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⁽¹⁾ Text with EEA relevance.

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Acts whose titles are printed in light type are those relating to day-to-day management of agricultural matters, and are generally valid for a limited period.

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II

(Non-legislative acts)

REGULATIONS

COMMISSION IMPLEMENTING REGULATION (EU) 2019/123

of 24 January 2019

laying down detailed rules for the implementation of air traffic management (ATM) network functions and repealing Commission Regulation (EU) No 677/2011**(Text with EEA relevance)**

THE EUROPEAN COMMISSION,

Having regard to the Treaty on the Functioning of the European Union,

Having regard to Regulation (EC) No 551/2004 of the European Parliament and of the Council of 10 March 2004 on the organisation and use of the airspace in the single European sky (the airspace Regulation) ⁽¹⁾, and in particular Articles 6(4) and 6(7) thereof,

Whereas:

- (1) The network functions should be a service of general interest exercised for/within the context of the European air traffic management network (EATMN, hereafter referred to as 'the network'). They should contribute to the sustainable development of the air transport system by ensuring the required level of performance, interoperability, compatibility and coordination of activities including those to ensure the optimal use of scarce resources.
- (2) The design of the European route network, the management of the network capacity and air traffic flows and the coordination of scarce resources, as provided for in Regulation (EC) No 551/2004, should be without prejudice to Member States' sovereignty over their airspace and to their responsibilities relating to public order, public security and defence matters as provided for in Regulation (EC) No 549/2004 of the European Parliament and of the Council ⁽²⁾.
- (3) The network should include all physical and operational components that determine the performance of aircraft, in particular their punctuality and flight efficiency, operated in the airspace within the International Civil Aviation Organisation (ICAO) EUR region where Member States are responsible for the provision of air traffic services.
- (4) The European route network should be designed to improve the efficiency of the routings from a gate-to-gate perspective in all phases of flight taking particular account of flight efficiency and environmental aspects.
- (5) Operational actions to develop efficient airspace structures and manage the available capacity are required to ensure the continuous improvement of the network operations in the single European sky and contribute to the Europe-wide performance targets. Those operational actions should allow for efficient use of airspace and ensure that airspace users can operate preferred trajectories.

⁽¹⁾ OJ L 96, 31.3.2004, p. 20.

⁽²⁾ Regulation (EC) No 549/2004 of the European Parliament and of the Council of 10 March 2004 laying down the framework for the creation of the single European sky (the framework Regulation) (OJ L 96, 31.3.2004, p. 1.)

- (6) The Air Traffic Flow Management (ATFM) function is an integral part of the network functions with a view to optimising available capacity in the use of airspace. Therefore, this function should be further detailed, taking due account of Commission Regulation (EU) No 255/2010 ⁽³⁾.
- (7) Regulation (EC) No 551/2004 provides for the adoption of detailed implementing rules to coordinate and harmonise the processes and procedures to enhance the efficiency of aeronautical frequency management. The detailed implementing rules would also need to provide for a central function to coordinate the early identification and resolution of frequency needs to support the design and operation of the network.
- (8) The ICAO's work in route design, air traffic flow management, frequency and radar transponder codes management should be used as a basis when optimising the development and operation of the network.
- (9) The Member States should comply with their obligations towards ICAO on route design, air traffic flow management, frequency and radar transponder codes management and should implement them more effectively for the network. The Network Manager should provide coordination and support in that area.
- (10) The implementation of the Air Traffic Flow Management (ATFM) function should be without prejudice to Council Regulation (EEC) No 95/93 ⁽⁴⁾. Airports that are entry and exit points to the network are key contributors to the overall network performance. For that reason, that function should liaise with airport operators acting as ground coordinators to optimise capacity on the ground. This would improve the overall network capacity. Furthermore, procedures to increase consistency between airport slots and flight plans should be established to optimise the available capacity of the network, including airports.
- (11) The allocation of radio spectrum takes place in the context of the International Telecommunication Union (ITU). The Member States have a responsibility to communicate their civil aviation requirements to the ITU and to subsequently use the frequency band allocated to general air traffic in an optimal manner. Decision No 676/2002/EC of the European Parliament and of the Council ⁽⁵⁾ sets out a policy and legal framework for that area.
- (12) ICAO has developed guidance material relevant for the radar transponder codes, including the Mode S interrogator codes, as well as the radio frequency functions. It also operates a system of registering frequency assignments for general air traffic purposes in the ICAO European region. This is currently facilitated by Eurocontrol, acting as Network Manager.
- (13) The events linked to the shooting down of flight MH 17 in the airspace of Ukraine on 17 July 2014 and the terrorist attack at Brussels airport on 22 March 2016 have demonstrated the need of having a central entity that can contribute to the coordination of mitigating measures at local, regional and network level to secure a timely response to future crisis situations affecting aviation.
- (14) A Network Manager should act as an impartial and competent body to perform the tasks necessary to execute the network functions provided for in Regulation (EC) No 551/2004 in an effective manner and with appropriate resources. The applicant for Network Manager should give evidence on the means and resources it plans to ensure in order to meet the requirements imposed on that body. The Network Manager should be represented by a manager from the body appointed to act as Network Manager.
- (15) It is beneficial to have a single body to coordinate the various network functions in support of action taken at local and sub-regional level to develop and facilitate consistent short- and long-term network operational and strategic objectives in line with the performance objectives. However, network functions should be delivered by the operational stakeholders and the Network Manager and at Member State and functional airspace block level in accordance with the responsibilities set out in this Regulation.

⁽³⁾ Commission Regulation (EU) No 255/2010 of 25 March 2010 laying down common rules on air traffic flow management (OJ L 80, 26.3.2010, p. 10).

⁽⁴⁾ Council Regulation (EEC) No 95/93 of 18 January 1993 on common rules for the allocation of slots at Community airports (OJ L 14, 22.1.1993, p. 1).

⁽⁵⁾ Decision No 676/2002/EC of the European Parliament and of the Council of 7 March 2002 on a regulatory framework for radio spectrum policy in the European Community (Radio Spectrum Decision) (OJ L 108, 24.4.2002, p. 1).

- (16) In 2017, the Commission reviewed the governance, financial arrangements, cost base and cost-efficiency of the network functions. One of the outcomes of this review was that the Network Manager should benefit from strengthened governance and greater management autonomy.
- (17) The network functions should be provided in a cost-efficient manner, in particular avoiding any duplication of efforts.
- (18) The duties and tasks of the Network Manager should be clearly set out with regard to the implementation of the network functions and the performance of the network. This should include any service or activity that needs to be performed centrally for the benefit of the operational stakeholders in accordance with working arrangements and processes for operations agreed with those stakeholders.
- (19) The tasks entrusted to the Network Manager relating to the monitoring of the infrastructure and common network support services should be carried out taking full account of the opinions of Member States and operational stakeholders.
- (20) The Network Manager should be involved in preparation of plans and operational actions relating to the execution of the network functions at national and sub-regional level when those plans and actions have an impact on the performance of the network.
- (21) To ensure an adequate performance of the network, the Network Operations Plan should include operational actions and local reference values that take into account the evolving network conditions and aim at meeting Union wide performance targets. Furthermore, the Network Manager should identify operational constraints and bottlenecks and suggest appropriate action.
- (22) Application of sound management principles is essential for continuous improvement of air traffic flow management in the Union, anticipating air traffic growth, and making best use of available capacity while reducing the environmental impact of air traffic flows. It is therefore necessary to establish a common framework for planning and implementing improvements to the performance of the network. To that end, a strategy plan and an operations plan should be drawn up at network level.
- (23) The Network Manager and operational stakeholders should work in partnership in order to improve air traffic flow management and take remedial measures as appropriate. The Network Manager should in particular be able to introduce ATFM measures to make best use of available capacity and promote the best provision of that capacity by ATC sectors.
- (24) The network functions should be without prejudice to Article 13 of Regulation (EC) No 549/2004 intended to safeguard essential security or defence policy interests. The network functions should also be without prejudice to the application of the flexible use of airspace as provided for in Article 7 of Regulation (EC) No 551/2004.
- (25) There should be coordination between the network functions and the operations organised at the level of functional airspace blocks.
- (26) Military operation effectiveness, civil-military cooperation and coordination are of utmost importance to achieving the required objectives. This Regulation should not cover decisions on the content, scope or performance of military operations and training under the operational air traffic regime. However, it is important to cover the interfaces between these operations and those covered by this Regulation in the interest of safety and mutual efficiency.
- (27) It is necessary to ensure the timely and effective execution of network functions and support the Network Manager in performing its tasks by establishing an efficient framework for consultation of operational stakeholders and detailed working arrangements and processes for operations.
- (28) Effective stakeholder consultations should take place at national, functional airspace block and network levels.
- (29) To ensure the appropriate governance relating to the execution of the network functions, a Network Management Board should be set up.

- (30) To ensure effective decision-making, the Network Management Board should have a limited number of members with operational and managerial responsibilities and extensive knowledge and expertise in the ATM field. Those members should ensure a balanced representation of the interests of all stakeholders. Air navigation service providers of associated countries contributing to the work of the Network Manager, through their representatives, should also be allowed to participate in the Network Management Board.
- (31) The Network Management Board should be supported in its decision-making by a working group on operations composed of operational managers to provide it with the appropriate operational insight and advice.
- (32) To ensure crisis management effectiveness at network level and support the European Aviation Crisis Coordination Cell in its tasks, a network of State focal points should be set up. The focal points should facilitate the involvement of national authorities and ensure close cooperation with the corresponding structures at Member State level in the event of crises.
- (33) Considering Member States' sovereignty over their airspace and their requirements relating to public order, public security and defence matters as well as their responsibilities as regards the network functions, Member States should be informed of and consulted on all measures having significant impact on the performance of the network. The Commission should make the best use of existing Committee meetings in order to take into account their views.
- (34) The budget of the Network Manager should allow the Network Manager to meet the specific targets identified in the performance scheme and to implement its work programme. The budget should be separately identifiable from the rest of the budget of the body appointed to act as the Network Manager where that body carries out any other activity. The Network Management Board should confirm the consistency of the Network Manager's budget with the Network Manager's annual work programme.
- (35) The Commission should ensure appropriate supervision of the Network Manager. That supervision should take into account the role of the European Union Aviation Safety Agency as competent authority for the certification and oversight of the Network Manager.
- (36) Third countries that have an agreement with the Union should be involved in the establishment and implementation of the network functions in order to enhance the pan-European dimension of the single European sky.
- (37) This Regulation takes due account of the experience gained from the execution of the network functions since 2011 and sets revised common rules for the execution of network functions. Commission Regulation (EC) No 677/2011 ⁽⁶⁾ should therefore be repealed.
- (38) The measures provided for in this Regulation are in accordance with the opinion of the Single Sky Committee,

HAS ADOPTED THIS REGULATION:

CHAPTER I

GENERAL PROVISIONS

Article 1

Subject matter and scope

1. This Regulation lays down detailed rules for the implementation of air traffic management network functions (network functions) in accordance with Article 6 of Regulation (EC) No 551/2004. It also lays down rules for managing network crises.
2. The network functions subject to this Regulation shall be the following:
 - (a) the European Route Network Design (ERND);

⁽⁶⁾ Commission Regulation (EC) 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 (OJ L 185, 15.7.2011, p. 1).

- (b) the Air Traffic Flow Management (ATFM) as referred to in Article 6(7) of Regulation (EC) No 551/2004 and in Regulation (EU) No 255/2010;
- (c) as regards the coordination of scarce resources:
 - (i) radio frequencies within aviation frequency bands used by general air traffic;
 - (ii) the radar transponder codes.

3. For the purpose of implementing the network functions, this Regulation applies to Member States, the Network Manager, the European Union Aviation Safety Agency (the Agency), airspace users, air navigation service providers, airport operators, airport slot coordinators, at local, national or functional airspace block level.

4. This Regulation applies to the airspace within the ICAO EUR region where Member States are responsible for providing air traffic services within the meaning of Article 2(11) of Regulation (EC) No 549/2004. This Regulation may apply also to the airspace within the ICAO EUR, NAT, AFI and MID regions where third countries as referred to in Article 24(1) are responsible for providing air traffic services.

Article 2

Definitions

For the purposes of this Regulation, the definitions in Article 2 of Regulation (EC) No 549/2004, Article 2 of Commission Regulation (EU) No 255/2010 and Article 2 of Commission Regulation (EC) No 2150/2005 ⁽⁷⁾ shall apply.

The following definitions shall also apply:

- (1) 'scarce resources' means the supply of means used for ATM to function effectively and which are limited in availability and are coordinated centrally by the Network Manager to ensure the performance of the European Air Traffic Management Network (the network);
- (2) 'aviation frequency band' means an entry in the Radio Regulations Table of Frequency Allocations of the International Telecommunication Union of a given frequency band in which frequency assignments are made for the general air traffic;
- (3) 'airport operator' means the body which in conjunction with other activities or otherwise, has the task under national laws or regulations of administering and managing the airport facilities and coordinating and controlling the activities of the various operators present at the airport or within the airport system concerned;
- (4) 'airport slot coordinator' means a qualified natural or legal person appointed in accordance with Article 4(1) of Regulation (EEC) No 95/93;
- (5) 'operational stakeholders' means the civil and military airspace users, civil and military air navigation service providers and airport operators which operate in the airspace referred to in Article 1(4);
- (6) 'Network Manager' means the body entrusted with the tasks necessary for the execution of the functions referred to in Article 6 of Regulation (EC) No 551/2004;
- (7) 'associated countries' means third countries that are members of Eurocontrol other than those who participate in the work of the Network Manager in accordance with Article 24(1);
- (8) 'performance scheme' means the regulatory framework to improve the performance of air navigation services and network functions in the single European sky as referred to in Article 11 of Regulation (EC) No 549/2004;

⁽⁷⁾ Commission Regulation (EC) No 2150/2005 of 23 December 2005 laying down common rules for the flexible use of airspace (OJ L 342, 24.12.2005, p. 20).

- (9) 'cooperative decision-making' means a process in which decisions are made based on interaction and consultation with Member States, operational stakeholders and other actors as appropriate, in accordance with Articles 15 to 17;
- (10) 'Performance Review Body' means the independent group of experts on the performance of air navigation services and network functions in the single European sky set up by Commission Implementing Decision (EU) 2016/2296 ⁽⁸⁾;
- (11) 'Network Management Board' means the board established by this Regulation that monitors and steers the execution of the network functions including the performance of the tasks of the Network Manager in accordance with Article 18;
- (12) 'operational action' means the action, at local, national, FAB or network level, as determined in the Network Operations Plan, through cooperative decision making between operational stakeholders and the Network Manager;
- (13) 'network crisis' means a state of inability to provide air navigation service at the required level, resulting in a major loss of network capacity, or a major imbalance between network capacity and demand, or a major failure in the information flow in one or several parts of the network following an unusual and unforeseen situation;
- (14) 'civil-military cooperation' means the interaction between civil and military authorities and components of ATM referred to in Article 3(1) necessary to ensure safe, efficient and harmonious use of the airspace;
- (15) 'conditional route (CDR)' means an ATS route that is only available for flight planning and used under specified conditions;
- (16) 'European representative bodies' means any legal person or entity representing the interests of one or several categories of operational stakeholders at the European level;
- (17) 'State focal point' means, in the context of crisis management, the persons in the Member States liaising with relevant national crisis management structures and organisations and the European Aviation Crisis Coordination Cell;
- (18) 'impact on the network' means, in the context of the radio frequency function set out in Annex III, a situation where a radio frequency assignment will degrade, obstruct or interrupt the functioning of one or more radio frequency assignments of the network or will counter the optimal use of aviation frequency bands within the scope of this Regulation;
- (19) 'airspace design' means a process that ensures the development and implementation of advanced navigational capabilities and techniques, improved route networks and associated sectorisation, optimised airspace structures and capacity-enhancing ATM procedures;
- (20) 'airspace utilisation' means the way that airspace is operationally used;
- (21) 'free route airspace' means a specific airspace within which airspace users can freely plan their routes between an entry point and an exit point without reference to the ATS route network;
- (22) 'air traffic control sector' ('ATC sector') means a defined volume of airspace for which a team of controllers has ATC responsibility at any given time;
- (23) 'user required route' means the required routing that is declared by the aircraft operators at the airspace design stage to meet their needs;
- (24) 'sector configuration' means a scheme combining airspace sectors with a view to ensuring that the operational requirements are best met and airspace availability is optimised;

⁽⁸⁾ Commission Implementing Decision (EU) 2016/2296 of 16 December 2016 setting up the independent group of experts designated as Performance Review Body of the single European sky (OJ L 344, 17.12.2016, p. 92).

- (25) 'air traffic service route (ATS route)' means a specified part of the airspace structure designed for channelling the flow of traffic as necessary for the provision of air traffic services;
- (26) 'frequency assignment' means authorisation given by a Member State to use a radio frequency or radio frequency channel under specified conditions.

Article 3

Components of the network

1. For the purpose of this Regulation, the network shall include the airports, the airspace structures and interfaces that connect them, and the infrastructure and operational capabilities of the EATMN that together serve the civil and military airspace users.
2. Operational stakeholders and the Network Manager, within the limits of their respective responsibilities, shall plan, design, operate and monitor the network components referred to in paragraph 1 in accordance with the Network Strategy Plan and the Network Operations Plan, specified in Articles 8 and 9 respectively, with a view to improve network efficiency, interoperability and connectivity and the achievement of the local and Union-wide performance targets as set out in the performance scheme.

CHAPTER II

ORGANISATION AND MANAGEMENT OF NETWORK FUNCTIONS

Article 4

Appointment of the Network Manager and duties of the Network Manager following its appointment

1. The appointment of the Network Manager shall take the form of a Commission Decision adopted in accordance with Article 5(2) of Regulation (EC) No 549/2004. That Decision shall include the terms and conditions of the appointment, including the financing of the Network Manager.
2. The period of appointment of the Network Manager shall last at least two reference periods of the performance scheme as set out in Article 8 of Commission Implementing Regulation (EU) No 390/2013 ⁽⁹⁾.
3. A body shall only be appointed as Network Manager if it meets the following conditions:
 - (a) it has demonstrated its competence and ability to perform the tasks set out in Article 7;
 - (b) it has described the main objectives it plans to achieve during the appointment period, as well as how it will ensure a good quality of its services to operational stakeholders;
 - (c) it has described the approach and the means it plans to use and it has described how it plans to perform the tasks of the Network Manager;
 - (d) if it also performs activities other than those relevant to the execution of the network functions, it has demonstrated that those other activities will be carried out independently from the Network Manager's tasks set out in Article 7.
4. The Network Manager, once appointed, shall:
 - (a) be certified by the Agency in accordance with Commission Implementing Regulation (EU) 2017/373 ⁽¹⁰⁾;
 - (b) maintain the operational and technical expertise necessary to perform the tasks set out in Article 7 in an independent, impartial and cost-effective manner;

⁽⁹⁾ Commission Implementing Regulation (EU) No 390/2013 of 3 May 2013 laying down a performance scheme for air navigation services and network functions (OJ L 128, 9.5.2013, p. 1).

⁽¹⁰⁾ Commission Implementing Regulation (EU) 2017/373 of 1 March 2017 laying down common requirements for providers of air traffic management/air navigation services and other air traffic management network functions and their oversight, repealing Regulation (EC) No 482/2008, Implementing Regulations (EU) No 1034/2011, (EU) No 1035/2011 and (EU) 2016/1377 and amending Regulation (EU) No 677/2011 (OJ L 62, 8.3.2017, p. 1).

- (c) act in accordance with the provisions on governance and consultation set out in Chapters III and V;
 - (d) avoid conflicts of interest;
 - (e) comply with the relevant Union legislation while performing its tasks;
 - (f) manage sensitive data securely;
 - (g) be represented by a manager who shall be responsible and accountable for the performance of the Network Manager's tasks and for managing its human and financial resources.
5. The Commission shall regularly monitor the work of the Network Manager and shall assess the Network Manager's compliance with the conditions referred to in paragraph 3 and 4 of this Article and the tasks set out in Article 7.

Article 5

Assessment

The Commission shall, at the latest after each reference period of the performance scheme, assess whether the network functions have been executed effectively and whether the Network Manager performs its tasks in an effective manner, in accordance with Article 4(4).

Article 6

Conditions of withdrawal

1. The following conditions shall justify withdrawal of the appointment of the Network Manager by the Commission:
 - (a) failure to comply with the requirements referred to in Article 4 and in the Commission Decision appointing the Network Manager;
 - (b) major and persistent failure to meet its performance targets.
2. The Network Manager shall establish and implement appropriate measures to ensure service continuity in the execution of the network functions in the event of withdrawal of the appointment until another body is appointed to act as Network Manager.

Article 7

Tasks of the Network Manager

1. The Network Manager shall support the execution of the network functions and, for this purpose, it shall:
 - (a) establish and keep up-to-date the Network Strategy Plan specified in Article 8, in line with the performance scheme and the ATM Master Plan, taking into account the relevant ICAO European air navigation plan and related documents;
 - (b) establish the Network Operations Plan specified in Article 9 to implement the Network Strategy Plan, covering the calendar years of the reference period and the annual, seasonal, weekly and daily periods;
 - (c) develop, organise and provide an integrated European Route Network Design function as set out in Annex I;
 - (d) coordinate the air traffic flow and capacity management and, through the central unit for ATFM, coordinate and execute ATFM measures as set out in Annex II;
 - (e) provide the central function for the coordination of radio frequencies as required by points (a) and (b) of Article 6(4) of Regulation (EC) No 551/2004 and as set out in Annex III, including a central register to record all radio frequency assignment data;
 - (f) coordinate the radar transponder codes allocation processes as set out in Annex IV;

- (g) organise the management and operation of the network functions;
- (h) coordinate and support the management of network crises in accordance with Articles 19 and 21; and call upon the EACCC, after consultation of the Commission;
- (i) ensure coordination, relating to the network functions, with ICAO regions other than the ICAO EUR region and countries that do not participate in the work of the Network Manager;
- (j) establish, keep up-to-date and execute the Network Manager's multiannual work programme and associated budget;
- (k) develop and implement an alert or alarm system to provide the Commission with data based on the analysis of flight plans so that it can monitor compliance with operating bans imposed on air carriers under Regulation (EC) No 2111/2005 of the European Parliament and of the Council ⁽¹¹⁾ or with other safety and security measures, or with both;
- (l) provide support requested by ICAO for tasks related to the execution of the network functions within the ICAO EUR region, subject to the conclusion of cooperative arrangements with ICAO.

2. The Network Manager shall also contribute to the continuous improvement of network operations in the single European sky and the overall performance of the network, especially regarding the implementation of the performance scheme. In particular, the Network Manager shall:

- (a) ensure that the Network Strategy Plan and the Network Operations Plan contribute to the achievement of the Union-wide targets and associated local performance targets and monitor the implementation of the plans;
- (b) prepare a Network Performance Plan in accordance with the performance scheme and implement it after it is approved by the Commission;
- (c) initiate, support and coordinate cooperation between operational stakeholders in the development and implementation of operational actions to ensure efficient use of available airspace and capacity and reduce network delays;
- (d) identify in the Network Operations Plan all initiatives supporting the development of cross-border coordination and the provision of cross-border air traffic management and air navigation services, highlighting those on which the delivery of the Network Performance Plan is particularly dependent;
- (e) identify operational safety hazards at network level in cooperation with operational stakeholders and assess the associated network safety risk and report them to the Agency;
- (f) provide the operational stakeholders and the relevant authorities of the Member States and the Commission with information on traffic forecast, and operational performance analysis in the context of the implementation of the performance scheme;
- (g) support operational stakeholders in preparing and implementing transition plans for the entry into service of major airspace or ATM system improvements;
- (h) develop procedures for ATFM delay attribution through cooperative decision-making and organise a post operations adjustment process involving air navigation service providers, airports and national supervisory authorities to address issues that relate to ATFM delay measurement, classification and attribution;
- (i) support operational stakeholders in the implementation of a flexible use of airspace in accordance with Regulation (EC) No 2150/2005.

3. To fulfil the tasks referred to in paragraphs 1 and 2, the Network Manager shall:

- (a) ensure that tools, processes and consistent data are available to support the cooperative decision-making process at network level and that such data are shared. Such data shall include, in particular, flight plan processing, European data management systems and aeronautical information relevant to the execution of network functions as well as an electronic integrated briefing portal with access to interested stakeholders subject to Article 3a of Regulation (EC) No 551/2004;

⁽¹¹⁾ Regulation (EC) No 2111/2005 of the European Parliament and of the Council of 14 December 2005 on the establishment of a Community list of air carriers subject to an operating ban within the Community and on informing air transport passengers of the identity of the operating air carrier, and repealing Article 9 of Directive 2004/36/EC (OJ L 344, 27.12.2005, p. 15).

- (b) provide a consolidated and coordinated approach to all planning and operational activities of the network, including monitoring and improvement of the overall network performance in order to improve network efficiency, interoperability and connectivity;
- (c) contribute to amendments to the ICAO documents relating to the network functions following Union processes;
- (d) support operational stakeholders in executing their obligations that are placed on them, in deploying air traffic management or air navigation services (ATM/ANS) systems and procedures in accordance with the ATM Master Plan, in particular the common projects set up in accordance with Commission Implementing Regulation (EU) No 409/2013 ⁽¹²⁾;
- (e) assist the Commission and the deployment manager as referred to in Article 9 of Implementing Regulation (EU) No 409/2013, in setting up, adopting and implementing the common projects in accordance with Article 5 of that regulation;
- (f) enter into cooperative arrangements with the deployment manager in accordance with point (a) of Article 9(7) and Article 12(2) of Implementing Regulation (EU) No 409/2013;
- (g) monitor the performance of the infrastructure relevant for the execution of the network functions, i.e.:
 - (i) the coverage of ground-based navigation systems in support of the implementation and operation of navigation applications;
 - (ii) the coverage of space-based navigation systems in support of the implementation and operation of navigation applications on the basis of the information provided by:
 - (a) the Galileo Reference Centre (GRC) for the core constellations of the Global Navigation Satellite Systems (GNSS);
 - (b) the European Geostationary Navigation Overlay Service (EGNOS) Service Provider for the EGNOS system;
 - (iii) surveillance interrogators and avionics;
 - (iv) datalink communications;
 - (v) airborne collision avoidance systems (ACAS);
 - (vi) airborne altimetry;
- (h) develop, organise and provide common network support services related to the network functions that are required by operational stakeholders and which are performed in a central manner for the benefit of the network operational performance and cost-efficiency reasons, i.e.:
 - (i) the ATM messaging centre;
 - (ii) the network addresses management service.
- (i) support entities entrusted with investigating civil aviation accidents and incidents or with analysing occurrences, as provided for in Regulation (EU) No 996/2010 of the European Parliament and of the Council ⁽¹³⁾, when they request such assistance;

⁽¹²⁾ Commission Implementing Regulation (EU) No 409/2013 of 3 May 2013 on the definition of common projects, the establishment of governance and the identification of incentives supporting the implementation of the European Air Traffic Management Master Plan (OJ L 123, 4.5.2013, p. 1).

⁽¹³⁾ Regulation (EU) No 996/2010 of the European Parliament and of the Council of 20 October 2010 on the investigation and prevention of accidents and incidents in civil aviation and repealing Directive 94/56/EC (OJ L 295, 12.11.2010, p. 35).

- (j) exchange operational data with operational stakeholders in accordance with Article 13 of Regulation (EC) No 550/2004;
 - (k) collect, consolidate and analyse all data identified in Annexes I to VI and provide this data to the Commission, the Agency and the Performance Review Body as requested.
4. The Network Manager shall respond to ad hoc requests from the Commission, the Member States or the Agency for information, advice, analysis or other similar ancillary tasks linked to the various functions.

Article 8

Network Strategy Plan

1. The Network Manager shall establish and keep up-to-date the Network Strategy Plan, in consistency with the ATM Master Plan and through cooperative decision-making. The Network Strategy Plan shall guide the network's long-term development and be aligned with the reference periods of the performance scheme and cover the period of appointment of the Network Manager.
2. The Network Strategy Plan shall be established on the basis of the template set out in Annex V. It shall be endorsed by the Network Management Board and approved by the Commission after consultation of Member States.
3. The Network Strategy Plan shall aim to achieve the performance targets for network functions provided for in the performance scheme.
4. The Network Strategy Plan shall be updated at least 12 months before the beginning of each reference period.

Article 9

Network Operations Plan

1. The Network Manager shall establish a detailed Network Operations Plan, in cooperation with operational stakeholders to implement the Network Strategy Plan at operational level in the short and medium term through cooperative decision-making.
2. The Network Operations Plan shall cover the calendar years of the reference period and of the annual periods, including operational actions contained therein.
3. The Network Operations Plan shall contain the information set out in Annex VI. The Network Operations Plan shall be approved by the Network Management Board.
4. The Network Operations Plan shall include, in particular:
 - (a) network operational performance requirements and local reference values of ATFM delay for the purpose of contributing to the achievement of the Union-wide performance targets;
 - (b) operational actions that contribute to the achievement of the Union-wide performance targets and local performance targets in the performance scheme covering the calendar years of the reference period and the annual, seasonal, weekly and daily periods considering the latest traffic forecast and its evolution.
5. The Network Operations Plan shall encompass operational actions concerning all network functions and military requirements, if these requirements are provided by Member States. Those operational actions shall be determined through cooperative decision-making and their mutual consistency shall be assessed by the Network Manager.
6. If the Network Manager identifies operational constraints and bottlenecks preventing achievement of the Union-wide and local performance targets, it shall suggest additional operational actions. Such actions shall be determined through cooperative decision-making.
7. Air navigation service providers and airport operators shall ensure that their plans are aligned with the Network Operations Plan and implement the operational actions referred to in point (b) of paragraph 4.
8. The Network Manager shall update the Network Operations Plan as necessary and at least every six months.

*Article 10***Remedial measures**

1. If the levels of performance agreed through cooperative decision-making are not achieved, or if the operational actions referred to in paragraph 4(b) of Article 9 are not implemented, the Network Manager shall, as part of the execution of its tasks and without prejudice to the responsibilities of the Member States, propose remedial measures to be taken by operational stakeholders. In doing so, it shall first consult the operational stakeholders affected by those measures, secondly submit the proposal for remedial measures to the working group on operations referred to in Article 18(2) for discussion and lastly obtain the approval of the proposal for remedial measures by the Network Management Board. The operational stakeholders affected by those measures shall implement them or inform the Network Management Board of the reasons for not implementing them.
2. The Network Manager shall inform Member States and the national supervisory authority responsible for the oversight of the operational stakeholder concerned by the remedial measures about the content of the measure and about any aspect related to changes in operational performance.
3. Member States shall inform without undue delay the Commission and the Network Manager where their responsibilities prevent the remedial measures from being implemented or when their implementation leads to inconsistencies with the performance plans.
4. The Network Manager shall establish and keep up to date a register of the operational actions and remedial measures that operational stakeholders have not implemented, including the reasons that prevent their implementation and thereof inform the Commission.

*Article 11***Relations with operational stakeholders**

1. To monitor and improve the overall performance of the network, the Network Manager shall conclude appropriate working arrangements with the operational stakeholders in accordance with Article 17.
2. The Network Manager and operational stakeholders shall coordinate the development and deployment of the tools and systems necessary for the execution of network functions to meet the requirements of Article 3(2).
3. The operational stakeholders shall ensure that the operational actions implemented at local or functional airspace block level are compatible with those determined through cooperative decision-making.
4. The operational stakeholders shall provide the Network Manager with the relevant data listed in Annexes I to VI, complying with time periods and requirements determined through cooperative decision-making.

*Article 12***Relations with Member States**

1. In the execution of its tasks, the Network Manager shall take due account of the responsibilities of the Member States relating to their sovereignty over their airspace and public order, public security and defence matters.
2. Member States shall remain responsible for the detailed development, approval and establishment of the airspace structures for the airspace under their responsibility.
3. When Member States' authorities are involved in operational issues related to the network functions, in particular the coordination of scarce resources referred to in point (c) of Article 1(2), the Network Manager shall consult them within the cooperative decision-making process and they shall implement the results determined in this process at national level.

*Article 13***Relations with functional airspace blocks**

1. The Network Manager shall closely cooperate and coordinate with air navigation service providers at the level of functional airspace blocks, in particular as regards strategic planning and tactical daily flow and capacity management.

2. The Network Manager shall establish, in close cooperation with air navigation service providers at the level of the functional airspace blocks, harmonised processes, procedures and interfaces to facilitate operational connectivity between functional airspace blocks.
3. Member States cooperating in a functional airspace block shall endeavour to formulate consolidated views on the strategic issues of the network functions referred to in Article 21(2).
4. Air navigation service providers cooperating in a functional airspace block shall endeavour to formulate consolidated views to support cooperative decision-making.

Article 14

Civil-military cooperation

1. Member States shall ensure appropriate involvement of national military authorities in all activities related to the execution of network functions.
2. Member States shall ensure appropriate representation of the military air navigation service providers and military airspace users in the consultation process and working arrangements established by the Network Manager.
3. The Network Manager shall ensure that appropriate arrangements are in place to allow and support its coordination with national military authorities and other relevant military bodies, including the European Defence Agency (EDA). The scope of that coordination shall cover all aspects related to the execution of the network functions that have an impact on military activities.
4. The ERND and ATFM functions shall be executed without prejudice to the airspace reservations or restrictions for exclusive or specific use by the Member States. The Network Manager shall encourage and coordinate the availability of conditional routes through those volumes and shall facilitate accommodation of military requirements and crisis management responses.

CHAPTER III

GOVERNANCE OF NETWORK FUNCTIONS

Article 15

Cooperative decision-making

1. Member States and operational stakeholders shall execute network functions with the support of the Network Manager through cooperative decision-making that includes the following elements:
 - (a) the consultation process provided for in Article 16;
 - (b) detailed working arrangements and processes for operations provided for in Article 17.
2. The Network Manager shall assist the Network Management Board in adopting measures related to the governance of the network functions provided for in Article 18.
3. When the Network Manager's actions are disputed by one or several operational stakeholder(s), the Network Manager shall refer the matter to the Network Management Board for resolution.

Article 16

Consultation process

1. The Network Manager shall establish a process for the appropriate and regular consultation of the interested parties referred to in Article 1(3).
2. The consultation shall cover the detailed working arrangements and processes for operations provided for in Article 17, the Network Strategy Plan, the Network Operations Plan and the Network Performance Plan, as well as progress in the implementation of the plans, reports to the Commission and on operational issues.

3. The Network Manager shall adjust the consultation process to the needs of the individual network functions. In order to ensure that regulatory issues can be addressed, Member States' authorities shall be involved when required.

4. Where operational stakeholders claim that their views on a specific issue were not duly considered, the issue shall first be referred to the Network Manager for further consideration. Where the issue cannot be resolved in that manner, it shall be referred to the Network Management Board for resolution.

Article 17

Working arrangements and processes for operations

1. The Network Manager shall establish detailed working arrangements with operational stakeholders, Member States, third countries as referred to in Article 24(1), and associated countries as appropriate, and processes for operations to address planning and operational aspects related to the execution of network functions, taking into account in particular the specific features and requirements of the individual network functions as specified in Annexes I to IV.

2. The Network Manager shall ensure that the detailed working arrangements and processes for operations contain rules for notification of the remedial measures resulting from cooperative decision-making addressed to the interested parties referred to in Article 1(3).

3. Those detailed working arrangements and processes for operations shall comply with the requirements on the separation of service provision from regulatory issues provided for in Article 4(2) of Regulation (EC) No 549/2004.

Article 18

Network Management Board

1. The Network Management Board shall be responsible for:

- (a) endorsing the draft Network Strategy Plan;
- (b) approving the Network Operations Plans;
- (c) approving the proposals for remedial measures referred to in Article 10;
- (d) approving the specifications for the consultation processes as well as the detailed working arrangements and processes for operations for the network functions referred to in Articles 15 and 17 and the post operations adjustment process referred to in Article 7(2)(h);
- (e) approving the Rules of Procedure of the European Aviation Crisis Coordination Cell provided for in Article 19(5) and its work programme;
- (f) monitoring the progress in the implementation of the Network Strategy Plan, the Network Operations Plan and the Network Performance Plan referred to in point (b) of Article 7(2) and addressing any potential deviations from initial plans;
- (g) monitoring the consultation process of operational stakeholders;
- (h) monitoring the activities related to management of the network functions and the performance of the tasks of the Network Manager, including the quality of the services it provides to operational stakeholders;
- (i) monitoring the Network Manager's activities related to network crises;
- (j) approving the annual report referred to in Article 22(3);
- (k) addressing the issues referred to in Articles 15(3) and 16(4) which are not solved at the level of the individual network function;
- (l) endorsing the Network Manager's annual budget;
- (m) approving the Board's Rules of Procedure;
- (n) approving the work programme referred to in point (j) of Article 7(1) and monitoring its implementation;

- (o) endorsing the Network Performance Plan referred to in point (b) of Article 7(2);
 - (p) giving an opinion on possible additional functions that might be attributed to the Network Manager in application of Article 6(3) or point (c) of Article 6(4) of Regulation (EC) No 551/2004;
 - (q) providing recommendations for the purpose of the monitoring of the performance of the infrastructure referred to in Article 7(3)(g), including the corresponding cost benefit analyses;
 - (r) giving opinions on the development and provision of common network support services referred to in Article 7(3)(h), including the corresponding cost benefit analyses;
 - (s) approving the cooperative arrangements referred to in point (l) of Article 7(1), point (f) of Article 7(3) and Article 24;
 - (t) giving an opinion on the appointment of the manager of the Network Manager, as referred to in point (g) of Article 4(4).
2. The Network Management Board shall set up working groups to support it in its work, in particular a working group on operations composed of the operational stakeholders' directors of operations.
3. The Network Management Board shall have the following voting members:
- (a) one representative of air navigation service providers per functional airspace block, established or under establishment, with a total number of four votes for all air navigation service providers;
 - (b) four representatives of commercial and non-commercial civil airspace users;
 - (c) two representatives of the airport operators;
 - (d) two representatives of the military air navigation service providers and airspace users
4. The Network Management Board shall have the following non-voting members:
- (a) the chairperson of the Network Management Board;
 - (b) one representative of the Commission;
 - (c) the manager of the Network Manager, as referred to in point (g) of Article 4(4);
 - (d) the chairperson of the working group on operations referred to in paragraph 2;
 - (e) two representatives of air navigation service providers of associated countries contributing to the work of the Network Manager;
 - (f) one representative of Eurocontrol.
5. Each member of the Network Management Board shall have an alternate.
6. The Commission shall appoint the chairperson of the Network Management Board based on his or her technical competence and expertise and upon proposal from the voting members of the Network Management Board. It shall also appoint two vice-chair persons from the voting members.
7. The Commission shall appoint the voting members and their alternates referred to in points (a) of paragraph 3 upon proposals from their organisations. It shall appoint the voting members and their alternate referred to in point (b) and (c) of paragraph 3, upon proposals from their respective European representative bodies. It shall appoint the voting member and its alternate referred to in point (d) of paragraph 3, upon proposals from EDA. It shall appoint the non-voting members referred to in point (e) of paragraph 4, upon proposal from Eurocontrol based both on a rotation, which allows each associated country to be appointed in turn, and on the operational needs at the time of the appointment.
8. The Commission may appoint observers and independent experts as advisors who serve in their personal capacity and represent a broad range of disciplines encompassing the network functions.

9. The members referred to in points (a) and (b) of paragraph 4 shall have the right to reject proposals that have an impact on:

- (a) the compatibility of Network Management Board activities with the aims and objectives of this Regulation;
- (b) the impartiality and equity in the execution of network functions.

10. The decisions referred to in points (a) to (e), (j), (l) to (o) and (s) of paragraph 1 shall be adopted by the Network Management Board by simple majority of its voting members.

11. Meetings of the Network Management Board shall be convened by its chairperson. The board shall hold at least three ordinary meetings a year. In addition it shall meet at the request of the chairperson or the Commission. The Network Manager shall provide the secretariat for the Network Management Board and the chairperson.

12. The Network Manager shall provide the resources required for the establishment and operation of the Network Management Board and its working groups.

CHAPTER IV

NETWORK CRISIS MANAGEMENT

Article 19

European Aviation Crisis Coordination Cell

1. The management of network crises shall be supported by the establishment of a European Aviation Crisis Coordination Cell (the EACCC). The EACCC shall contribute, through its work, to a coordination of responses to network crises.

2. The EACCC shall have as permanent members one representative of each of the following:

- (a) a Member State mandated for these purposes by all Member States;
- (b) the Commission;
- (c) the Agency;
- (d) Eurocontrol;
- (e) the Network Manager;
- (f) the military;
- (g) the air navigation services providers;
- (h) the airport operators;
- (i) the airspace users.

The Commission shall appoint those members and their alternates. The appointment shall be made following a proposal by:

- (1) the Member States in the case referred to in point (a) of the first subparagraph;
- (2) the Agency, Eurocontrol and the Network Manager in the case referred to in points (c), (d) and (e) of the first subparagraph, as the case may be;
- (3) EDA in the case referred to in point (f) of the first subparagraph;
- (4) the respective European representative bodies in the case referred to in points (g), (h) and (i) of the first subparagraph;

3. Each Member States shall nominate a focal point (State focal point) and an alternate to the EACCC and facilitate their access to relevant information from national crisis management structures not limited to the aviation domain. The State focal points shall carry out their duties in accordance with the EACCC Rules of Procedure.

4. The EACCC may involve, on a case-by-case basis, experts depending on the nature of the specific crisis to assist it in formulating its crisis management responses.
5. The EACCC shall prepare its Rules of Procedure and amendments thereto for approval by the Network Management Board in accordance with Article 18(1)(e).
6. The Network Manager shall provide the resources required for the establishment and operation of the EACCC.

Article 20

Responsibilities of the Network Manager

The Network Manager shall, when necessary with the support of the EACCC:

- (a) coordinate the responses to the network crises, involving close cooperation with corresponding structures in Member States;
- (b) support the activation and coordination of contingency plans at Member State level, in particular through the network of State focal points;
- (c) prepare mitigating measures at network level to secure the provision of a timely response to a network crisis in order to protect and ensure the continued and safe operation of the network. For this purpose, the Network Manager shall independently:
 - (i) monitor the network situation regarding network crises on a 24-hour basis;
 - (ii) ensure effective information management and communication by disseminating accurate, timely and consistent data to support Member States and operational stakeholders in their decisions on how to recover from network crises and/or mitigate their impact on the network;
 - (iii) facilitate the organised collection and centralised storage of that data;
- (d) indicate, where appropriate, to the Commission, the Agency or Member States any opportunities for an additional support for mitigation of network crisis, including liaising with operators of other modes of transport who may identify and implement intermodal solutions;
- (e) monitor and report to the EACCC on network recovery and resilience;
- (f) organise, facilitate and perform an agreed programme of network crisis simulation exercises involving Member States and operational stakeholders to anticipate real network crises;
- (g) develop, implement and monitor a work programme and a risk register.

CHAPTER V

CONSULTATION OF MEMBER STATES, MONITORING, REPORTING AND SUPERVISION

Article 21

Information and consultation of the Member States

1. The Network Manager shall regularly update the Commission on progress in the execution of network functions and the measures taken. The Commission shall inform Member States of that progress and of those measures.
2. The Commission shall consult Member States on the strategic issues of the network functions and to take account their opinion.

Those issues shall include:

- (a) the overall performance of the network;
- (b) the implementation of remedial measures by the Network Manager referred to in Article 10;

- (c) the appointment of the chairperson and the members of the Network Management Board;
- (d) the draft Network Strategy Plan, and in particular the objectives of the plan at an early stage;
- (e) the draft Network Performance Plan;
- (f) the draft annual budget of the Network Manager;
- (g) the Network Manager Annual Report;
- (h) the draft Rules of Procedure of the EACCC;
- (i) the specifications for the consultation processes and the detailed working arrangements and processes for operations referred to in Articles 16 and 17;
- (j) the issues referred to in Articles 12(3) which are not solved at the level of the individual network function;
- (k) the cases referred to in Article 10(3);
- (l) the assessment referred to in Article 5;
- (m) the development and provision of monitoring tasks related to the ATM/CNS infrastructure and of common network support services related to the execution of network functions, including the corresponding cost benefit analyses and budget.

The consultation on point (a) of the second subparagraph shall take place on a regular basis.

Article 22

Monitoring and reporting

1. The Network Manager shall establish a process of continuous monitoring of all of the following:
 - (a) the operational network performance;
 - (b) the measures taken and the performance outcome achieved by the operational stakeholders and Member States;
 - (c) the effectiveness and efficiency of cooperative decision-making in the execution of each of the functions;
 - (d) the quality of its services to operational stakeholders by means of specific indicators.
2. The continuous monitoring shall aim to identify any potential deviation from the Network Strategy Plan and Network Operations Plan. The operational stakeholders shall support the Network Manager in this process by providing data.
3. The Network Manager shall submit annually a report to the Commission, the Network Management Board and the Agency on the measures taken to fulfil its tasks and recommendations to address network issues. The report shall address individual network functions as well as the total network situation and the implementation of the Network Strategy Plan, the Network Operations Plan and the Network Performance Plan and the achievement of the Network Manager's objectives for ensuring the quality of its services to operational stakeholders. The Commission shall transfer the report to the Member States.

Article 23

Supervision of the Network Manager

The Commission shall ensure the supervision of the Network Manager, in respect of compliance with the requirements contained in this Regulation and other Union legislation, in particular Regulation (EC) No 2150/2005, Implementing Regulation (EU) No 390/2013 and Commission Implementing Regulation (EU) No 391/2013⁽¹⁴⁾, Implementing Regulation (EU) No 409/2013 and common projects set up in accordance with that Regulation. The Commission shall inform the Member States of the outcome of the supervision.

⁽¹⁴⁾ Commission Implementing Regulation (EU) No 391/2013 of 3 May 2013 laying down a common charging scheme for air navigation services (OJ L 128, 9.5.2013, p. 31).

CHAPTER VI
RELATIONS WITH THIRD COUNTRIES

Article 24

Participation of third countries in the work of the Network Manager

1. Third countries participate in the work of the Network Manager in accordance with Union law, subject to and in accordance with agreements with the Union.
2. Associated countries and their operational stakeholders may contribute to the work of the Network Manager.
3. The Network Manager may enter into cooperative arrangements with air navigation service providers established in countries other than the ones referred to in paragraph 1 and 2 within the ICAO EUR, NAT, AFI and MID regions, where these countries are participating in a functional airspace block or their participation has a direct impact on the performance of the network and to ensure appropriate regional interoperability and connectivity.
4. In order to improve the execution of network functions and the performance of the network, the Network Manager may also enter into cooperative arrangements with air navigation service providers established in countries within other ICAO regions than the ones referred to in paragraph 3 in order to exchange data concerning network functions.

CHAPTER VII
FINANCING AND BUDGET

Article 25

Financing and budget of the Network Manager

1. Member States shall take the necessary measures to fund the tasks entrusted to the Network Manager through air navigation charges.
2. The Network Manager shall establish its costs in a clear and transparent manner.
3. The Network Manager shall establish the budget that is:
 - (a) adequate to meet its performance targets in accordance with the Network Performance Plan referred to in point (b) of Article 7(2);
 - (b) adequate to implement its work programme referred to in point (j) of Article 7(1);
 - (c) set in separate accounts in situations where the body appointed to act as the Network Manager also performs tasks other than those referred to in Article 7.

CHAPTER VIII
FINAL PROVISIONS

Article 26

Repeal

Regulation (EU) No 677/2011 is repealed.

Article 27

Entry into force

This Regulation shall enter into force on the twentieth day following that of its publication in the *Official Journal of the European Union*.

It shall apply from 1 January 2020.

This Regulation shall be binding in its entirety and directly applicable in all Member States.

Done at Brussels, 24 January 2019.

For the Commission

The President

Jean-Claude JUNCKER

ANNEX I

THE EUROPEAN ROUTE NETWORK DESIGN FUNCTION

PART A

Objective and scope

1. The objective of the European Route Network Design (ERND) function is to:
 - (a) develop and implement a European Route Network Improvement Plan for the safe and efficient operation of air traffic, taking due account of the environmental impact;
 - (b) facilitate, within the European Route Network Improvement Plan, the development of an airspace structure offering the required level of safety, capacity, flexibility, responsiveness, environmental performance and seamless provision of expeditious air navigation services, with due regard to security and defence needs;
 - (c) ensure regional connectivity and interoperability of the European route network within the ICAO EUR Region and with adjacent ICAO Regions.
2. The European Route Network Improvement Plan is a rolling plan established by the Network Manager in coordination with Member States and the operational stakeholders. The plan includes the result of its operational activities on short- and medium-term route network design in accordance with the guiding principles of the Network Strategy Plan. It shall reflect all the elements necessary to ensure that European airspace is designed as a single entity and it shall meet the Union-wide performance targets set for the Network Manager in the performance scheme.
3. The European Route Network Improvement Plan shall form the ERND-specific part of the Network Operations Plan and include detailed rules for the implementation of the ERND-part of the Network Strategy Plan.
4. The European Route Network Improvement Plan shall include:
 - (a) common general principles complemented by technical specifications for airspace design;
 - (b) military requirements for use of airspace;
 - (c) the European route network and, where feasible, free route airspace structures designed to meet all user requirements with details covering all the airspace changes;
 - (d) utilisation rules and availability of the route network and free route airspace;
 - (e) division of the airspace into air traffic control (ATC) sectors in support of the ATS airspace;
 - (f) procedures for airspace management;
 - (g) a detailed timetable for the development of airspace design changes;
 - (h) the calendar for a common publication and implementation cycle of the changes in airspace structures and utilisation rules, through the Network Operations Plan;
 - (i) an overview of the current and expected network situation, including expected performance based on current and agreed plans for airspace design.

PART B

Procedure for the development of the European Route Network Improvement Plan

1. The Network Manager, Member States, airspace users, air navigation service providers acting as part of functional airspace blocks or individually, shall develop the European Route Network Improvement Plan through cooperative decision-making as referred to in Article 15. They shall apply the airspace design principles set out in Part C of this Annex.

2. The cooperative decision-making shall follow detailed working arrangements and processes for operations to be set at the expert level by the Network Manager, including the civil-military dimension. Those working arrangements shall be developed following consultation of all stakeholders. The working arrangements shall take place at regular intervals to reflect the needs of the European Route Network Design function.
3. To ensure appropriate connectivity of the European Route Network Improvement Plan, the Network Manager and the Member States shall include third countries in the cooperative decision-making process in accordance with Article 24. Appropriate cooperation shall be ensured between, on the one hand, the Network Manager and its expert level detailed working arrangements supporting the development of the European Route Network Improvement Plan and, on the other hand, the relevant ICAO expert level working arrangements covering route network improvements at the interface.
4. Airspace design projects shall be compatible and consistent with the European Route Network Improvement Plan. At least the following changes to airspace design projects require compatibility checking and need to be notified to the Network Manager:
 - (a) changes in route alignment;
 - (b) changes in route direction;
 - (c) changes in route purpose;
 - (d) free route airspace description, including associated utilisation rules;
 - (e) route utilisation rules and availability;
 - (f) changes in vertical or horizontal sector boundary;
 - (g) addition or removal of significant points;
 - (h) changes in cross-border airspace utilisation;
 - (i) changes to the coordinates of significant points;
 - (j) changes affecting data transfer;
 - (k) changes affecting data published in aeronautical information publications;
 - (l) changes affecting letters of agreement with regard to airspace design and utilisation.
5. The European Route Network Improvement Plan shall be continuously reviewed during its operation to take into account new or changing demands of the airspace. In that review process, a continuous coordination shall be ensured with the military authorities.

PART C

Airspace design principles

1. When developing the European Route Network Improvement Plan, the Network Manager, Member States and air navigation service providers, acting as part of functional airspace blocks or individually, shall, through cooperative decision-making, adhere to the following airspace design principles:
 - (a) the establishment and configuration of airspace structures shall be based on operational requirements, irrespective of national or functional airspace block borders or Flight Information Region (FIR) boundaries, and shall not be constrained by the division level between upper and lower airspace;
 - (b) the design of airspace structures shall be based on a transparent process allowing to consult the decisions made and understand their justifications and shall take into account the requirements of all users whilst reconciling safety, capacity, environmental aspects and having due regard to military and national security needs;
 - (c) the present and forecast traffic demand, at network and local level, and the performance targets shall be the input for the European Route Network Improvement Plan with a view to satisfying the needs of the main traffic flows and airports;

- (d) ensure vertical and horizontal connectivity, including terminal airspace and the airspace structure at the interface;
 - (e) the possibility for flights to operate along, or as near as possible to, user required routes and flight profiles in the en route phase of flight;
 - (f) the acceptance for assessment and possible development of all airspace structures proposals, including Free Route Airspace, multiple route options and Conditional Routes (CDRs), received from stakeholders having an operational requirement in that area;
 - (g) the design of airspace structures including Free Route Airspace and ATC sectors shall take into account existing or proposed airspace structures designated for activities which require airspace reservation or restriction. To that end only such structures that are in accordance with the application of the Flexible Use of Airspace (FUA) shall be established. Such structures shall be harmonised and be consistent with the largest possible extent across the entire European network;
 - (h) ATC sector design development shall commence with the required route or traffic flow alignments within an iterative process that ensures compatibility between routes or flows and sectors;
 - (i) ATC sectors shall be designed to enable the construction of sector configurations that satisfy traffic flows and are adaptable and proportionate to variable traffic demand;
 - (j) in cases where for operational reasons ATC sectors require to be designed across national or functional airspace block borders or FIR boundaries, agreements on service provision shall be established between the operational stakeholders concerned.
2. The Network Manager, Member States, functional airspace blocks and air navigation service providers (the latter acting as part of functional airspace blocks or individually), shall, through cooperative decision-making, ensure that the following principles apply to airspace utilisation and capacity management:
- (a) airspace structures shall be planned to facilitate flexible and timely airspace use and management with regard to routing options, traffic flows, sector configuration schemes and the configuration of other airspace structures;
 - (b) airspace structures should accommodate the establishment of additional route options while ensuring their compatibility with the existing capacity considerations and sector design limitations.

PART D

Ongoing monitoring of performance achievements at network level

1. To ensure the regular performance improvements, the Network Manager, shall carry out a regular post-operations review of the effectiveness of the implemented airspace structures, through cooperative decision-making.
 2. This review shall include, in particular:
 - (a) traffic demand evolution;
 - (b) capacity and flight efficiency performance and constraints at State, functional airspace block or network level;
 - (c) evaluation of airspace utilisation aspects from both a civil and military perspective;
 - (d) evaluation of sectorisation and sector configurations used;
 - (e) evaluation of airspace structures integrity and continuity.
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ANNEX II

AIR TRAFFIC FLOW MANAGEMENT FUNCTION

PART A

Objective and scope

1. The objective of the Air Traffic Flow Management (ATFM) function is to:
 - (a) ensure the achievement of an efficient utilisation of the available capacity of the European air traffic management network (EATMN);
 - (b) facilitate the planning, coordination and execution of ATFM measures taken by all operational stakeholders.
 - (c) facilitate accommodation of military requirements and crisis management responses;
 - (d) ensure regional connectivity and interoperability of the European network within the ICAO EUR Region and with adjacent ICAO regions.
2. ATFM and contingency procedures referred to in point 15 of Part B of this Annex shall ensure better traffic predictability and optimise the available capacity of the EATMN (including at airports) and aim at increasing the consistency between airport slots and flight plans.
3. ATFM function shall follow detailed working arrangements for the implementation of ATFM measures. All operational stakeholders involved shall adhere to rules and procedures that ensure that air traffic control capacity is used safely and to the maximum extent possible;
4. The ATFM function shall cover all ATFM phases (strategic, pre-tactical, tactical and post operations) as identified in the ICAO provisions referred to in the Appendix. It shall comply with these ICAO provisions.
5. The ATFM function shall apply to the following parties, or agents acting on their behalf, involved in ATFM processes:
 - (a) aircraft operators;
 - (b) air traffic service (ATS) providers, including ATS units, ATS reporting offices and aerodrome control service units;
 - (c) aeronautical information services providers;
 - (d) entities involved in airspace management;
 - (e) airport operators;
 - (f) the central unit for ATFM, operated by the Network Manager;
 - (g) local ATFM units as referred to in point 6 of Part A of this Annex;
 - (h) slot coordinators at coordinated airports.
6. 'Local ATFM Unit' means a flow management entity operating on behalf of one or more other flow management entities as the interface between the central unit for ATFM and an ATS unit or a group of ATS units. It can operate at ATS unit level, at national level, at functional airspace block level or at any other sub-regional level;
7. The local ATFM units and the Network Manager through its central unit for ATFM shall support the execution of the ATFM function.

PART B

Planning and operational principles

1. The Network Manager and the operational stakeholders shall plan and execute the tasks supporting the ATFM function for:

- (a) all phases of all flights intended to operate or operating as general air traffic and in accordance with the Instrument Flight Rules (IFR) in whole or in part;
 - (b) all phases of flights referred to in point (a) and air traffic management.
2. Appropriate cooperation and coordination shall be ensured between the Network Manager working arrangements supporting the ATFM function and the relevant ICAO working arrangements covering ATFM aspects at the interfaces.
3. Military aircraft operating as general air traffic shall be subject to ATFM measures when operating or intending to operate within airspace or airports to which ATFM measures apply.
4. The ATFM function shall be governed by the following principles:
- (a) ATFM measures shall:
 - (i) support safe operations and prevent excessive air traffic demand compared with declared ATC capacity of sectors and aerodromes including runways;
 - (ii) use EATMN capacity to the maximum extent possible in order to optimise the efficiency of the EATMN and minimise adverse effects on operators;
 - (iii) optimise the EATMN capacity made available through the development and application of capacity enhancing measures by ATS units;
 - (iv) support the management of critical events.
 - (b) the allocation of ATFM departure slots shall give priority to flights according to the order of their planned entry into the location at which the ATFM measure will apply, unless specific circumstances such as those stemming from security and defence needs, require application of a different priority rule which is agreed and is of benefit to the EATMN;
 - (c) trajectory times in the planning and execution phases shall be consistent with any applied ATFM measures and shall be communicated by the Network Manager to aircraft operators, ATS units and local ATFM units;
 - (d) flights departing from the geographical area where ATFM measures are applied and adjacent Flight Information Regions as described in the appropriate ICAO documentation shall be subject to ATFM slot allocation. Flights departing from other areas shall be exempted from ATFM slot allocation but shall however be subject to route, traffic orientations schemes and trajectory time constraints.
5. Member States shall ensure that:
- (a) the ATFM function is available to parties concerned 24 hours a day and that the local ATFM unit, on an exclusive basis, covers a designated area in respect of the airspace under their responsibility within the geographical area where ATFM measures are applied;
 - (b) in order to ensure efficient airspace planning allocation and efficient use, as well as direct links between airspace management and ATFM, consistent procedures are established for the cooperation between the parties involved in the ATFM function, ATS units and entities involved in airspace management;
 - (c) common procedures for requesting exemption from an ATFM departure slot are in accordance with the ICAO provisions referred to in the Appendix. Those procedures shall be coordinated with the Network Manager through its central unit for ATFM and published in national aeronautical information publications.

6. The Network Manager shall:

- (a) optimise the overall performance of the EATMN through planning, coordination and implementation of agreed ATFM measures, including for transition plans for the entry into service of major airspace or ATM systems improvements and for adverse weather, through cooperative decision-making;
- (b) consult operators on the definition of ATFM measures;
- (c) conclude working arrangements with the local ATFM units;
- (d) ensure the development, availability and effective implementation of ATFM measures (for all ATFM phases), together with local ATFM units; when such ATFM measures have a wider network impact, the Network Manager shall establish, through cooperative decision-making, the nature of the ATFM measures to be implemented;
- (e) in coordination with local ATFM units, identify alternative routings to avoid or alleviate congested areas, taking into account the overall performance of the EATMN;
- (f) offer a re-routing to those flights that would optimise the effect of point (e);
- (g) in coordination with the ATS units and the local ATFM units determine, coordinate and ensure the implementation of appropriate measures aimed at providing the necessary capacity to accommodate traffic demand throughout relevant portions of their area of responsibility;
- (h) provide information on ATFM operations in a timely manner to aircraft operators, local ATFM units and ATS units, including:
 - (i) planned ATFM measures;
 - (ii) impact of ATFM measures on take-off time and flight profile of individual flights;
- (i) monitor the occurrences of missing flight plans and multiple flight plans that are filed;
- (j) suspend a flight plan when, considering the time tolerance, the ATFM departure slot cannot be met and a new estimated off-block time is not known;
- (k) monitor the number of exemptions from ATFM measures granted;
- (l) develop, maintain and publish contingency plans defining the actions to be taken by relevant operational stakeholders in the event of a major failure of a component of the ATFM function at network level which would result in significant reductions in capacity or major disruptions of traffic flows, or both;
- (m) share with all operational stakeholders all appropriate post operational analyses and evaluations;
- (n) enable the appropriate preparation and the predictability of the EATMN, ensure working arrangements to collect timely and updated traffic demand information for all ATFM phases from the airspace users and share this with the local ATFM units.

7. The ATS units shall:

- (a) coordinate ATFM measures, through the local ATFM unit(s), with the Network Manager in order to ensure that the measures chosen aim at the optimisation of the overall performance of the EATMN;
- (b) ensure that ATFM measures applied to airports are coordinated with the airport operator concerned, in order to ensure efficiency in airport planning and usage for the benefit of all concerned operational stakeholders;
- (c) notify to the Network Manager, through the local ATFM unit, all events, including transition plans for the entry into service of major airspace or ATM systems improvements and adverse weather, that may impact air traffic control capacity or air traffic demand and proposed mitigation;

- (d) provide the Network Manager and the local ATFM units with the following data and subsequent updates, as technically feasible, in a timely manner and ensuring its quality:
 - (i) airspace and route structures;
 - (ii) airspace and route availability including availability through application of flexible use of airspace in accordance with Regulation (EC) No 2150/2005;
 - (iii) ATS unit sector configurations and activations;
 - (iv) aerodrome taxi times and runway configurations;
 - (v) air traffic control sector, and aerodrome capacities including runways;
 - (vi) updated flight positions;
 - (vii) deviations from flight plans;
 - (viii) actual flight take-off times;
 - (ix) information on the operational availability of the Communication Navigation Surveillance (CNS)/ATM infrastructure.
- 8. The data referred to in paragraph 7(d) shall be made available to and from the Network Manager and the operational stakeholders.
- 9. To ensure network predictability, the ATS unit at the departure airport shall ensure that flights not adhering to their estimated off blocks time, taking into account the established time tolerance or the flight plan of which has been rejected or suspended are not given a take-off clearance.
- 10. The local ATFM units shall:
 - (a) act as point of contact and interface between the Network Manager providing central ATFM, on the one hand, and designated areas and their associated aerodromes and ATS units (military and civil) within their area of responsibility, on the other hand, on the basis of roles and responsibilities agreed through appropriate working arrangements with the Network Manager;
 - (b) establish appropriate local procedures in line with the procedures established by the Network Manager providing central ATFM, including temporary procedures;
 - (c) provide the Network Manager providing central ATFM with all the required local data for the execution of the ATFM function;
 - (d) ensure, in coordination with relevant ATS units and the Network Manager providing central ATFM, appropriate ATFM measures implementation for an optimum flow of traffic and balanced demand and capacity by coordinating efficient use of available capacity. When those measures have a wider network impact regional coordination under the aegis of the Network Manager shall be ensured;
 - (e) notify to the Network Manager all events, including transition plans for the entry into service of major airspace or ATM systems improvements and for adverse weather, that may impact air traffic control capacity or air traffic demand and proposed mitigations;
 - (f) ensure, in coordination with relevant ATS units and the Network Manager, post-operation analyses to identify means to improve the network performance;
 - (g) have in place continuously updated pre-defined contingency plans detailing how the area under their responsibility will be handled in order to enable the Network Manager to assist local ATFM units in contingency operations. Those local plans shall be shared and coordinated with the Network Manager.
- 11. Where an ATS reporting office is established, it shall facilitate the exchange of information between pilots or operators and the local ATFM unit or the Network Manager providing central ATFM.

12. The aircraft operators shall:

- (a) provide a single flight plan for each intended flight. The filed flight plan shall correctly reflect the intended flight profile;
- (b) ensure that all relevant ATFM measures and changes thereto are incorporated into the planned flight operation;
- (c) participate in the working arrangements established by the Network Manager facilitating timely and updated information on air traffic demand for all ATFM phases.

13. Airport operators shall:

- (a) have arrangements with the local ATS unit to:
 - (i) exchange and coordinate with the relevant local ATFM units and the Network Manager all information on capacity and air traffic demand and their evolution for all ATFM phases, in particular ahead of flight schedule publication;
 - (ii) notify the relevant local ATFM units and the Network Manager, all events that may impact air traffic control capacity or air traffic demand.
- (b) establish processes to assess the demand and the impact on the demand of special events that are applicable to all ATFM phases.

14. With respect to consistency between flight plans and airport slots:

- (a) where requested by an airport slot coordinator or an airport operator of a coordinated airport, the Network Manager or the local ATFM unit shall provide them with the flight plan of a flight operating at that airport, before that flight takes place. The airport slot coordinators or the airport operators of coordinated airports shall provide the infrastructure required for the reception of the flight plans provided by the Network Manager or the local ATFM unit for;
- (b) before flight, aircraft operators shall provide aerodromes of departure and arrival with the necessary information to enable a correlation to be made between the flight designator contained in the flight plan and that notified for the corresponding airport slot; this correlation shall be provided by the Network manager, the local ATFM unit, the local ATS unit or the airport operator as appropriate;
- (c) any aircraft operator, airport operator and ATS unit shall report to the airport slot coordinator on repeated operation of air services at times that are significantly different 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 airport or air traffic operations;
- (d) the Network Manager shall report 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.

15. When implementing arrival and departure planning information (DPI), airport local operational stakeholders shall ensure full coordination with the Network Manager in the establishment and operation of that functionality and the associated data exchange.

16. With respect to critical events:

- (a) the Network Manager shall develop, maintain and publish ATFM procedures for handling critical events at the network level. ATFM procedures shall set out the actions to be taken by relevant operational stakeholders in the event of a major disruption of a component of the network which would result in significant reduction in capacity or major disruptions of traffic flows, or both;

- (b) in the preparation for critical events, ATS units and airport operators, shall coordinate the relevance and content of the contingency procedures with the Network Manager and local ATFM units, aircraft operators affected by critical events, and as appropriate the airport slot coordinators, including any adjustment to priority rules. The contingency procedures shall include:
- (i) organisational and coordination arrangements;
 - (ii) ATFM measures to manage access to affected areas to prevent excessive air traffic demand compared with declared capacity of the whole or part of the airspace or airports concerned;
 - (iii) circumstances, conditions and procedures for the application of priority rules for flights, which respect Member States' essential security or defence policy interests;
 - (iv) recovery arrangements.

PART C

Monitoring of the ATFM Function

1. In order to ensure the predictability and thus the performance of the EATMN, information about and adherence to planned operations and the ATFM measures are paramount. Therefore, a specific monitoring of the ATFM function shall be put in place.
 2. Member States shall ensure that where adherence to ATFM departure slots at an airport of departure is 80 % or less during a year, as identified by the Network Manager, the ATS unit at that airport shall provide relevant information on the non-compliance and the actions taken to ensure adherence to ATFM departure slots. Such actions shall be indicated in a report to be submitted by the Member State concerned to the Commission.
 3. In case of any failure to adhere to flight plan rejections or suspensions, the ATS unit at the airport concerned shall provide relevant information to the Network Manager on the non-adherence and the actions taken to ensure adherence. Such actions shall be indicated in a report to be submitted by the Network Manager to the Commission.
 4. In case granted exemptions are in excess of 0,6 % of a Member State's annual departures, the Network Manager shall notify that Member State. Where a Member State has been notified, it shall produce a report providing details of the exemptions granted and submit the report to the Commission.
 5. The Network Manager shall ensure that the aircraft operator is notified of non-adherence to ATFM measures resulting from application of the requirements related to missing and multiple flight plans. Where an aircraft operator has been notified, it shall produce a report providing details of the circumstances and the actions taken to correct such non-adherence. The Network Manager shall produce an annual report to be submitted to the Commission providing details of missing flight plans, or multiple flight plans that are filed.
 6. The Network Manager shall conduct an annual review of adherence to ATFM measures to ensure that all operational stakeholders improve the level of adherence to those measures.
 7. The Network Manager shall produce annual reports and submit them to the Commission. The reports shall indicate the quality of the ATFM function and shall include details of:
 - (a) causes of ATFM measures;
 - (b) impact of ATFM measures;
 - (c) adherence to ATFM measures;
 - (d) contributions by all operational stakeholders to the optimisation of the overall network effect;
 - (e) recommendations on these various points to improve the network performance.
 8. The Network Manager shall ensure that an archive of ATFM data listed in this Annex, flight plans, operational logs and relevant contextual data is created and maintained. That data shall be retained for two years from their submission and made available to the Commission, Member States, ATS units and aircraft operators, as required. That data shall be also made available to airport slot coordinators and airport operators to assist them in their regular assessment of the declared capacity.
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*Appendix***List of the ICAO provisions for the purpose of air traffic flow management**

1. Chapter 3 paragraph 3.7.5 (Air Traffic Flow Management) of Annex 11 to the Chicago Convention — Air Traffic Services (14th edition — July 2016, incorporating Amendment No 50A)
 2. Chapter 3 (ATS Capacity and Air Traffic Flow Management) of ICAO Doc 4444, Procedures for Air Navigation Services — Air Traffic Management (PANS-ATM) (16th edition — 2016, incorporating Amendment No 7A)
 3. Chapter 2 and 8 (Air Traffic Flow Management) of ICAO Doc 7030, European (EUR) Regional Supplementary Procedures (5th edition 2007).
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ANNEX III

THE RADIO FREQUENCY FUNCTION

PART A

Objective and scope

1. The objectives of this function are:
 - (a) to maximize the use of the European aeronautical radio spectrum through improvements in frequency management procedures and planning criteria in order to prevent shortage of frequencies which would reduce network capacity;
 - (b) to improve the transparency of frequency management practices enabling the accurate assessment of the efficient use of frequencies and the determination of solutions to meet future demands for frequencies;
 - (c) to increase the effectiveness of the frequency management processes via the promotion of best practices and the development of corresponding tools.
2. The Network Manager and national frequency managers shall agree on overall priorities for the function to improve the design and operation of the European aviation network. Those priorities shall be documented in the form of a frequency part of the Network Strategy Plan and the Network Operations Plan upon which stakeholders are to be consulted. In particular, prioritisation may consider specific bands, areas and services.

PART B

Requirements for the execution of the function

1. Member States shall appoint a competent person, authority or organisation as national frequency manager with the responsibility for ensuring that frequency assignments are made, modified and terminated in accordance with this Regulation. Member States shall notify to the Commission and to the Network Manager the names and addresses of the national frequency managers and shall notify any change in the appointments in a timely manner.
2. The Network Manager shall prepare and coordinate network-related strategic spectrum aspects which are to be appropriately documented in the Network Strategy Plan and the Network Operations Plan. The Network Manager shall support the Commission and Member States in the preparation of common aviation positions for coordinated Member State contributions to international forums, and in particular to the European Conference of Postal and Telecommunications Administrations (CEPT) and International Telecommunications Union (ITU).
3. At the request of Member States, the Network Manager shall inform the Commission and undertake actions with the Commission and the European Conference of Postal and Telecommunications Administrations (CEPT) to address any concerns with other industry sectors.
4. The national frequency managers shall report to the Network Manager, radio interference cases that impact the European aviation network. The Network Manager shall record occurrence of radio interference cases and support the national frequency managers in their assessment. At the request of national frequency managers, the Network Manager shall coordinate actions or provide any support necessary to resolve or mitigate such cases.
5. The Network Manager and the national frequency managers shall further develop and enhance frequency management procedures, planning criteria, data sets and processes to improve the use and occupancy of radio spectrum by general air traffic users. At the request of the Member States, the Network Manager shall propose to extend the application of these developments to regional level.
6. When a frequency assignment is required, the individual or organisation applying for the use of a frequency shall file a request with the appropriate national frequency manager with all the relevant data and justification.

7. The national frequency managers and the Network Manager shall assess and prioritise frequency requests on the basis of operational requirements and agreed criteria. The Network Manager in cooperation with the national frequency managers shall determine the impact of frequency requests on the network. The Network Manager shall establish the assessment and prioritisation criteria in consultation with the national frequency managers and maintain and update them thereafter as necessary.
8. Where there is no impact on the network, the national frequency managers shall determine suitable frequency(ies) in reply to the frequency request taking into account the requirements of point 12.
9. Where there is an impact on the network, the Network Manager shall determine suitable frequency(ies) in reply to the frequency request, taking into account the following requirements:
 - (a) the need to provide safe communication, navigation and surveillance infrastructure services;
 - (b) the need to optimise the use of finite radio spectrum resources;
 - (c) the need for cost-effective, fair and transparent access to the radio spectrum;
 - (d) the operational requirements of the applicant(s) and operational stakeholders;
 - (e) the predicted future demand for radio spectrum;
 - (f) the provisions contained in the ICAO European Frequency Management Manual.
10. When a suitable frequency as referred to in points 11 and 12 cannot be determined, the national frequency managers may request the Network Manager to undertake a specific frequency search. In order to identify a solution for the national frequency managers, the Network Manager supported by the national frequency managers may undertake a specific examination of the frequency usage situation in the concerned geographical area.
11. The national frequency manager shall assign suitable frequency(ies) determined in points 12 or 13.
12. The national frequency manager shall register each frequency assignment in the central register by including the following information:
 - (a) data as specified in the ICAO European Frequency Management Manual including relevant associated technical and operational data;
 - (b) enhanced data requirements as referred to in point 6;
 - (c) a description of the operational use of the frequency assignment;
 - (d) the contact details of the operational stakeholder making use of the assignment.

Member States shall make use of the central register to fulfil their administrative frequency assignment registration obligations towards ICAO.
13. When assigning the frequency to the applicant, the national frequency manager shall include conditions of use. As a minimum, those conditions shall specify that the frequency assignment:
 - (a) remains valid as long as it is being used to meet the operational requirements described by the applicant;
 - (b) may be subject to a frequency shift request and that such shifts will need to be implemented within a limited timeframe;
 - (c) is subject to modification once the operational use described by the applicant changes.
14. The national frequency manager(s) shall ensure that any required frequency shift, modification or termination is performed by the individual or organisation assigned with the frequency concerned within the agreed timeframe and that the central register is updated accordingly. The national frequency manager(s) shall forward appropriate justification to the Network Manager when those actions cannot be performed.

15. The national frequency managers shall ensure that the information referred to in point 12 of Part B concerning all frequency assignments used in the European aviation network are available in the central register.
16. The Network Manager and the national frequency manager(s) shall perform monitoring and evaluations of aviation frequency bands and frequency assignments based on transparent procedures in order to ensure their correct and efficient use. The Network Manager shall set up such procedures in consultation with the national frequency managers and shall maintain and update them thereafter as necessary. In particular, the Network Manager shall identify any discrepancy between the central register, the operational purpose and the actual use of the frequency assignment which may have a detrimental impact on the radio frequency function. The Network Manager shall notify the national frequency manager of such discrepancies for their resolution, within an agreed timeframe.
17. The Network Manager shall ensure the availability of common tools to support central and national planning, coordination, registration, auditing and optimisation. In particular, tools shall be developed by the Network Manager to support the analysis of the central register data to monitor the efficiency of the function and to design and implement the frequency optimisation process under point 7.

PART C

Requirements for the organisation of the frequency function

1. The cooperative decision-making between national frequency managers and the Network Manager shall be based on arrangements that at least specify:
 - (a) the criteria for the assessment of operational requirements and their prioritisation;
 - (b) minimum timescales for the coordination of new or amended radio frequency assignments;
 - (c) mechanisms to ensure that the relevant European Union-wide performance targets are met by the Network Manager and the national frequency managers;
 - (d) that enhanced frequency management procedures, criteria and processes are not adversely affecting those applied by other countries in the context of ICAO Regional procedures;
 - (e) the requirements to ensure an appropriate consultation on new or amended management arrangements between Member States and all affected stakeholders at a national and European level.
 2. Evolution of arrangements for the coordination of radio frequencies shall be specified in cooperation with the national frequency managers and shall reduce overheads as far as practical.
 3. Coordination on the strategic and tactical use of radio frequencies with third countries not participating in the work of the Network Manager shall be conducted through the ICAO regional working arrangements. This shall be done with a view to enable access of third countries to the work of the Network Manager.
 4. Member States shall ensure that the use of aviation frequency bands by military users is appropriately coordinated through cooperative decision making with the national frequency managers and the Network Manager.
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ANNEX IV

THE RADAR TRANSPONDER CODES FUNCTION

PART A

Objectives and general requirements**Transponder Code (TC):**

1. The objectives of this function are:
 - (a) to improve the robustness of the code allocation process through allocation of clear roles and responsibilities to all involved stakeholders, with the overall network performance at the centre of code allocation determination;
 - (b) to provide increased transparency of code allocations and of the actual code usage enabling the better assessment of the overall network efficiency.
2. The Network Manager shall allocate the Secondary Surveillance Radar (SSR) transponder codes to the Member States and the air navigation service providers in a manner that optimises their safe and efficient distribution taking the following into account:
 - (a) the operational requirements of all operational stakeholders;
 - (b) the actual and predicted levels of air traffic;
 - (c) the required use of SSR transponder codes in compliance with relevant provisions of the ICAO Regional Air Navigation Plan, European Region Facilities and Services Implementation Document and guidance material.
3. The Network Manager shall make available at all times to Member States, air navigation service providers and third countries an SSR transponder code allocation list that describes the complete and up-to-date allocation of SSR codes.
4. A formal process for establishing, assessing and coordinating the requirements for SSR transponder code allocations shall be implemented by the Network Manager, taking into account all required civil and military uses of SSR transponder codes.
5. The formal process laid down in point 4 shall include, as a minimum, relevant agreed procedures, timescales and performance targets for the completion of the following activities:
 - (a) submission of applications for SSR transponder code allocations;
 - (b) assessment of applications for SSR transponder code allocations;
 - (c) coordination of proposed amendments to SSR code transponder allocations with Member States in accordance with the requirements laid down in Part B;
 - (d) periodic audit of the code allocations and needs with a view to optimisation of the situation, including re-allocation of existing codes allocations;
 - (e) periodic amendment, approval and distribution of the overall SSR code transponder allocation list referred to in point 3;
 - (f) notification, assessment and resolution of unplanned conflicts between assignments of SSR transponder codes;
 - (g) notification, assessment and resolution of wrong assignments of SSR transponder codes, detected at code retention checks;
 - (h) notification, assessment and resolution of unplanned shortfalls in allocations of SSR transponder codes;
 - (i) provision of data and information in accordance with the requirements laid down in Part C.

6. Applications for SSR transponder code allocations received as part of the process laid down in point 4 shall be checked by the Network Manager for compliance with the requirements of the process for format and data conventions, completeness, accuracy, timeliness, and justification.
7. Member States shall ensure that SSR transponder codes are assigned to an aircraft in accordance with the SSR transponder code allocation list referred to in point 3.
8. The Network Manager shall operate, on behalf of the Member States and air navigation service providers a centralised SSR transponder code assignment and management system for the automatic assignment of SSR transponder codes to general air traffic.
9. The Network Manager shall implement procedures and tools for the regular evaluation and assessment of the actual use of SSR transponder codes by Member States and air navigation service providers.
10. The Network Manager, Member States and air navigation service providers shall agree on plans and procedures to support the periodic analysis and identification of future SSR transponder code requirements. That analysis shall include the identification of potential performance impacts created by any predicted shortfalls in the allocations of SSR transponder codes.
11. Operations manuals containing the necessary instructions and information to enable the network function to be conducted in accordance with the requirements of this Regulation shall be developed and maintained by the Network Manager. Those operations manuals shall be distributed and maintained in accordance with appropriate quality and documentation management processes.

Mode S Interrogator Code (MIC):

12. The objectives of this process are the following:
 - (a) to perform a coordinated Mode S interrogator code allocation enabling the overall network efficiency;
 - (b) to provide the regulatory basis allowing better enforcement and oversight.
13. The Network Manager shall allocate the interrogator codes to civil and military Mode S interrogators in a manner that optimises the safe and efficient operation of air traffic surveillance and civil-military coordination taking the following into account:
 - (a) the operational requirements of all operational stakeholders;
 - (b) Commission Regulation (EC) No 262/2009 ⁽¹⁾;
 - (c) the required management of Mode S interrogator codes in compliance with the provisions of the European principles and procedures for the allocation of Secondary Surveillance Radar Mode S Interrogator Codes (IC) (ICAO EUR Doc 024)
14. The Network Manager shall operate, on behalf of the Member States, a centralised interrogator code allocation system ⁽²⁾ for the coordinated allocation of interrogator codes to Mode S interrogators.
15. Member States shall provide a centralised interrogator code allocation service to Mode S operators through the interrogator code allocation system.
16. The Network Manager shall make available at all times to Member States, Mode S operators and third countries an interrogator code allocation plan that provides the most recently approved complete set of interrogator code allocations in ICAO European region.
17. The Network Manager shall implement a formal process for establishing, assessing and coordinating the requirements for interrogator code allocations, taking into account all required civil and military uses of interrogator codes.
18. The formal process laid down in point 17 shall include, as a minimum, relevant agreed procedures, timescales and performance targets for the completion of the following activities:
 - (a) submission of applications for interrogator code allocations;

⁽¹⁾ Commission Regulation (EC) No 262/2009 of 30 March 2009 laying down requirements for the coordinated allocation and use of Mode S interrogator codes for the single European sky (OJ L 84, 31.3.2009, p. 20).

⁽²⁾ Defined in Article 2(11) of Regulation (EC) No 262/2009.

- (b) assessments of applications for interrogator code allocations;
 - (c) coordination of proposed amendments to interrogator code allocations with Member States in accordance with the requirements laid down in Part B;
 - (d) periodic audit of the interrogator code allocations and needs with a view to improve the situation, including re-allocation of existing interrogator code allocations;
 - (e) periodic amendment, approval and distribution of the overall interrogator code allocation plan referred to in point 16;
 - (f) notification, assessment and resolution of unplanned interrogator code conflicts between Mode S interrogators;
 - (g) notification, assessment and resolution of unplanned shortfalls in allocation of interrogator codes;
 - (h) provision of data and information in accordance with the requirements laid down in Part C.
19. The Network Manager shall check the applications for interrogator code allocations received as part of the process laid down in point 18 for compliance with the requirements of the process for format and data conventions, completeness, accuracy, timeliness, and justification.
20. As part of the process laid down in point 18, the Network Manager shall:
- (a) perform interrogator code allocation plan update simulations on the basis of the pending applications;
 - (b) prepare a proposed update of the interrogator code allocation plan for approval by the Member States affected by it;
 - (c) ensure that the proposed update to the interrogator code allocation plan meets to the greatest extent possible the operational requirements of the interrogator code applications;
 - (d) update, and communicate to Member States the interrogator code allocation plan immediately after its approval, without prejudice to national procedures for the communication of information on Mode S interrogators operated by military.
21. The Network Manager shall implement procedures and tools for the regular evaluation and assessment of the actual use of Mode S interrogator codes by civil and military Mode S operators.
22. The Network Manager, Member States, and Mode S operators shall agree the plans and procedures to support the periodic analysis and identification of future Mode S interrogator code requirements. That analysis shall include the identification of potential performance impacts created by any predicted shortfalls in the allocations of interrogator codes.
23. Operations manuals containing the necessary instructions and information to enable the network function to be conducted in accordance with the requirements of this Regulation shall be developed and maintained by the Network Manager. Those operations manuals shall be distributed and maintained in accordance with appropriate quality and documentation management processes.

PART B

Requirements for the specific consultation mechanisms

Transponder Code:

1. The Network Manager shall establish a dedicated mechanism for the coordination and consultation of detailed SSR transponder code allocation arrangements. That mechanism shall:
- (a) ensure the impact of the use of SSR transponder codes in third countries is taken into account through participation in the SSR transponder code management working arrangements set out in the relevant provisions of the ICAO Regional Air Navigation Plan, European Region Facilities and Services Implementation Document;

- (b) ensure the SSR transponder code allocation lists referred to in point 3 of Part A is compatible with the code management plan set out in the relevant provisions of the ICAO Regional Air Navigation Plan, European Region Facilities and Services Implementation Document;
 - (c) specify requirements to ensure that appropriate consultation on new or amended SSR transponder code management arrangements is conducted with the Member States concerned;
 - (d) specify requirements to ensure that appropriate consultation on new or amended SSR transponder code management arrangements is conducted by Member States with all stakeholders concerned at a national level;
 - (e) ensure coordination with third countries on the strategic and tactical use of SSR transponder codes is conducted through the SSR transponder code management working arrangements set out in the relevant provisions of the ICAO Regional Air Navigation Plan, European Region Facilities and Services Implementation Document;
 - (f) specify minimum timescales for the coordination and consultation of proposed new or amended surveillance interrogator and SSR transponder code allocations;
 - (g) ensure changes to the SSR transponder code allocation list are subject to the approval of those Member States concerned by the change;
 - (h) specify requirements to ensure that changes to the SSR transponder code allocation list are communicated to all stakeholders immediately after its approval, without prejudice to national procedures for the communication of information on the use of SSR transponder codes by military authorities.
2. The Network Manager, in coordination with national military authorities, shall ensure that the necessary measures are taken to ascertain that the allocation and use of SSR transponder codes for military needs have no detrimental impact on the safety or efficient flow of general air traffic.

Mode S Interrogator Code:

3. The Network Manager shall establish a dedicated mechanism for the coordination and consultation of detailed Mode S interrogator code allocation arrangements. The mechanism shall:
- (a) specify timescales for the coordination and consultation of proposed new or amended Mode S interrogator code allocations;
 - (b) ensure changes to the Mode S interrogator code allocation plan are subject to the approval of those Member States concerned by the change;
 - (c) ensure coordination with third countries on the strategic and tactical use of Mode S interrogator codes is conducted through the Mode S interrogator code management working arrangements;
 - (d) specify requirements to ensure that changes to the Mode S interrogator code allocation plan are communicated to all stakeholders immediately after its approval, without prejudice to national procedures for the communication of information on the use of Mode S interrogator code and SSR transponder codes by military authorities.
4. The Network Manager shall ensure that appropriate consultation on new or amended interrogator code management arrangements is conducted with the Member States through cooperative decision-making.
5. The Network Manager, in coordination with national military authorities, shall ensure that the necessary measures are taken to ascertain that the allocation and use of Mode S interrogator code for military needs have no detrimental impact on the safety or efficient flow of general air traffic.

PART C

Requirements for the provision of data

Transponder Code:

1. Applications submitted for new or amended allocations of SSR transponder codes shall comply with the format and data conventions, completeness, accuracy, timeliness, and justification requirements of the process laid down in point 4 of Part A.

2. Member States shall provide the Network Manager with the following data and information within agreed timescales prescribed by the Network Manager to support the provision of the network function for SSR transponder codes:
 - (a) an up-to-date record of the allocation and use of all SSR transponder codes within their area of responsibility, subject to any security constraints concerning full disclosure of specific military code allocations not used for general air traffic;
 - (b) justification to demonstrate that existing and requested allocations of SSR transponder codes are the minimum necessary to meet operational requirements;
 - (c) details of any allocations of SSR transponder codes that are no longer operationally required and that can be released for re-allocation within the network;
 - (d) reports of any actual unplanned shortfall in SSR transponder code allocations;
 - (e) details of any change in the installation planning or in the operational status of systems or constituents that may impact on the assignment of SSR transponder codes to flights.
3. Air navigation service providers shall provide the Network Manager with the following data and information within agreed timescales prescribed by the Network Manager to support the provision of the network function for SSR transponder codes:
 - (a) Enhanced Tactical Flow Management System's Correlated Position Reports containing SSR transponder code assignments for general air traffic conducting flights under instrument flight rules;
 - (b) reports of any actual unplanned conflict or hazard caused by an actual operational SSR transponder code assignment, including information of how the conflict was resolved.
4. Responses by Member States and air navigation service providers to the coordination of proposed amendments to SSR code transponder allocations and updates of the SSR transponder code allocation list shall as a minimum:
 - (a) identify whether or not any conflict or hazard between SSR transponder code allocations is foreseen;
 - (b) confirm whether or not operational requirements or efficiency will be adversely affected;
 - (c) confirm that amendments to SSR transponder code allocations can be implemented in accordance with required timescales.

Mode S Interrogator Code:

5. Applications submitted for new or amended allocations of interrogator code shall comply with the format and data conventions, completeness, accuracy, timeliness, and justification requirements of the process laid down in point 17 of Part A.
6. Member States shall provide the Network Manager with the following data and information within agreed timescales prescribed by the Network Manager to support the provision of the interrogator code allocation service:
 - (a) characteristics of Mode S interrogators as specified in Regulation (EC) No 262/2009;
 - (b) details of any change in the installation planning or in the operational status of Mode S interrogators or constituents that may impact on the allocation of interrogator codes to Mode S interrogators.
 - (c) justification to demonstrate that existing and requested allocations of interrogator codes are the minimum necessary to meet operational requirements;
 - (d) allocations of interrogator code that are no longer operationally required and that can be released for re-allocation within the network;
 - (e) reports of any actual unplanned shortfall in interrogator code allocations.

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7. The Network Manager shall use the responses provided by Member States to the interrogator code allocation plan proposal including:
 - (a) identification of any foreseen conflict or hazard between Mode S interrogator code allocations;
 - (b) confirmation of whether or not operational requirements or efficiency will be adversely affected;
 - (c) confirmation that amendments to Mode S interrogator code allocations can be implemented in accordance with required timescales.
 8. The Network Manager shall support Member States in resolving the MIC conflict reported by the Members States or Mode S operators.
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ANNEX V

TEMPLATE FOR NETWORK STRATEGY PLAN

The Network Strategy Plan shall be based on the following structure:

1. INTRODUCTION

1.1. Scope of the Network Strategy Plan (geographical and time period)

1.2. Preparation of the plan and validation process

2. OVERALL CONTEXT AND REQUIREMENTS

2.1. Description of the current and planned network situation including ERND, ATFM, airports and scarce resources

2.2. Challenges and opportunities related to the time period of the plan (including traffic demand forecast and worldwide evolution)

2.3. Performance objectives and business requirements as expressed by the different stakeholders and the Union-wide performance targets

3. STRATEGIC VISION

3.1. Description of the strategic way the network will develop and progress to successfully respond to the performance targets and business requirements

3.2. Consistency with the performance scheme

3.3. Consistency with the European ATM master plan

3.4. Consistency with common projects set up in accordance with Commission Implementing Regulation (EU) No 409/2013

4. STRATEGIC OBJECTIVES

4.1. Description of the network strategic objectives:

- (a) including the cooperative aspects of the participating operational stakeholders in terms of roles and responsibilities;
- (b) indicating how the strategic objectives will answer the requirements;
- (c) identifying how progress towards those objectives will be measured;
- (d) indicating how the strategic objectives will impact the industry and other concerned areas.

5. STRATEGIC PLANNING

5.1. Description of the short- and medium-term planning:

- (a) the priorities for each of the strategic objectives;
- (b) the implementation of each of the strategic objectives in terms of required deployment of technology, architectural impact, human aspects, involved cost, benefits as well as the necessary governance, resources and regulation;
- (c) the required operational stakeholder participation on each element of the plan including their roles and responsibilities;
- (d) the agreed level of involvement of the Network Manager to support the implementation of each element of the plan for each individual function.

5.2. Description of the long-term planning:

- (a) the intent to reach each of the strategic objectives in terms of required technology and corresponding research and development aspects, architectural impact, human aspects, business case, governance required, and regulation required as well as the associated safety and economic justification for those investments;
- (b) the required operational stakeholder participation on each element of the plan including their roles and responsibilities.

6. RISK ASSESSMENT

6.1. Description of the risks associated with the implementation of the plan.

6.2. Description of the monitoring process (including potential deviation from initial objectives).

7. RECOMMENDATIONS

7.1. Identification of the actions to be taken by the Union and Member States to support the implementation of the plan.

ANNEX VI

TEMPLATE FOR NETWORK OPERATIONS PLAN

The Network Operations Plan shall be based on the following general structure (that shall be tailored to the various individual functions and to the time horizon of the Network Operations Plan to reflect its rolling nature and its 3 to 5 year, annual, seasonal, weekly and daily periods):

1. INTRODUCTION**1.1. Scope of the Network Operations Plan (geographical and time period)****1.2. Preparation of the plan and validation process****2. DESCRIPTION OF THE NETWORK OPERATIONS PLAN, OPERATIONAL TARGETS AND OBJECTIVES**

- including the collaborative aspect of the participating operational stakeholders in terms of roles and responsibilities,
- indicating how the operational targets and objectives will be covered in the tactical, pre-tactical, short-term and medium-term phases of the Network Operations Plan and other performance targets set under the performance scheme,
- priorities set and resources needed for the planning period,
- indicating the impact on the ATM industry and other concerned areas.

3. OVERALL NETWORK OPERATIONS PLANNING PROCESS

- description of the overall network operations planning process,
- description of the strategic way the Network Operations Plan will evolve and progress to successfully respond to the operational performance requirements and other performance targets set under the performance scheme,
- description of tools and data used.

4. OVERALL CONTEXT AND OPERATIONAL REQUIREMENTS**4.1. Summary description of the past network operational performance****4.2. Challenges and opportunities related to the time period of the plan****4.3. Network traffic forecast in accordance with Appendices 1 and 2, including:**

- network forecast,
- air navigation service provider, functional airspace block and Area Control Centre (ACC) forecast,
- main airports forecast,
- analysis of the traffic forecast, including a range of scenarios,
- analysis of special events impact.

4.4. Network operational performance requirements, including:

- overall network capacity requirements,
- air navigation service provider, functional airspace block and ACC capacity requirements,
- airport capacity,
- analysis of the capacity requirements,
- overall network environment/flight efficiency requirements,
- overall network safety requirements,

- contingency requirements and continuity of services affecting the network.
- 4.5. Operational needs as expressed by the different stakeholders, including military
5. NETWORK OPERATIONAL PERFORMANCE ENHANCEMENT PLANS AND ACTIONS AT NETWORK LEVEL
- description of the plans and actions expected to be implemented at network level, including airspace, scarce resources and ATFM,
 - description of the operational performance contributions of each of the plans and actions.
6. OPERATIONAL PERFORMANCE ENHANCEMENT PLANS AND OPERATIONAL ACTIONS AT LOCAL LEVEL
- including description of each of the plans and operational actions expected to be implemented at local level,
 - description of the operational performance contributions of each of the plans and actions,
 - description of relations with third countries and work related to ICAO.
7. SPECIAL EVENTS
- overview of special events with significant ATM impact,
 - individual special events and their handling from a network perspective,
 - major military exercises.
8. MILITARY AIRSPACE REQUIREMENTS
- airspace availability: default days/times of availability of reserved airspace,
 - ad hoc requests for unplanned use of reserved airspace,
 - release of reserved airspace to civil use whenever not required, giving as much notice as possible.
9. CONSOLIDATED FORECAST AND ANALYSIS OF THE OPERATIONAL PERFORMANCE OF THE NETWORK
- ATFM delay/capacity targets and forecast at network, air navigation service provider, functional airspace block and ACC levels,
 - airport operational performance,
 - network environment/flight efficiency performance target and forecast,
 - impact of special events,
 - analysis of the operational performance targets and forecast.
10. IDENTIFICATION OF OPERATIONAL BOTTLENECK AREAS AND MITIGATION SOLUTIONS AT NETWORK AND LOCAL LEVEL
- identification of operational (safety, capacity, flight efficiency) bottlenecks and potential bottlenecks, their causes and agreed solutions or mitigation actions, including options for demand capacity balancing.
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*Appendix 1***Area Control Centres (ACCs)**

The Network Operations Plan shall give a detailed description per ACC of all the areas identified in this Appendix describing their planned operational enhancement actions, the prospects for the period, the traffic forecast, the delay target and forecast, the significant events that may affect the traffic, operational contacts.

The Network Manager shall include for each ACC:

- traffic forecast,
- an analysis of current operational performance,
- a quantified evaluation of the achieved capacity (capacity baseline),
- a quantified evaluation of the required capacity for various traffic evolutions scenarios (required capacity profile),
- a quantified evaluation of the planned operational enhancement actions at ACC level, as agreed with the air navigation service providers,
- delay target and forecast,
- an analysis of expected operational performance (safety, capacity, environment).

Each air navigation service provider shall provide the Network Manager with the following information to be included in the individual ACC description:

- local delay target,
 - assessment/confirmation of traffic forecast, taking into account local knowledge,
 - number of available sectors: sector configuration/opening scheme per season/day of week/time of day,
 - capacities/monitoring values for each sector/traffic volume per configuration/opening scheme,
 - planned or known special events, including dates/times and associated impact on operational performance,
 - details of operational enhancement measures planned, their implementation schedule and associated negative/positive impact on capacity and/or efficiency,
 - details of proposed and confirmed changes to the airspace structure and utilisation,
 - additional actions as agreed with the Network Manager,
 - ACC operational contacts.
-

*Appendix 2***Airports**

For those European airports that have an impact on the performance of the network, the Network Operations Plan shall give a detailed description of all the areas identified in this Appendix, as well as, describe planned operational enhancement measures, the prospects for the period, the traffic and delay forecast, the significant events that may affect the traffic and operational contacts.

The Network Manager shall include for each airport, in particular based on information received by airport operators and air navigation service providers:

- traffic forecast,
- an analysis of expected operational performance of the planned operational enhancement measures (safety, capacity, environment).

For each airport included in the Network Operations Plan, the airport operator and the local ATS unit shall have arrangements so as to provide the Network Manager with the following information to be included in the individual airport description:

- assessment/confirmation of traffic forecast, taking into account local knowledge,
 - runway capacity for each runway configuration, current and projected arrivals and departures,
 - a capacity specification for and duration of night period, where relevant,
 - details of operational enhancement measures planned, their implementation schedule and associated negative/positive impact on capacity and/or efficiency,
 - planned or known special events, including dates/times and associated impact on operational performance,
 - other planned capacity enablers,
 - additional actions as agreed with the Network Manager.
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