conditions is an "OR" - Logical Disjunction.

Fictitious Example

Airway	From - To	Utilization
UL1	AAAAA - BBBBB	Not available or Only available or Compulsory for traffic ARR ..... Via ... Except a. ARR ..... b. DEP..... Via ... with .....

- 1.3.7. Usage of combinations and terms in utilization expression is defined in ERNIP Part 1, Chapter 8, paragraph 8.3.2.

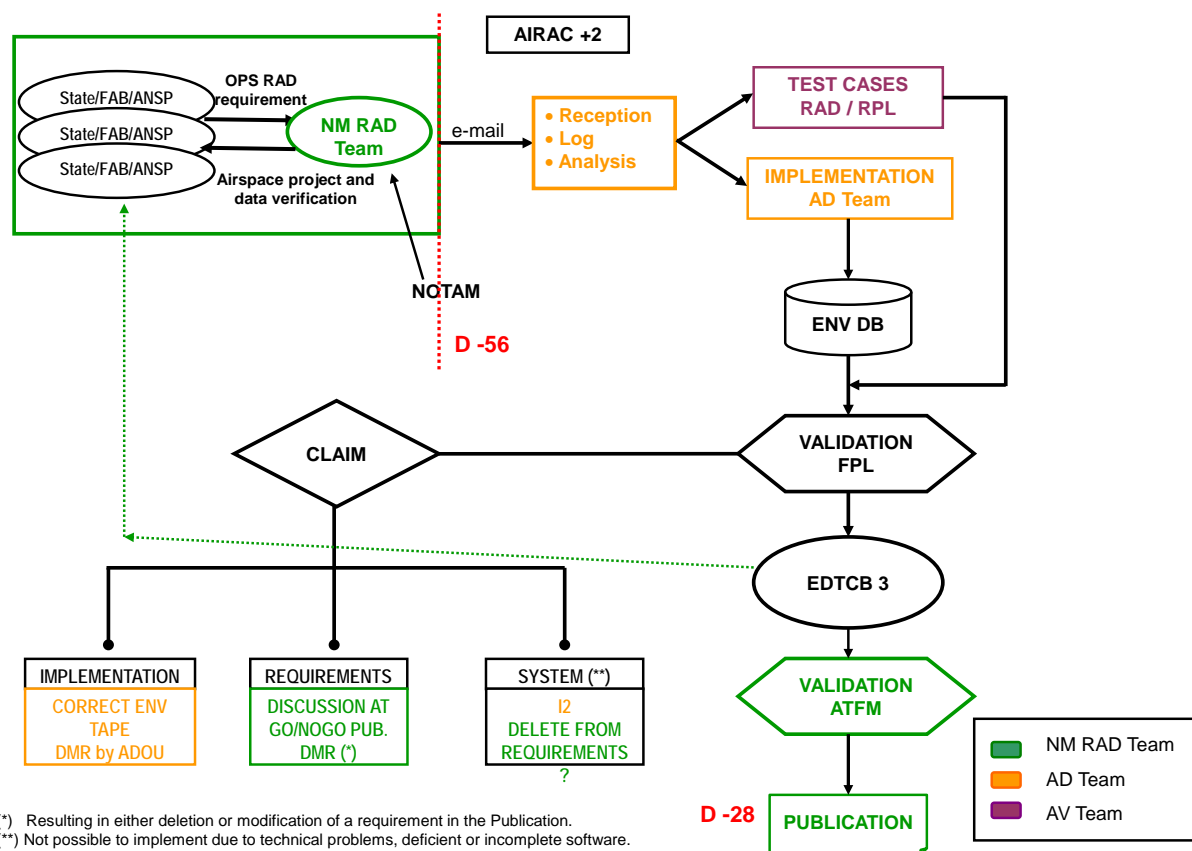
## 1.4 Creation of the RAD

### 1.4.1. Strategic Phase

1.4.1.1. The following diagram gives a flow presentation of the process of creation of the RAD, starting with the box on the top left and working through until publication.

1.4.1.2. The NM RAD Team sends out a reminder to the NRCs at AIRAC -63 days (D -63) advising them of 1 (one) week to RAD Cut-off. The AIRAC -56 days (D -56) line depicts the RAD Cut-off date.

1.4.1.3. Inputs for RAD amendments are accepted by e-mail and then transcribed into the respective Appendix/Annex that has been prepared for the relevant AIRAC cycle.

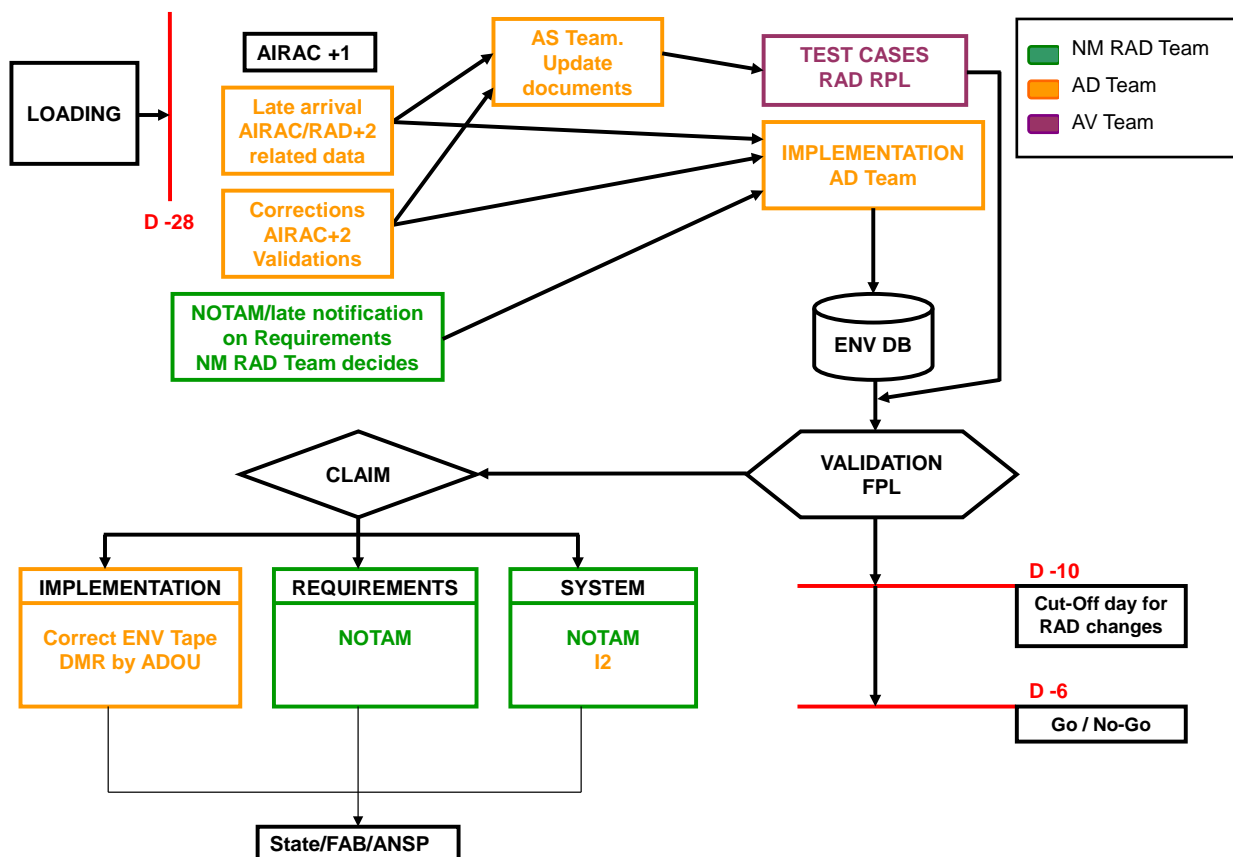


Picture 2 : RAD Strategic Phase

1.4.1.4. Once an Appendix/Annex has been completed, the new restrictions are taken by the Network Operations Airspace Validation Team (AV Team) and new/existing FPLs are used for testing the efficacy of the changed restrictions. Concurrently, the requirements for change are sent to the Network Operations Airspace Data Team (implementation AD Team) for creation/amendment of the restriction in the ENV database.

- 1.4.1.5. Upon receipt of supporting AIS data, and only then, the revised/new restrictions can be checked against the revised airspace by the use of the FPLs created by the Network Operations RPL Validation Team.
- 1.4.1.6. If inconsistencies are discovered, then claims are raised accordingly and allocated to one of the three categories (Implementation/Requirements/System) for further handling.
- 1.4.1.7. At the EDTCB3 (Environment Data Transfer Control Board) meeting all unsolved RAD errors are discussed and appropriate action is taken prior to publication.
- 1.4.1.8. The restrictions are then assessed for impact through the ATFM Validation process. Where a restriction is deemed to be particularly punitive or is affecting a disproportionate amount of traffic, it is referred back to the State/FAB/ANSP of origin.
- 1.4.1.9. At AIRAC -28 days (D -28), the RAD is published via e-mail to the NRCs and promulgated on the NM NOP portal.

#### 1.4.2. Pre-Operational Phase

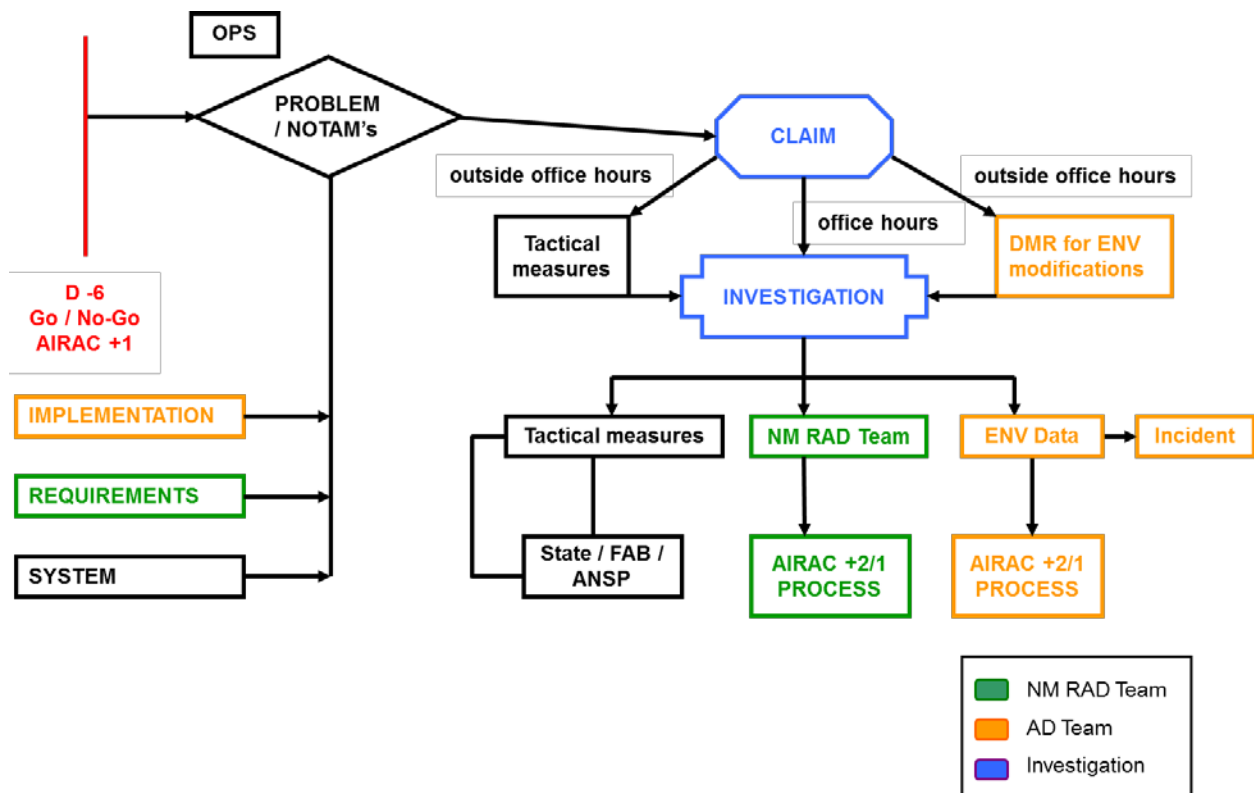


**Picture 3 :** RAD Pre-Operational Phase

- 1.4.2.1. After AIRAC -28 days (D -28) the RAD process continues into the validation and assessment phase. “Last minute” changes are implemented where possible; however once past AIRAC -28 days (D -28) this process is very cumbersome for all recipients.

- 1.4.2.2. As the AIS data is received, the AD Team update the relevant AIPs etc. within the ENV Library.
- 1.4.2.3. At this stage a more comprehensive Validation can be carried out by cross referring the RAD with the received AIS data.
- 1.4.2.4. The same process is completed as described in the previous diagram, with creation/amendment of FPLs by the NOS RPL Validation Team.
- 1.4.2.5. At AIRAC -10 days (D -10) the final cut-off is effective, beyond which no further changes can be accepted in time to change the ENV database.
- 1.4.2.6. Final cross checking of the ENV data is carried out between AIRAC -10 days (D -10) and AIRAC -6 days (D -6) at which point a go/no go decision is made for the ENV tape.
- 1.4.2.7. "Increment File" publication technology  
If all the NM RAD Team members are allowed/trained to publish via the "Increment File":  
  - the DMR will be created after the publication in the "Increment File";
OR  
In case that nobody from the NM RAD Team present and an urgent LIVE RAD update is required:  
  - RAD restriction will be implemented, only after approval of the "COM" (Current OPS Manager) and the NM RAD Team and both IFPS are made aware by an e-mail.

#### 1.4.3. Operational Phase



**Picture 4 :** *RAD Operational Phase*

- 1.4.3.1. After AIRAC -6 days (D -6) the RAD process enters into the Operational phase where any errors are notified to the AO community via the “Increment File”.
- 1.4.3.2. A Claim is raised and the method of resolution is determined outside office hours by the Airspace Data / IFPS Supervisor / NOS Team Leader and passed to the Investigation Team, or within office hours through the Investigation Team, either: Tactical measures if the error/change is considered of vital operational importance; the NM RAD Team updates the respective document for the next available AIRAC date; or if it requires modification of the ENV data then a DMR is raised.

## **1.5 RAD Data Storage**

- 1.5.1 All files part of the RAD document shall be archived and stored by the NM RAD Team for the period of 10 (ten) years.
- 1.5.2 The first withdrawn RAD file will be replaced by latest none active RAD file.
- 1.5.3 The archived RAD data shall be stored either on internal NM RAD Team disk/s or on the NOP portal.



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## 2. RAD system processing

### 2.1. General issues

- 2.1.1. A restriction imposes a restrictive measure for a single flight or a flow of traffic consists of the following elements:
- The operational reason for this restriction;
  - As from which date is this restriction valid and during which parts of the week;
  - What is restricted?
  - Who is affected by this restriction?

### 2.2. IFPS Behaviour

- 2.2.1. Two types of flow restrictions exist within the IFPS for processing purposes:
- Hard Traffic Flow Restrictions;
  - Soft Traffic Flow Restrictions.

#### 2.2.2. Hard/Soft Traffic Flow Restriction

- 2.2.2.1. Where a flight plan violates a Hard Traffic Flow Restriction, that flight plan shall fail automatic processing and be passed for manual treatment by the IFPS staff. The IFPS staff shall normally try to contact the originator of the flight plan in order to find a solution to the problem. The invalidated message shall incorporate a clear error message (fictitious example below), which enables the IFPS staff or the message originator to correct the error.

#### Fictitious Example

ERROR PROF: RS: OFF MANDATORY ROUTE AT: HELEN LEVELS:F065..F999 REF:EHAPPENDIX5 STAR HELEN UNIT:EHAM6010A BETWEEN:LFPB EHAM
ERROR PROF: RS: ON FORBIDDEN ROUTE: NIK COA LEVELS: F000..F195 REF: SASKIL179 NIK UNIT: EH 2007A BETWEEN: LFPG EBAW

- 2.2.2.2. An error message issued when a flight plan violates a Traffic Flow Restriction shall contain the restriction identification. It shall indicate whether the flight plan is on a forbidden route or off a mandatory route. It shall also point as accurately as possible that part of the flight plan which has caused the error.
- 2.2.2.3. Where a flight plan violates a Soft Traffic Flow Restriction, the IFPS shall automatically insert the IFP Indicator 'IFP/ERROUTRAD' in Item 18 of that message. Soft Traffic Flow Restriction violations do not cause messages to fail automatic processing in the IFPS.
- 2.2.2.4. The Hard/Soft Traffic Flow Restriction are the last aspects to be checked against by the IFPS when processing a flight plan message, thus, for example, a route availability error may mask a Hard Traffic Flow Restriction during processing, and only on correction of the route availability error will the RAD restriction violation become apparent.
- 2.2.2.5. The content of RAD Column "Utilization" is considered by IFPS as Hard Traffic Flow Restriction while the content of RAD Column "Operational Goal" is supplementary and is not part of the processing.

### 2.2.3. IFPS Error Messages

#### Fictitious Examples

<b>[P12] PROF : RS: OFF MANDATORY ROUTE:&lt; &gt; LEVELS: &lt;FL_Band&gt; REF: &lt;Pub_Ref&gt; UNIT: &lt;Unit&gt; BETWEEN: &lt;Citypair&gt;</b>	
<b>Reason:</b> The route detailed in the submitted message does not comply with the specified mandatory RAD route.	<b>Requirements:</b> The filed route must comply with all relevant RAD restrictions.

<b>[P22] PROF : RS: ON FORBIDDEN ROUTE: &lt; &gt; LEVELS: &lt;FL_Band&gt; REF: &lt;Pub_Ref&gt; UNIT: &lt;Unit&gt; BETWEEN: &lt;Citypair&gt;</b>	
<b>Reason:</b> The route detailed in the submitted message follows the listed forbidden RAD route.	<b>Requirements:</b> The filed route must comply with all relevant RAD restrictions.

### 2.2.4. DCT Limitation Restriction

- 2.2.4.1. The general en-route direct (DCT) distance limitation (including cross-border DCT) is defined as a maximum distance, in nautical miles, that may be filed as a DCT segment. These will serve to invalidate those flight plans that contain DCT segments which are too long for a defined airspace when submitted to the IFPS for processing.
- 2.2.4.2. Individual DCT segments which are longer but nevertheless allowed may be defined as exceptions to this rule. Equally, there may be individual DCT segments that are shorter but not-allowed. These will be expressed as secondary restrictions to the primary restriction which reveals the actual DCT distance limit.
- 2.2.4.3. Secondary en-route DCT limitations can be defined to express deviating DCT limits on particular operational airspaces and/or specific flight types such as military.
- 2.2.4.4. Similarly aerodrome departure and arrival DCT distance limits will be defined in a restriction. Such a restriction will also contain any allowed DCTs that replace the old connecting point procedures. The IFPS shall consider these allowed DCTs when making the general terminal procedure processing.
- 2.2.4.5. The content of RAD document Column "Utilization" is considered by IFPS as Hard Traffic Flow Restriction while the content of RAD document Column "Operational Goal" is supplementary and is not part of the processing.

## 2.3. ETFMS Behaviour

### 2.3.1. Hard/Soft Traffic Flow Restriction

- 2.3.1.1. Where a route violates a Hard Traffic Flow Restriction it will become unusable for the AOWIR function.

### 2.3.2. DCT Limitations Restriction

- 2.3.2.1. Where a route violates a DCT limitation it will become unusable for the AOWIR function.

### **3. NM RAD Team**

#### **3.1 Organisation**

##### **3.1.1 Purpose**

3.1.1.1 The need to establish improved links between the processes of Airspace Design and Airspace Utilisation within the Network Manager Directorate (NMD) in coordination with the Operational Stakeholders is a top priority for the Network Operations Management Division (NOMD). Operational Stakeholders means the civil and military airspace users, civil and military air navigation service providers, airport operators, airport slot coordinators and operating organisations and any additional stakeholder groups considered relevant for the individual functions.

3.1.1.2 To fulfil the above requirement, in close coordination with all the Operational Stakeholders, a multidisciplinary team within the NOMD dealing with all aspects of RAD from policy to implementation and review has been established. It is named the "NM RAD Team".

##### **3.1.2 Role**

3.1.2.1 The NM RAD Team is responsible for preparing a common Route Availability reference Document (RAD), collating, coordinating, validating and publishing it.

3.1.2.2 The NM RAD Team is the central co-ordinator for the entire RAD process.

3.1.2.3 Considering that all policy and strategy aspects of the RAD are part of planning and the operation of the RAD part of operations, the NM RAD Team includes experts on the following Network Planning and Network Operations matters:

- a) Planning - Airspace Design and Future projects;
- b) Operations - Documentation maintenance, Database maintenance, Technical oversight, Implementation, Validation and Quality Control.

##### **3.1.3 Responsibilities**

3.1.3.1. The NM RAD Team shall:

- a) receive, verify and cross check the new RAD requirements (Appendixes or Annex);
- b) co-ordinate internally within NOMD the new RAD requirements - airspace design, IFPS, ENV etc.;
- c) co-ordinate externally with the Operational Stakeholders the new RAD requirements;
- d) refuse and/or remove any RAD requirement, if not properly co-ordinated until the coordination process is completed; this might include as an example request for a cross-border restriction/s not properly coordinated with the neighbouring State/FAB/ANSP or restriction that following the internal NM RAD validation (or in an impact assessment) is in conflict with another one (often in another State/FAB/ANSP);
- e) verify regularly (daily), co-ordinate and cross check the existing RAD content, together with liaison of cross-border restrictions;
- f) properly document and store the internal and external co-ordination and confirmation of the new RAD requirements;
- g) maintain the RAD documentation and database;

- h) notify the Operational Stakeholders of “one week to cut-off” at AIRAC -63 days (D -63);
- i) notify the Operational Stakeholders of “RAD Cut-off” at AIRAC -56 days (D -56);
- j) publish the RAD at AIRAC -28 days (D -28) via the NM NOP portal and/or e-mail to the Operational Stakeholders;
- k) review on a regular basis the RAD with the Operational Stakeholders;
- l) assess the activation/disabling of late changes to the RAD;
- m) maintain the RAD/AIRAC calendar;
- n) maintain all other documentation in relation to the RAD;
- o) liaison internally the creation/amendment of RAD restrictions;
- p) liaison internally and externally the efficacy of the RAD;
- q) update regularly the RAD part of the NM NOP portal;
- r) create and follow-up Change Requests to update restrictions model in future NM software releases (requirements emanating from RAD actors not covered by actual restrictions model).

#### 3.1.4 General administrative activities

##### 3.1.4.1. The NM RAD Team is also responsible for:

- a) participation at EDTCB meetings as follow-up of RAD validation (before publication) for AIRAC +2 days and RAD implementation for next AIRAC;
- b) participation at NOS meetings as a follow-up of tactical problems with existing restrictions;
- c) participation at morning briefings as a follow-up of tactical problems with existing restrictions;
- d) organisation, chairing and participation of/at the RMG meetings - strategic RAD evolution; definition of scope; terms and responsibilities; interaction with other Agency groups;
- e) organisation, chairing and participation of/at the cross-border RAD Review meetings - strategic co-ordination of new measures; negotiation of the Operational Stakeholders requests and problems with existing restrictions;
- f) participation at Strategic/Pre-Tactical teleconferences for Special Events/ Military exercises impacting RAD;
- g) participation at RND SG and ODSG meetings;
- h) participation at Regional Airspace and ATFCM Axis meetings, if required.

#### 3.1.5 Co-ordination

3.1.5.1. Any time during the entire RAD process full co-ordination between the designated members of the NM RAD Team shall be established.

3.1.5.2. The NM RAD Team shall meet at least once per month to discuss any planning and/or operations issues connected to the RAD.

#### 3.1.6 Supervision

3.1.6.1. The NM RAD Team is under supervision of the Head of Operations Planning Unit of NOMD.

3.1.6.2. All Network Planning and Network Operations issues connected to the entire RAD process shall be addressed to the RMG.

3.1.6.3. The NM RAD Team additionally to the established administrative reporting structure also reports to the RMG.

- 3.1.6.4. The NM RAD Team might propose RAD developments based on RMG role and responsibilities.

## **3.2 Role and Responsibilities of the NM RAD Team Members**

### **3.2.1 Network Planning**

- 3.2.1.1 The role of this/these member/s of the NM RAD Team is to provide assistance in verification of the RAD requirements versus the airspace design rules, airspace organisation and airspace utilisation in accordance with the relevant aeronautical publications. The relations between the RAD requirements and the future airspace projects shall also be part of this role.

- 3.2.1.2 The main tasks of Airspace Design and Future projects member are to:

- a) verify and cross check the new or revised RAD requirements compatibility with existing and planned airspace organisation/structure in accordance with the relevant aeronautical publications;
- b) verify and cross check the new or revised RAD requirements compatibility with established airspace design rules;
- c) verify and cross check the new or revised RAD requirements compatibility with declared during the airspace design meetings airspace utilisation;
- d) verify and cross check the operational goal of the new or revised RAD requirements connectivity with airspace design;
- e) assure proper distinction between available DCTs used for flight planning purposes and those used to avoid the established airspace design processes;
- f) assure that all available DCTs not applied to Free Route Airspace (FRA) are or will be included into the State's/FAB's airspace design plans;
- g) assure proper relations between the future RAD requirements and airspace projects;
- h) propose for refusal and/or removal any RAD requirement if not compatible with existing and planned airspace organisation/structure;
- i) propose for refusal and/or removal any RAD requirement overlapping the existing airspace organisation and its need not properly defined and justified;
- j) initiate internal or external airspace design coordination in case if proposed operational goal/s is/are connected to inappropriate airspace design;
- k) run mini ad-hoc simulations, loading traffic samples, using existing pre-validation systems.

### **3.2.2 Network Operations**

- 3.2.2.1 The role of this/these member/s of the NM RAD Team is to provide assistance during the entire RAD process in documentation, database maintenance, technical oversight, NOS implementation, validation and quality control.

- 3.2.2.2 The main tasks of Documentation and Database maintenance member are to:

- a) assure the internal NOMD/NOS coordination;
- b) support the Operational Stakeholders in:
  - co-ordination/negotiation - mitigating the RAD through negotiation;
  - helping to achieve their goal through the restriction model (or orientation towards other methods);
  - defining the RAD restrictions in a way for implementation into CACD;
- c) run mini ad-hoc simulations, loading traffic samples, using existing pre-validation systems;

- d) provide advice/technical expertise on questions regarding implementation on CACD/impact, on NM client systems etc.;
- e) update the RAD at AIRAC -56 days (D -56): RAD cut-off, preparation of the RAD for AIRAC + 2 tape;
- f) update/correct the RAD in co-ordination with the States//FABs/ANSPs (between AIRAC -56 days (D -56) and AIRAC -28 days (D -28));
- g) notify the Operational Stakeholders of the RAD closure for publication
- h) publish the RAD in the NM NOP portal.

3.2.2.3 The main tasks of Technical oversight member are to:

- a) be part of testing:
  - eventual participation on SAT/I sessions regarding restrictions for future releases;
  - creation of test cases and cross-check with client systems;
- b) be part of training:
  - preparing documents and giving training to CACD teams regarding upgrades/software releases/consequence of bugs reported by I2;
- c) be part of technical co-ordination:
  - submission of I2s regarding problems with restrictions in OPS;
  - eventual submission of Change Requests for faulty/new software requirements;
- d) do the Bug Tracing:
  - incorporation in RAD briefing sheet (info page for CACD);
  - any misworking/bug identified during testing or reported by other means;
- e) deal with other restrictions:
  - provide expertise for definition/discussion of other measures implemented through the restriction model that are not part of the RAD (PTRs; Aircraft Type restrictions on Terminal Procedures; closed for cruising levels; unavailable terminal procedures; aerodrome flight rules; CCAMS);
- f) participate in pre-validation exercises (follow-up of large scale A/S changes impacting RAD; software changes impacting restrictions - all restrictions);
- g) consider the follow-up of other technical documentation as SRD, FAB;
- h) support the ADT (provide restrictions/implementation/structure/referenced data expertise;
- i) redact the OPS Manual related to restrictions;
- j) assist to other areas of NM regarding RAD process evolutions (NOP project for RAD data provision).

3.2.2.4 The main tasks of OPS Implementation, Validation and Quality Control member are to:

- a) perform the actions to ensure the implementation/verification/Network validation and follow-up of the RAD;
- b) copy the draft RAD on proper drive to enable implementation by ADT and validation before publication (RAD for AIRAC +2 days);
- c) create the DMRs to implement the data;
- d) cross-check with CACD (EDTCB\_0) for AIRAC amendments/NIL publication received that will allow implementation of RAD data;
- e) analyse and action on defaults raised by CACD against RAD document (syntax);
- f) analyse and action on Claims raised by the Airspace Validation team against RAD document or RAD effect (semantics);
- g) publish the RAD (AIRAC -28 days (D -28)): copy the RAD on proper drive to enable implementation for Test Tape;

- h) create the DMRs to check of outstanding restrictions against what has already been implemented for AIRAC +2 days Tape;
- i) analyse and action on Claims raised by AV teams against RAD document or RAD effect (AIRAC -22 days (D -22) Test Tape produced by ADT);
- j) co-ordinate with the Operational Stakeholders for problem solving (incoherent restriction; restriction conflict with neighbours, etc.);
- k) create and follow-up of DMRs for solutions to the above;
- l) advise RPL on RAD updates resulting from Claims (Go/No-Go meeting);
- m) provide expertise during the RAD “Live Cycle” for CCM resolution about RAD implementation. Creation of DMRs for live updates;
- n) assist and report on RAD status/collection at EDTCB 1/2/3/4.



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## **4. National/ANSP RAD Coordinator (NRC)**

### **4.1 Role**

- 4.1.1 The role of the designated NRC is to provide a single link between the NM RAD Team and the States/FABs/ANSPs to co-ordinate the accumulation, management and publication of the RAD pertinent to that State/FAB/ANSP.

### **4.2 Responsibilities**

- 4.2.1 The National/ANSP RAD co-ordinator shall:
- a) carry out any necessary co-ordination within the State/FAB/ANSP to enable the creation/update and management of all pertinent content of the RAD in the agreed format and methodology;
  - b) provide the NM RAD Team with the “Operational Goal” of each and every restriction;
  - c) adhere to the published timetable (AIRAC -56 days (D -56)) for transmitting data to the NM RAD Team for publication. The RAD Cut-off and Publication dates could be found on the NM NOP portal.
  - d) provide the single link for discussion of the relevance or necessity for any RAD requirement identified by the NM RAD Team;
  - e) carry out the necessary internal co-ordination in order to provide answers in a timely manner. This is especially important with regard to the responsibilities of the National ENV Co-ordinator;
  - f) appoint and advise the NM RAD Team of a replacement on a permanent basis, or every time he/she will be unavailable for a period of days/weeks;
  - g) make him/herself available for a review of the RAD on an annual basis, or more frequently if the necessity demands;
  - h) review the respective RAD part on a regular basis;
  - i) consult with adjacent States/FABs/ANSPs on cross-border restrictions, or restrictions that affect routes that cross borders, to achieve a harmonious result;
  - j) be responsible for the numbering of the relevant RAD requirements, until establishment of automated RAD process;
  - k) be the contact point for all data relevant to the RAD.

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## 5. NRC RAD requirement request

### 5.1. General issues

- 5.1.1. Changes to the RAD shall be delivered to the NM RAD Team not later than AIRAC - 56 days (D -56).
- 5.1.2. Until establishment of automated RAD process:
- all RAD requirements shall be sent by NRC via e-mail to the NM RAD Team;
  - the responsibility for the numbering of RAD requirements lie with the NRC; It can also be delegated to the NM RAD Team on request; when there is no number assigned the NM RAD Team will do this.
- 5.1.3. All RAD requirements shall be accompanied by an “Operational Goal” clearly defined by the NRC. A RAD requirement without an “Operational Goal” shall not be accepted by the NM RAD Team.
- 5.1.4. All available automatic software change features shall not be used by the NRCs and changes shall be done with manual writing as described below.
- 5.1.5. All RAD requirements changes and/or updates will be inserted into the RAD by the NM RAD Team.

### 5.2. Format

The format for delivering changes shall be as follows:

#### 5.2.1. Amendment of RAD requirement

- 5.2.1.1. In “Change Record” column replace the row blank box by abbreviation AMD and incorporate all changes using **BOLD RED** text.

The abbreviation AMD comes from word “amendment” and is used only and exclusively for RAD purposes.

If there is no amendment in next RAD edition the row abbreviation AMD will be withdrawn and blank box will appear.

#### Fictitious Examples

Change record	FROM	TO	Lower Vertical Limit (FL)	Upper Vertical Limit (FL)	Available (Y) Not available (N)	Utilization	Time Availability	ID Number	Operational Goal	Remark/s	Direction of Cruising Labels	ATC Unit
<b>AMD</b>	AAAAA	BBBBB	<b>285</b>	<b>460</b>	Yes	Only available for traffic .....	<b>H24</b>	E_5001	Night time direct route .....	Via TSAxxx	ODD	E____ ACC

#### 5.2.2. New RAD requirement

- 5.2.2.1. Incorporate, the new RAD requirement/s using **BOLD RED** text, put in “Change Record” column abbreviation NEW and ensure that the numbering is sequential to those currently in use. No ID numbers shall be re-used.

The abbreviation NEW comes from word “new” and is used only and exclusively for RAD purposes.

If there is no amendment in next RAD edition the row abbreviation NEW will be withdrawn and blank box will appear.

If there is amendment in next RAD edition the row abbreviation will be changed from NEW to AMD.

#### Fictitious Examples

Change record	FROM	TO	Lower Vertical Limit (FL)	Upper Vertical Limit (FL)	Available (Y) Not available (N)	Utilization	Time Availability	ID Number	Operational Goal	Remark/s	Direction of Cruising Levels	ATC Unit
NEW	CCCCC	DDDDD	045	245	Yes	Only available for traffic	06.00 - 22.00 (05.00 - 21.00)	L_5002	Traffic DEP ... shall file	Within Class G airspace	ODD	L_5002 ACC

5.2.2.2. In accordance with RAD General Description part for all new DCTs with availability YES, all possible remarks concerning the airspace crossed by the allowed DCTs shall be provided. Based on relevant State AIPs AOs shall be informed for DCTs passing by: Uncontrolled classes of airspace, Danger areas, Prohibited areas, Restricted areas, TSAs, TRAs, CBAs, CTRs, TMAs etc.

5.2.2.3. Proper distinction between available DCTs used for flights planning purposes and those used to avoid the established airspace design processes shall be made.

5.2.2.4. For all available DCTs not applied to FRA, information if they are or will be included into the State's/FAB's airspace design plans shall be provided.

5.2.2.5. All DCT flight plan filing connections and/or connecting points to/from the airports with officially published SIDs/STARs shall be justified and the reason clearly stated. If the reason is inappropriate airspace design this shall be mentioned and proper actions will be taken by the NM RAD Team.

#### 5.2.3. Withdrawal of RAD requirement

5.2.3.1. In “Change Record” column replace the row blank box or abbreviation AMD or abbreviation NEW by abbreviation DEL. Withdrawal is presented as **BOLD RED** “Strikethrough” text.

The abbreviation DEL comes from word “delete” and is used only and exclusively for RAD purposes.

In next RAD edition the row is removed from the RAD document.

#### Fictitious Examples

Change record	FROM	TO	Lower Vertical Limit (FL)	Upper Vertical Limit (FL)	Available (Y) Not available (N)	Utilization	Time Availability	ID Number	Operational Goal	Remark/s	Direction of Cruising Levels	ATC Unit
DEL	CCCCC	DDDDD	045	245	Yes	Only available for traffic	06.00 - 22.00 (05.00 - 21.00)	L_5002	Traffic DEP ... shall file	Within Class G airspace	ODD	L_5002 ACC

5.2.4. "Last minute" Changes

5.2.4.1. "Last minute" changes are changes required:

- a) due to exceptional circumstances;
- b) only when they have a significant impact on operational requirements.

5.2.4.2. "Last minute" changes shall be processed as described in paragraph 1.1.7. above.

5.2.4.3. The "Last minute" changes will be incorporated into the subsequent RAD document publication as new, amended or withdrawn and be marked as described in paragraphs 5.2.1 - 5.2.3. above.

5.2.5. Numbering of RAD requirement

5.2.5.1. Each RAD requirement is numbered in accordance with the RAD General Description part.

5.2.5.2. Identifiers shall be assigned in accordance with the RAD General Description part.

5.2.5.3. The numbering is sequential. When a new restriction is introduced, it is allocated the next number in sequence from the last number that was introduced. When a restriction is withdrawn, the number is not re-allocated until the entire sequence has been exhausted.

5.2.5.4. Until establishment of automated RAD process the numbering of RAD Annex/Appendixes can be delegated to the NM RAD Team on request. When there is no number assigned to a new restriction request the NM RAD Team will do this.

5.2.5.5. When a restriction is created in CACD a letter is always added after each RAD unit identifier by the ENV Team. If the creation in CACD comprises more than one part in order to satisfy all of the requirements of the restriction the ENV Team will allocate a further "alpha" identifier, for example: E \_2778A, E \_2778B, etc.

5.2.6. Coordination and change of RAD requirement

5.2.6.1. Each RAD requirement identified as State/FAB restriction (LB1001, DU1001) requires coordination and might be changed only by the NRC from the State/ANSP of origin.

5.2.6.2. Each RAD requirement identified as Cross-border restriction (LBLR or LRLB or EBY) requires coordination and might be changed only after mutual approval by the NRCs from both States/ANSPs involved. This coordination of the involved NRCs may also be assumed by the NM RAD Team.

5.2.7. Submission of RAD requirements

5.2.7.1. Using the relevant templates of the RAD document send only amended and/or new and/or withdrawn RAD requirements.

5.2.7.2. As the NM RAD Team will incorporate the changes into the "master" RAD document it is not required to include these changes in the entire files.

5.2.7.3. The existing software automatic features should not be used and changes should be done with manual writing using **BOLD RED** text as prescribed above.

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## **6. RAD Management Group**

### **6.1. Role**

- 6.1.1. The RMG is a specialised group of the RND SG and ODSG constituted in order to support them with technical and operational expertise on activities related to the RAD. Within the frame of its activities, the RMG reports to the RND SG and ODSG from which it receives instructions and guidance.
- 6.1.2. The RMG is the co-ordination forum for European RAD and will confine its discussions to RAD related issues.
- 6.1.3. The RMG is to carry out work mandated by RND SG and ODSG and deliver the output of that work to them for endorsement by NETOPS team for the main purpose of enabling improvement of the RAD and its related processes.

### **6.2. Responsibilities**

- 6.2.1. With regard to the RAD the RMG is responsible to:
  - a) Monitor the scope of the RAD;
  - b) Make proposals for the amendment and publication processes;
  - c) Monitor the validation process;
  - d) Propose the development of procedures, including:
    - How to establish a RAD Annex and Appendix;
    - How to amend a RAD Annex and Appendix;
    - Roles and responsibilities of a RAD Co-ordinator;
    - Processes and techniques involved in maintaining a RAD Annex and Appendix;
    - Establishing a formal Review procedure;
    - Ensuring the RAD is utilised solely for Operational Requirements.
  - e) Maintain close coordination with other appropriate sub-groups/groups of the NETOPS team via RND SG and ODSG as required;
  - f) Review periodically its Terms of Reference and propose amendments as necessary.



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## 7. RAD publication timetable

The following publication timetable is used to maintain the RAD.

<b>DAY</b>	<b>PROCESS</b>	<b>ACTION</b>
<b>D-63</b>	Notification to States/FABs/ANSPs "One week to Cut-off".	<b>NM</b>
<b>D-56</b>	Finalisation of States/FABs/ANSPs requirements.	<b>States/FABs/ANSPs</b>
	Cut-off date. States/FABs/ANSPs provide amendments to NM.	
	Three weeks to compile the RAD and to resolve errors/conflicts.	<b>NM</b>
<b>D-28</b>	Publication.	<b>NM</b>
	Two weeks to assess impact of new restrictions.	
<b>D-14</b>	Results of impact assessment of new restrictions.	<b>NM</b>
	Changes/amendments to be promulgated via the "Increment File" on the NOP Portal.	
<b>D-10</b>	Freeze of ENVironment tape for AIRAC.	<b>NM</b>

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## **8. General provisions**

- 8.1. The provisions from this Manual shall be followed by the NOMD NM RAD Team and other OPL/NOS Teams in the entire RAD process.
- 8.2. The provisions from this Manual shall also be followed by all State/ANSP NRCs in the RAD process.
- 8.3. This RAD Users Manual supersedes all previous versions.

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## 9. Dictionary of abbreviations

ACRONYM	DEFINITION
<b>ACC</b>	Area Control Centre
<b>AD</b>	Airspace Data
<b>ADOU</b>	Airspace Data Operational Unit
<b>ADT</b>	Airspace Data Team
<b>AIM</b>	Aeronautical Information Message
<b>AIP</b>	Aeronautical Information Publication
<b>AIRAC</b>	Aeronautical Information Regulation And Control
<b>AIS</b>	Aeronautical Information Service
<b>ANSP</b>	Air National Service Provider
<b>AO</b>	Aircraft Operator
<b>AOWIR</b>	Aircraft Operator WHAT-IF Reroute
<b>ATFCM</b>	Air Traffic Flow and Capacity Management
<b>ATFM</b>	Air Traffic Flow Management
<b>CACD</b>	Central Airspace and Capacity Database
<b>CBA</b>	Cross Border Area
<b>CCAMS</b>	Centralised SSR Code Assignment Management System
<b>CCM</b>	Claim Centralized Management
<b>CDM</b>	Cooperative Decision Making
<b>CET</b>	Central European Time
<b>COO</b>	Chief Operations Officer
<b>COM</b>	Current OPS Manager
<b>CTR</b>	Control Area
<b>DB</b>	Data Base
<b>DCT</b>	Direct
<b>DMR</b>	Data Modification Request
<b>EDTCB</b>	Environment Data Transfer Control Board
<b>ENR</b>	En-route
<b>ENV</b>	Environment
<b>ERND</b>	European Route Network Design
<b>ERNIP</b>	European Route Network Improvement Plan
<b>ETFMS</b>	Enhanced Tactical Flow Management System
<b>EU</b>	European Union
<b>FAB</b>	Functional Airspace Block
<b>FIR</b>	Flight Information Region
<b>FMP</b>	Flow Management Position
<b>FPL</b>	Flight Plan
<b>FRA</b>	Free Route Airspace
<b>GAT</b>	General Air Traffic
<b>IFPS</b>	Integrated Initial Flight Plan Processing System
<b>IFR</b>	Instrument Flight Rules
<b>I2</b>	Incident type 2
<b>MIL</b>	Military
<b>NAT</b>	North Atlantic

<b>NETOPS</b>	Network Operations Team
<b>NM</b>	Network Manager
<b>NMD</b>	Network Manager Directorate
<b>NOM</b>	Network Operations Management
<b>NOMD</b>	Network Operations Management Division
<b>NOP</b>	Network Operations Plan
<b>NOS</b>	Network Operations
<b>NRC</b>	National/ANSP RAD Co-ordinator
<b>ODSG</b>	Operations and Development Sub-Group
<b>OPL</b>	Operations Planning
<b>OPS</b>	Operations
<b>PAMS</b>	Published AIP management system
<b>PTR</b>	Profile Tuning Restriction
<b>RAD</b>	Route Availability Document
<b>RFL</b>	Requested Flight Level
<b>RMG</b>	RAD Management Group
<b>RPL</b>	Repetitive flight Plan
<b>RNDSG</b>	Route Network Development Sub-Group
<b>SAT/I</b>	System acceptance testing integration
<b>SID</b>	Standard Instrument Departure
<b>SRD</b>	Standard Route Document
<b>SSR</b>	Secondary Surveillance Radar
<b>STAR</b>	Standard Arrival Route
<b>TMA</b>	Terminal Control Area
<b>TRA</b>	Temporary Reserved Area
<b>TSA</b>	Temporary Segregated Area

# Contact details

**DNM/COO/NOM/OPL**

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