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**COMMISSION REGULATION (EU) No 677/2011**

**of 7 July 2011**

**laying down detailed rules for the implementation of air traffic management (ATM) network functions and amending Regulation (EU) No 691/2010**

**(Text with EEA relevance)**

**(OJ L 185, 15.7.2011, p. 1)**

Amended by:

		Official Journal		
		No	page	date
► <b><u>M1</u></b>	Commission Implementing Regulation (EU) No 390/2013 of 3 May 2013	L 128	1	9.5.2013
► <b><u>M2</u></b>	Commission Implementing Regulation (EU) No 970/2014 of 12 September 2014	L 272	11	13.9.2014

**COMMISSION REGULATION (EU) No 677/2011****of 7 July 2011****laying down detailed rules for the implementation of air traffic management (ATM) network functions and amending Regulation (EU) No 691/2010****(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 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) <sup>(1)</sup>, and in particular Article 11 thereof,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) <sup>(2)</sup>, and in particular Article 6 thereof,

Whereas:

- (1) Regulation (EC) No 551/2004 aims at supporting the concept of a progressively more integrated operating airspace within the context of the common transport policy and to establish common procedures for design, planning and management ensuring the efficient and safe performance of air traffic management. Network functions should be aimed at supporting initiatives at national level and at the level of functional airspace blocks.
- (2) The network functions should be a ‘service of general interest’ exercised for the European aviation network and contributing to the sustainable development of the air transport system by ensuring the required level of performance, compatibility and coordination of activities including those to ensure the optimal use of scarce resources.
- (3) The design of the European route network and the coordination of scarce resources according to Regulation (EC) No 551/2004 should be without prejudice to Member States’ sovereignty over their airspace and to the requirements of the Member States relating to public order, public security and defence matters according to Regulation (EC) No 549/2004.
- (4) 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) <sup>(3)</sup> creates a policy and legal framework for that area.
- (5) An impartial and competent body (the Network Manager) should be established to perform the tasks necessary for the execution of the network functions provided for in Regulation (EC) No 551/2004.

<sup>(1)</sup> OJ L 96, 31.3.2004, p. 1.

<sup>(2)</sup> OJ L 96, 31.3.2004, p. 20.

<sup>(3)</sup> OJ L 108, 24.4.2002, p. 1.

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- (6) The European route network should be designed to optimise routings from a gate-to-gate perspective in all phases of flight taking in particular into account flight efficiency and environmental aspects.
- (7) The work of the International Civil Aviation Organization (ICAO) and Eurocontrol in route design, frequency and secondary surveillance radar (SSR) transponder code management is recognised and should be used as a basis when optimising the development and operation of the network at Union level.
- (8) The obligations of the Member States towards the ICAO regarding route design, frequency and SSR transponder code management should be respected and should be implemented more effectively for the network with coordination by and support from the Network Manager.
- (9) The allocation of radio spectrum takes place in the context of the International Telecommunication Union (ITU). The Member States have a responsibility to highlight the civil aviation requirements and to subsequently use the resource allocated to general air traffic in an optimal manner.
- (10) The ICAO has developed guidance material relevant for the SSR transponder code and radio frequency functions and operates a system of registering frequency assignments for general air traffic purposes in the ICAO European region, currently facilitated by Eurocontrol.
- (11) Regulation (EC) No 551/2004 requires the adoption of detailed implementing rules to coordinate and harmonise the processes and procedures to enhance the efficiency of aeronautical frequency management and a central function to coordinate the early identification and resolution of frequency needs to support the design and operation of the network.
- (12) As air traffic flow management (ATFM) is an integral part of the network functions, an appropriate link to Commission Regulation (EU) No 255/2010 of 25 March 2010 laying down common rules on air traffic flow management <sup>(1)</sup> is required.
- (13) As the efficiency of network management depends on immediate commencement of network functions, the Member States have already entrusted Eurocontrol with the performance of ATFM.
- (14) It is beneficial to entrust a single body to coordinate the various network functions in order to develop consistent short and long term optimisation solutions at network level, compliant with the performance objectives. However, network functions should be delivered by the Network Manager and at Member State and functional airspace block level according to the responsibilities set out by this Regulation.

<sup>(1)</sup> OJ L 80, 26.3.2010, p. 10.

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- (15) The Network Manager should be involved with aspects of Member State or functional airspace blocks air traffic management (ATM) plans, actions and performance, in particular when it can be expected that it has, or is likely to have, a material effect on the performance of the network.
- (16) The events linked to the eruption of the Eyjafjallajökull volcano in April 2010 have demonstrated the need to create a central entity that can take the lead in coordinating the management of mitigating measures at local, regional and network level in order to secure the provision of a timely response to future crisis situations affecting aviation.
- (17) There should be coordination between the network functions and the operations organised at level of functional airspace blocks.
- (18) Effective stakeholder consultations should take place at national, functional airspace block and network levels.
- (19) Airports being entry and exit points to the network are key contributors to overall network performance, therefore the network functions should liaise through the Union observatory on airports capacity with airport operators acting as ground coordinators with the objective to optimise capacity on the ground, thus improving the overall network capacity.
- (20) The implementation of network functions should be without prejudice to Council Regulation (EEC) No 95/93 of 18 January 1993 on common rules for the allocation of slots at Community airports<sup>(1)</sup>.
- (21) Having due regard to military operation effectiveness, civil-military cooperation and coordination are of utmost importance in order to achieve the required objectives. Whilst decisions relating to the content, scope or carrying out of military operations and training performed under the operational air traffic regime, do not fall within the sphere of competence of the Union, it is important to cover the interfaces between these operations and those covered by this Regulation in the interest of safety and mutual efficiency.
- (22) The network functions should be without prejudice to Article 13 of Regulation (EC) No 549/2004 aiming at safeguarding essential security or defence policy interests or the application of flexible use of airspace provided for in Article 7 of Regulation (EC) No 551/2004.
- (23) The network functions should be provided in a cost-efficient manner, in particular avoiding any duplication of efforts, and therefore enabling the provision of these functions at reduced, or at least not higher, financial and human resources requirements in the Member States in the context of this Regulation, compared to the situation before a Network Manager was nominated.

<sup>(1)</sup> OJ L 14, 22.1.1993, p. 1.

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- (24) The Commission should ensure an appropriate oversight of the Network Manager.
- (25) Safety requirements for the network functions have to be of comparable level with the European Aviation Safety Agency (the Agency) requirements on air navigation service provision. These requirements, as well as the requirements on the safety oversight, should be provided.
- (26) The consideration and involvement of third countries in the establishment and implementation of the network functions should contribute to the pan-European dimension of the single European sky.
- (27) The network functions may be expanded in accordance with Article 6 of Regulation (EC) No 551/2004.

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- (29) Regulation (EU) No 691/2010 should therefore be amended accordingly.
- (30) 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 (ATM) network functions in accordance with Article 6 of Regulation (EC) No 551/2004 in order to allow optimum use of airspace in the single European sky and ensure that airspace users can operate preferred trajectories, while allowing maximum access to airspaces and air navigation services.
2. For the purpose of network management this Regulation shall apply in particular to Member States, European Aviation Safety Agency (the Agency), airspace users, air navigation service providers, airport operators, airport slot coordinators and operating organisations, at national or functional airspace block level.
3. In accordance with Article 1(3) of Regulation (EC) No 551/2004 and without prejudice to the operation of State aircraft under Article 3 of the Chicago Convention on International Civil Aviation, Member States shall apply this Regulation in airspace placed under their responsibility in ICAO EUR and AFI regions.
4. In accordance with Article 13 of Regulation (EC) No 549/2004, this Regulation shall not prevent the application of measures by a Member State to the extent to which these are needed to safeguard essential security or defence policy interests.

**▼B***Article 2***Definitions**

For the purposes of this Regulation, the definitions in Article 2 of Regulation (EC) No 549/2004 shall apply.

In addition, the following definitions shall apply:

- (1) ‘airport operator’ means the ‘managing body of an airport’ as defined in point (j) of Article 2 of Regulation (EEC) No 95/93;
- (2) ‘airport slot coordinator’ means the function established at coordinated airports in application of Regulation (EEC) No 95/93;
- (3) ‘airspace design’ means a process to contribute to the achievement of network related performance targets and to cater for airspace users needs as well as to ensure or increase the established safety level and increase the airspace capacity and environmental performance through the development and implementation of advanced navigational capabilities and techniques, improved route networks and associated sectorisation, optimised airspace structures and capacity enhancing ATM procedures;
- (4) ‘airspace reservation’ means a defined volume of airspace temporarily reserved for exclusive or specific use by categories of users;
- (5) ‘airspace restriction’ means a defined volume of airspace within which, variously, activities dangerous to the flight of aircraft may be conducted at specified times (a ‘danger area’); or such airspace situated above the land areas or territorial waters of a State, within which the flight of aircraft is restricted in accordance with certain specified conditions (a ‘restricted area’); or such airspace situated above the land areas or territorial waters of a State, within which the flight of aircraft is prohibited (a ‘prohibited area’);
- (6) ‘airspace structure’ means a specific volume of airspace designed to ensure the safe and optimal operation of aircraft;
- (7) ‘airspace utilisation’ means the way that airspace is operationally used;
- (8) ‘airspace users’ representative’ means any legal person or entity representing the interests of one or several categories of users of air navigation services;
- (9) ‘aviation frequency band’ means an entry in the ITU Radio Regulations Table of Frequency Allocations of a given frequency band in which frequency assignments are made for the purpose of general air traffic;
- (10) ‘ATC sector’ means a defined volume of airspace for which an associated controller(s) has ATC responsibility at any given time;

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- (11) ‘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;
- (12) ‘civil-military coordination’ means the interaction between civil and military authorities and components of air traffic management necessary to ensure safe, efficient and harmonious use of the airspace;
- (13) ‘conditional route (CDR)’ means an ATS route that is only available for flight planning and use under specified conditions;
- (14) ‘cooperative decision making’ means a process in which decisions are made based on a constant interaction and consultation with Member States, operational stakeholders and other actors as appropriate;
- (15) ‘network crisis’ means a state of inability to provide air navigation service at 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;
- (16) ‘European Route Network Improvement Plan’ means the plan developed by the Network Manager in coordination with the operational stakeholders that includes the result of its operational activities with respect to route network design on short and medium terms in accordance with the guiding principles of the Network Strategy Plan;
- (17) ‘Free Route Airspace’ means a specific airspace within which users can freely plan their routes between an entry point and an exit point without reference to the ATS route network;
- (18) ‘frequency assignment’ means authorisation given by a Member State to use a radio frequency or radio frequency channel under specified conditions;
- (19) ‘impact on the network’ means in the context of the radio frequency function set out in Annex II a situation when 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;
- (20) ‘multiple route options’ means the availability to the airspace user of more than one routing option on the ATS route network;
- (21) ‘third countries’ means non-Member States that are members of Eurocontrol or have concluded an agreement with the Union on the implementation of the single European sky or are participating in a functional airspace block;
- (22) ‘Network Manager’ means the body established under Article 6 of Regulation (EC) No 551/2004 to perform the duties provided for in that Article and this Regulation;

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- (23) ‘Network Operations Plan’ means the plan developed by the Network Manager in coordination with the operational stakeholders to organise its operational activities in the short and medium term in accordance with the guiding principles of the Network Strategic Plan. For the European route network design (ERND)-specific part of the Network Operations Plan, it includes the European Route Network Improvement Plan;
- (24) ‘Network Strategy Plan’ means the plan developed by the Network Manager, consistent with the European ATM Master Plan, in coordination with Member States and the operational stakeholders defining the guiding principles for the network operation and its long term perspective;
- (25) ‘operating organisation’ means an organisation responsible for the provision of engineering and technical services supporting air traffic, communication, navigation or surveillance services;
- (26) ‘operational requirements’ means the requirements of the network in terms of safety, capacity and efficiency;
- (27) ‘operational stakeholders’ means the civil and military airspace users, civil and military air navigation service providers, airport operators, airport slot coordinators and operating organisations and any additional stakeholder groups considered relevant for the individual functions;
- (28) ‘sector configuration’ means a scheme combining sectors that are constructed and best placed to satisfy the operational requirements and airspace availability;
- (29) ‘user required route’ means the desirable routing that is declared by the aircraft operators at the airspace design stage to meet their needs.

## CHAPTER II

**ORGANISATION AND MANAGEMENT OF NETWORK FUNCTIONS***Article 3***Establishment of a Network Manager**

1. For the purpose of the performance of the tasks necessary for the execution of functions provided for in Article 6 of Regulation (EC) No 551/2004 and in the Annexes to this Regulation, an impartial and competent body (the Network Manager) shall be established.
2. The length of the term of the Network Manager shall coincide with the reference periods for the performance scheme provided for in Article 7(1) of Regulation (EU) No 691/2010. It shall be sufficiently long to enable maturity to develop in performance of these functions. It shall not be shorter than two reference periods and may be renewed.
3. The nomination of the Network Manager shall take the form of a Commission Decision after consultation of the Single Sky Committee in accordance with Article 5(3) of Regulation (EC) No 549/2004 and not later than 3 months after the adoption of this Regulation. That Decision



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shall include the terms and conditions of the nomination, including the financing and the conditions of its withdrawal. The Commission shall assess compliance with those conditions at the end of each reference period referred to in paragraph 2.

4. The Network Manager shall perform the following functions:
- (a) the design of the European Route Network as set out in Annex I;
  - (b) the coordination of scarce resources, in particular:
    - (i) radio frequencies within aviation frequency bands used by general air traffic as set out in Annex II;
    - (ii) SSR transponder codes as set out in Annex III.

The Commission may add other functions to the Network Manager under Articles 6(3) or (4)(c) of Regulation (EC) No 551/2004.

5. The Network Manager shall also perform the ATFM function referred to in Article 6(6) of Regulation (EC) No 551/2004 and in Regulation (EU) No 255/2010.

*Article 4*

**Tasks of the Network Manager**

1. To support the execution of the functions listed in Article 3, the Network Manager shall perform the following tasks, with a view to a continuous improvement of the network operations in the single European sky contributing to the European Union-wide performance targets provided for in Regulation (EU) No 691/2010, and in particular:
- (a) develop, maintain and implement a Network Strategy Plan specified in Article 5, in compliance with the performance scheme provided for in Regulation (EU) No 691/2010 and the European ATM master plan and taking into account any relevant ICAO Air Navigation Plans;
  - (b) detail the Network Strategy Plan through a Network Operations Plan, as further specified in Article 6, addressing in particular European Union-wide performance targets covering 3 to 5 year, annual, seasonal, weekly and daily periods;
  - (c) develop an integrated European Route Network Design set out in Annex I;
  - (d) provide the central function for the coordination of radio frequencies as required by Article 6(4)(b) of Regulation (EC) No 551/2004 and set out in Annex II to this Regulation;
  - (e) coordinate the improvement of the SSR transponder code allocation process set out in Annex III;
  - (f) organise the management and operation of the functions and execute in particular the obligations of the Central Unit for ATFM;

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- (g) provide a consolidated and coordinated approach to all planning and operational activities of the network, including monitoring and improvement of its overall performance;
- (h) provide support for network crisis management;

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- (i) support the different operational stakeholders in the execution of the obligations that are placed on them, in the deployment of air traffic management and/or air navigation services (ATM/ANS) systems and procedures in accordance with the ATM master plan, in particular the common projects specified in Article 15a(3) of Regulation (EC) No 550/2004 of the European Parliament and the Council <sup>(1)</sup>;

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- (j) provide support to entities entrusted with the investigation of civil aviation accidents and incidents or with the analysis of occurrences as requested by those entities; within the scope of Regulation (EU) No 996/2010 of the European Parliament and of the Council <sup>(2)</sup>;
- (k) ensure coordination with other regions and third countries which do not participate in the work of the Network Manager;

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- (l) develop and maintain a work programme and associated budget providing a multiannual dimension;
- (m) contribute to SESAR deployment in accordance with Commission Implementing Regulation (EU) No 409/2013 <sup>(3)</sup>, in particular Article 9(7)(a) thereof;
- (n) execute the work programme and annual budget;
- (o) draw up a Network Performance Plan in accordance with Article 6 of Implementing Regulation (EU) No 390/2013;
- (p) identify operational safety hazards at network level and assess the associated network safety risk;
- (q) provide the Commission with an alerting or alarming system, based on the analysis of flight plans, in order to monitor compliance with operating bans imposed on air carriers under Regulation (EC) No 2111/2005 of the European Parliament and of the Council <sup>(4)</sup> and/or with other safety and security measures.

<sup>(1)</sup> Regulation (EC) No 550/2004 of the European Parliament and the Council of 10 March 2004 on the provision of air navigation services in the single European sky (OJ L 96, 31.3.2004, p. 10).

<sup>(2)</sup> OJ L 295, 12.11.2010, p. 35.

<sup>(3)</sup> 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).

<sup>(4)</sup> 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).

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2. The Network Manager shall contribute to the implementation of the performance scheme in accordance with Regulation (EU) No 691/2010.
3. To fulfil its tasks, the Network Manager shall ensure the following:
  - (a) the availability, operations and sharing of tools, processes and consistent data to support the cooperative decision-making process at network level, including but not limited to, flight plan processing and data management systems;
  - (b) the facilitation and coordination between operational stakeholders and support to these stakeholders in the deployment and implementation of the plans and the related network measures following cooperative decision-making;
  - (c) the appropriate operational coordination, as well as optimisation, interoperability and interconnectivity within its area of responsibility;
  - (d) the coordination of proposals for amendments to the appropriate ICAO documents relating to the network functions;
  - (e) the reporting in accordance with Article 20 of all operational performance aspects, including scarce resources;
  - (f) an appropriate liaison with other modes of transport.
4. The Network Manager shall comply with ad hoc requests for information, advice, analysis or other similar ancillary tasks linked to the various functions on request of the Commission or the Agency.

*Article 5***Network Strategy Plan****▼M1**

1. To guide its long term perspective, the Network Manager shall develop, maintain and implement a Network Strategy plan, which shall be aligned with the reference period provided for in Article 8 of Commission Implementing Regulation (EU) No 390/2013 <sup>(1)</sup>.

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2. The Network Strategy Plan shall be based on the indicative template set out in Annex IV. It shall be adopted by the Commission in accordance with Article 5(3) of Regulation (EC) No 549/2004, after the endorsement of the draft Network Strategy Plan by the Network Management Board.

<sup>(1)</sup> OJ L 128, 9.5.2013, p. 1.

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3. The Network Strategy Plan shall aim at achieving the performance targets for network functions provided for in Regulation (EU) No 691/2010.

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4. The Network Strategy Plan shall be updated on a regular basis, at least 12 months before the beginning of each reference period.

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5. Operational stakeholders shall take due account of the Network Strategy Plan.

**▼B***Article 6***Network Operations Plan**

1. To implement the Network Strategy Plan at operational level the Network Manager shall develop a detailed Network Operations Plan.

2. The Network Operations Plan shall provide the information set out in Annex V.

3. The Network Operations Plan shall in particular lay down measures for the achievement of the European Union-wide performance targets provided for in Regulation (EU) No 691/2010 covering a 3 to 5 year, an annual, a seasonal, a weekly and a daily period.

4. The Network Operations Plan shall include military requirements if provided by Members States.

5. The Network Operations Plan shall include the European Route Network Improvement Plan and the equivalent for radio frequencies and the SSR transponder codes.

6. The Network Operations Plan shall identify operational constraints, bottlenecks, measures of improvement and solutions for remediation or mitigation.

7. Air navigation service providers, functional airspace blocks and airport operators shall ensure that their operation plans are aligned with the Network Operations Plan. The Network Manager shall ensure the coherence of the Network Operations Plan.

8. The Network Operations Plan shall be updated at regular intervals, taking into account all relevant developments in the needs and requirements of the network functions.

*Article 7***Competences of the Network Manager**

1. Without prejudice to the responsibilities of the Member States, the Network Manager shall, in the execution of its tasks, adopt individual measures which result from the cooperative decision-making process. The parties concerned with those measures shall implement them.

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2. Where a Member State's responsibilities prevent the adoption of such individual measures, the Network Manager shall refer such a case to the Commission for further consideration.
3. The Network Manager shall also recommend measures on other issues required by the performance of the network.
4. The Network Manager shall take, in its area of responsibility, measures aiming to ensure that applicable European Union-wide performance targets referred to in Article 9 of Regulation (EU) No 691/2010 are met.
5. The Network Manager shall collect, consolidate and analyse all relevant data identified in Annexes I to VI. It shall provide this data to the Commission, the Agency or Performance Review Body provided for in Regulation (EU) No 691/2010 as requested.

*Article 8***Relations with operational stakeholders**

1. In order to perform its tasks of monitoring and improvement of the overall performance of the network, the Network Manager shall develop appropriate working arrangements, provided for in Article 15, with the operational stakeholders.
2. The operational stakeholders shall ensure that the measures implemented at local or functional airspace block level are compatible with those adopted, through the cooperative decision-making process, at network level.
3. The operational stakeholders shall provide the Network Manager with the relevant data listed in Annexes I to VI, complying with any deadlines, completeness requirements or accuracy requirements agreed with the Network Manager for its delivery.
4. Operational stakeholders concerned with the individual measures taken by the Network Manager under Article 7(1) may request the revision of such measures within 5 working days of their adoption. The request of revision shall not suspend the individual measures.
5. The Network Manager shall confirm or modify the measures concerned within 5 working days or within 48 hours in case of network crisis.

*Article 9***Relations with Member States**

1. In the execution of its tasks, the Network Manager shall take due consideration of the responsibilities of the Member States.
2. Member States shall inform the Network Manager where their sovereignty and responsibilities prevent the adoption of individual measures under Article 7(1).
3. When Member States are involved in operational issues related to the network functions they shall be part of the cooperative decision-making process and shall implement the results agreed in this process at national level.



#### *Article 10*

##### **Relations with functional airspace blocks**

1. Member States shall ensure close cooperation and coordination between the functional airspace block and the Network Manager, such as in strategic planning level and tactical daily flow and capacity management.
2. In order to facilitate operational interconnectivity between functional airspace blocks, the Network Manager shall establish, in close cooperation with all the functional airspace blocks, harmonised processes, procedures and interfaces including changes on aspects related to activities of the Network Manager.
3. Member States cooperating in a functional airspace block shall ensure that consolidated views are formulated related to the network functions.
4. Air navigation service providers cooperating in a functional airspace block shall ensure that consolidated views are formulated related to operational issues of the network functions.
5. Before the establishment of a functional airspace block, Member States and air navigation service providers shall cooperate in such a way that consolidated views are formulated on aspects related to activities of the Network Manager.

#### *Article 11*

##### **Civil-military cooperation**

1. The Network Manager shall ensure that appropriate arrangements are in place to allow and support adequate coordination with national military authorities.
2. The Member States shall ensure appropriate military involvement in all activities related to the network functions.
3. The Member States shall ensure appropriate representation of the military air navigation service providers and military airspace users in all operational working and consultation arrangements established by the Network Manager.
4. The function of European Route Network Design shall be executed without prejudice to the reservations or restrictions of a volume of airspace for exclusive or specific use by the Member States. The Network Manager shall encourage and coordinate the availability of conditional routes through those areas in accordance with Commission Regulation (EC) No 2150/2005 <sup>(1)</sup>.

#### *Article 12*

##### **General requirements for network functions**

The Network Manager shall ensure that the general requirements for network functions set out in Annex VI are met. Those requirements shall apply as from the date of adoption of the nomination Decision and the Network Manager shall comply with them within 12 months after such date.

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<sup>(1)</sup> OJ L 342, 24.12.2005, p. 20.

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CHAPTER III  
GOVERNANCE OF NETWORK FUNCTIONS

*Article 13*

**Cooperative decision-making**

1. Network functions shall be managed through cooperative decision-making.
2. A cooperative decision-making process shall include:
  - (a) a consultation process provided for in Article 14;
  - (b) detailed working arrangements and processes for operations provided for in Article 15.
3. In order to adopt measures related to the governance of the network functions and to monitor their performance the Network Manager shall establish a Network Management Board provided for in Article 16.
4. Where the Network Manager finds its actions hindered by one or several parties, the matter shall be referred to the Network Management Board for resolution.

*Article 14*

**Consultation process**

1. A process shall be established to organise the appropriate and regular consultation of the Member States and operational stakeholders.  
► **M2** A working party composed of the operational stakeholders' directors of operations and/or representatives of the corresponding associations shall be established to provide operational advice to the Network Management Board. ◀
2. The consultation shall focus on the detailed working arrangements provided for in Article 15, the Network Strategy Plan, the Network Operations Plan, progress in the implementation of the plans, reports to the Commission and on operational issues as appropriate.
3. The consultation process may vary depending on the nature of the individual network functions. In order to ensure that regulatory issues can be addressed, Member States shall be involved when required.
4. Where stakeholders are not satisfied with the consultation, the issue shall first be referred to the appropriate consultation arrangement at individual function level. Where resolution of the issue cannot be reached at individual function level, the matter shall be referred to the Network Management Board for resolution.

*Article 15*

**Detailed working arrangements and processes for operations**

1. The Network Manager shall develop detailed working arrangements and processes for operations to address planning and operational aspects, taking into account, in particular, the specificity and requirements of the individual network functions as specified in Annexes I to VI.

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2. The Network Manager shall ensure that the detailed working arrangements and processes for operations contain rules for notification of interested parties concerned.
3. These detailed working arrangements and processes for operations need to respect the separation of service provision and regulatory issues and to ensure that Member States are involved, when required.

*Article 16***Network Management Board**

1. The Network Management Board shall be responsible for:

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- (a) endorsing the draft Network Strategy Plan;

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- (b) approving the 3 to 5 year and the annual Network Operations Plans;
- (c) approving the cooperative decision-making processes, the consultation processes as well as detailed working arrangements and processes for operations for the network functions, after a positive opinion of the Single Sky Committee;
- (d) approving the Rules of Procedure of the European Aviation Crisis Coordination Cell provided for in Article 18(4), after a positive opinion of the Single Sky Committee;
- (e) monitoring progress in the implementation of the plans and addressing any potential deviations from initial plans;
- (f) monitoring the consultation process of operational stakeholders;
- (g) monitoring activities related to the management of the network functions;
- (h) monitoring Network Manager activities related to network crises;
- (i) approving the annual report referred to in Article 20. This report shall include, but not be limited to, the implementation of the Network Strategy Plan and the Network Operations Plan;
- (j) addressing issues which were not solved at individual network function level;
- (k) assessing if the Network Manager has the appropriate competences, resources and impartiality to carry out independently the tasks assigned to it, including security, liability and contingency arrangements;
- (l) endorsing the Network Managers annual budget, after a positive opinion of the Single Sky Committee;
- (m) approving its Rules of Procedure, after a positive opinion of the Single Sky Committee;



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- (n) addressing any additional subject it identifies as relevant;

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- (o) approving the work programme referred to in point (l) of Article 4(1) and monitoring its implementation;
- (p) approving the Network Performance Plan referred to in point (o) of Article 4(1);
- (q) giving an opinion on possible additional functions that might be attributed to the Network Manager in application of Articles 6(3) or 6(4)(c) of Regulation (EC) No 551/2004;
- (r) approving the cooperative arrangements referred to in Article 22.

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2. The following shall be voting members of the Network Management Board:

- (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 as air navigation service providers and airspace users.

3. The following shall also be members of the Network Management Board:

- (a) the chairperson, appointed on the basis of technical competence and expertise upon a proposal by the Commission, based in particular on proposals from the voting members of the Network Management Board, and after a positive opinion of the Single Sky Committee;
- (b) one representative of the Commission;
- (c) one representative of Eurocontrol;
- (d) one representative of the Network Manager.

4. Members shall have an alternate.

5. The voting members of the Network Management Board shall be appointed, upon proposals from their organisations, after a positive opinion of the Single Sky Committee.

6. The Commission may appoint independent and recognised experts as advisors who shall serve in their personal capacity and represent a broad range of disciplines encompassing major aspects of the network functions. States participating in the work of the Network Manager shall propose candidates to that effect.

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7. The members listed in points (a), (b) and (c) of paragraph 3 shall have the right to reject proposals which impact on:

- (a) sovereignty and responsibilities of Member States, in particular relating to public order, public security and defence matters, as set out in Article 13 of Regulation (EC) No 549/2004;
- (b) the compatibility of Network Management Board activities with the aims and objectives of this Regulation;
- (c) the impartiality and equity of the Network Management Board.

**▼M2**

8. The decisions referred to in paragraph 1, points (a) to (d), points (g), (i), (l), (m), and (o) to (r) shall be adopted by the Network Management Board by simple majority of its members.

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9. Where agreement cannot be reached on issues of major network significance, the Network Management Board shall refer the case to the Commission for further action. The Commission shall inform the Single Sky Committee.

*Article 17***Role of the Single Sky Committee**

1. The Network Manager shall refer regulatory issues to the Commission; the Commission shall inform the Single Sky Committee of those issues.

2. The Single Sky Committee shall give an opinion on:

- (a) the nomination of the Network Manager;
- (b) the appointment of the chairperson of the Network Management Board;
- (c) the appointment of the voting members of the Network Management Board;
- (d) the Rules of Procedure of the Network Management Board;
- (e) the Network Strategy Plan, and in particular the objectives of this plan at an early stage;
- (f) the annual budget of the Network Manager;
- (g) the Rules of Procedure of the European Aviation Crisis Coordination Cell;
- (h) the cooperative decision-making processes, the consultation processes as well as the detailed working arrangements and processes for operations for the network functions.

3. The Single Sky Committee may advise the Commission when agreement cannot be reached on issues of major network significance by the Network Management Board.

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CHAPTER IV  
**NETWORK CRISIS MANAGEMENT**

*Article 18*

**Establishment of the 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).

**▼M2**

2. Permanent members of the EACCC shall consist of one representative of the Member State holding the Presidency of the Council, the Commission, the Agency, Eurocontrol, the Network Manager, the military, the air navigation services providers, the airports and the airspace users.

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3. The composition of the EACCC may be enhanced on a case-by-case basis by experts depending on the nature of the specific crisis.

4. The EACCC shall prepare its Rules of Procedure for adoption by the Network Management Board.

5. The Network Manager shall make available the resources required for the establishment and operation of the EACCC.

*Article 19*

**Responsibilities of the Network Manager and the EACCC**

1. The Network Manager in conjunction with the EACCC members shall be responsible for activating and deactivating the EACCC.

2. The Network Manager, with the support of the EACCC, shall be responsible for:

(a) coordinating the management of response to the network crisis, in accordance with the EACCC Rules of Procedure, involving close cooperation with corresponding structures in Member States;

**▼M2**

(b) supporting the activation and coordination of contingency plans at Member State level in particular through a network of State focal points;

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(c) the elaboration of mitigating measures at network level to secure the provision of a timely response to such network crisis situations to protect and ensure the continued and safe operation of the network. For this purpose the Network Manager shall:

(i) monitor the network situation with regard to network crises on a 24-hour basis;

(ii) ensure an effective information management and communication through the dissemination of accurate, timely and consistent data to support the application of risk management principles and processes in decision-making processes;

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- (iii) facilitate the organised collection and centralised storage of that data;
- (d) highlighting, where appropriate, to the Commission, the Agency or Member States opportunities for additional support for mitigation of the crisis, including liaising with operators of other modes of transport who may identify and implement intermodal solutions;
- (e) monitoring and reporting on the network recovery and sustainability;

**▼M2**

- (f) organising, facilitating and/or performing an agreed programme of crisis exercises involving Member States and operational stakeholders to anticipate real time network crisis.

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## CHAPTER V

**MONITORING, REPORTING AND OVERSIGHT***Article 20***Monitoring and reporting**

1. The Network Manager shall establish a process of continuous monitoring of:

- (a) the operational network performance;
- (b) the measures taken and the performance outcome achieved by the operational stakeholders and States;
- (c) the effectiveness and efficiency of each of the functions covered by this Regulation.

2. The continuous monitoring shall identify any potential deviation from the Network Strategy Plan and Network Operations Plans. The operational stakeholders shall assist the Network Manager in this task by performing certain tasks including but not limited to the provision of data.

**▼M1**

3. The Network Manager shall submit annually a report to the Commission and the Agency on the measures taken to fulfil its tasks. The report shall address individual network functions as well as the total network situation and shall be closely linked to the content of the Network Strategy Plan, the Network Operations Plan and the Network Performance Plan, referred to in Article 6(d) of Implementing Regulation (EU) No 390/2013. The Commission shall inform the Single Sky Committee.

**▼B***Article 21***Oversight of the Network Manager**

The Commission, assisted by the Agency in matters related to safety, shall ensure the oversight of the Network Manager, in particular in respect of the requirements contained in this Regulation and other Union legislation. The Commission shall report to the Single Sky Committee annually or when so specifically requested.

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CHAPTER VI  
FINAL PROVISIONS

**▼M2**

*Article 22*

**Relations with third countries**

1. Third countries together with their operational stakeholders may participate in the work of the Network Manager.
2. The Network Manager may, where it has a direct impact on the performance of the network, enter into cooperative arrangements with air navigation service providers established in third countries other than those defined in Article 2(21) within the ICAO EUR and AFI regions.
3. In order to better perform the ATFM function referred to in Article 3(5), the Network Manager may, where it has a direct impact on the performance of the network, also enter into cooperative arrangements with air navigation service providers operating in regions other than the ICAO EUR and AFI regions in so far that cooperation activities are directly related to improving the performance of the network.

*Article 23*

**Financing and budget of the Network Manager**

1. Member States shall take the necessary measures for the funding of the network functions entrusted to the Network Manager based on air navigation charges. The Network Manager shall establish its costs in a clear and transparent manner.
2. The budget of the Network Manager shall in particular:
  - (a) be adequate for it to be able to meet the performance targets for the Network Manager in accordance with Article 6 of Implementing Regulation (EU) No 390/2013;
  - (b) be adequate for it to be able to implement the work programme of the Network Manager as referred to in Article 4(1)(l) of this Regulation;
  - (c) be set in separate accounts where the body appointed to act as the Network Manager performs activities other than those referred to in Article 4.
3. If its budget for the ongoing year is not endorsed, the Network Manager shall apply appropriate measures to ensure contingency mechanisms for business continuity of network functions.

**▼B**

*Article 24*

**Liability**

The Network Manager shall put arrangements in place to cover liability related to the execution of its tasks. The method employed to provide the cover shall be appropriate to the potential loss and damage in question, taking into account the legal status of the Network Manager and the level of commercial insurance cover available.

*Article 25***Review**

The Commission shall review the effectiveness of the execution of the network functions by 31 December 2013 at the latest and regularly thereafter, taking appropriate account of the reference periods for the performance scheme provided for in Regulation (EU) No 691/2010.

*Article 26***Amendments to Regulation (EU) No 691/2010**

Regulation (EU) No 691/2010 is amended as follows:

(1) in Article 3(3), the following point (m) is added:

‘(m) the assessment of the performance plan of the Network Manager, including its consistency with the European-Union wide performance targets.’;

(2) the following Article 5a is inserted:

*Article 5a*

**Network Manager**

1. The Network Manager established by Article 3 of Commission Regulation (EU) No 677/2011 (\*) shall carry out the following tasks in relation to the performance scheme:

- (a) support the Commission by providing relevant input for the preparation of European Union-wide performance targets before the reference periods and for monitoring during the reference period. In particular, the Network Manager shall draw the Commission’s attention to any significant and persistent drops in operational performance;
- (b) in accordance with Article 20(5), provide access for the Commission to all data listed in Annex IV;
- (c) support Member States and air navigation service providers in reaching their performance target during reference periods;
- (d) elaborate a performance plan, which shall be adopted as part of the Network Strategy Plan before the beginning of each reference period. This performance plan shall be public and shall:
  - (i) contain an environment performance target that shall be consistent with the European Union-wide performance target for the entire reference period, with annual values to be used for monitoring purposes;
  - (ii) contain performance targets for other relevant key performance areas, consistent with the European Union-wide performance targets for the entire reference period, with annual values to be used for monitoring purposes;

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- (iii) contain a description of the actions planned to meet the targets;
- (iv) contain, where necessary or where decided by the Commission, additional key performance indicators and targets.

(\*) OJ L 185, 15.7.2011, p. 1.’;

- (3) in Article 17, the following paragraph 2a is inserted:

‘2a. The Commission shall monitor the implementation of the performance plan of the Network Manager. If during the reference period targets are not met, the Commission shall apply the appropriate measures specified in the performance plan with a view to rectifying the situation. For this purpose, the annual values in the performance plan shall be used.’;

- (4) in Annex III, paragraphs 3 and 4 are replaced by the following:

**3. Environment**

Route design: Not applicable during the first reference period. During the second reference period, assessment of the process on route design used in the performance plan and its consistency with the process for the development of the European Route Network Improvement Plan developed by the Network Manager.

**4. Capacity**

Delay level: Comparison of the expected level of en route ATFM delay used in the performance plans with a reference value provided by the capacity planning process of Eurocontrol and in the Network Operations Plan of the Network Manager.’

*Article 27*

**Entry into force**

This Regulation shall enter into force on the 20th day following its publication in the *Official Journal of the European Union*.

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

*ANNEX I***THE EUROPEAN ROUTE NETWORK DESIGN (ERND) FUNCTION****PART A****Objective**

1. The ERND function shall:
  - (a) achieve an 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 interconnectivity and interoperability of the European route network within the ICAO EUR Region and with adjacent ICAO Regions.
2. The development of an European Route Network Improvement Plan shall rely on a cooperative decision-making process. The European Route Network Improvement Plan shall form the ERND-specific part of the Network Operations Plan and present detailed rules implementing the ERND-part of the Network Strategy Plan.
3. Member States will remain responsible for the detailed development, approval and establishment of the airspace structures for the airspace under their responsibility.

**PART B****Planning principles**

1. Without prejudice to Member States' sovereignty over the airspace and to the requirements of the Member States relating to public order, public security and defence matters, the Network Manager, Member States, third countries, airspace users, functional airspace blocks and air navigation service providers as part of functional airspace blocks or individually shall develop, using a cooperative decision-making process, the European Route Network Improvement Plan, while applying the airspace design principles set out in this Annex. The European Route Network Improvement Plan shall meet the performance targets set for the Network Manager in the performance scheme.
2. The cooperative decision-making process shall be supported by appropriate permanent detailed working arrangements to be settled at expert level by the Network Manager with the participation of all stakeholders. The consultation arrangements will be organised with a periodicity that reflects 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 22. 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.



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4. The European Route Network Improvement Plan is a rolling plan that shall reflect all the elements necessary to ensure that European airspace is designed as a single entity and meets the applicable performance targets.
5. The plan shall include:
  - (a) common general principles complemented by technical specifications for airspace design;
  - (b) military airspace requirements;
  - (c) an agreed European route network and, where feasible, free route airspace structure designed to meet all user requirements with details covering all the airspace change projects;
  - (d) route network and free route airspace utilisation rules and availability;
  - (e) indications on recommended ATC sectorisation in support of the ATS airspace structure to be designed, decided and implemented by the Member States;
  - (f) guidelines for airspace management;
  - (g) a detailed development timetable;
  - (h) the calendar for a common publication and implementation cycle, through the Network Operations Plan;
  - (i) an overview of the current and expected network situation, including expected performance based on current and agreed plans.
6. The Network Manager shall ensure appropriate arrangements in all activities to allow civil-military coordination in the cooperative decision-making process.
7. The Network Manager, Member States, functional airspace blocks and air navigation service providers as part of functional airspace blocks or individually shall ensure coherent integration of agreed airspace design projects, agreed through the cooperative decision-making process, in the European Route Network Improvement Plan.
8. Member States and functional airspace blocks shall ensure that, prior to implementation, national and functional airspace blocks airspace design projects are compatible and consistent with the European Route Network Improvement Plan and are coordinated with those States impacted by them and the Network Manager.
9. The data regarding the changes to projects that require checking for compatibility and that need to be made available to the Network Manager include, but are not limited to:
  - (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;

**▼ B**

- (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.
10. The Network Manager and Member States shall, in the context of this Annex through the cooperative decision-making process, develop common proposals for amendment of the appropriate ICAO documents. In particular, for amendments of ICAO documents related to ATS routes over High Seas, Member States shall apply the applicable ICAO coordination procedures.
11. The Network Manager, Member States, airspace users, airport operators, functional airspace blocks and air navigation service providers as part of functional airspace blocks or individually shall, through the cooperative decision-making process, continuously review the European Route Network Improvement Plan to take into account new or changing demands on the airspace. Continuous coordination will be ensured with the military authorities.

## PART C

**Airspace design principles**

1. With the development of the European Route Network Improvement Plan the Network Manager, Member States, third countries, functional airspace blocks and air navigation service providers as part of functional airspace blocks or individually, shall within the cooperative decision-making process, 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 FIR boundaries, and shall not necessarily be bound by the division level between upper and lower airspace;
  - (b) the design of airspace structures shall be a transparent process showing decisions made and their justification through taking into account the requirements of all users whilst reconciling safety, capacity, environmental aspects and with 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 CDRs, received from stakeholders having an operational requirement in that area;

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- (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 FUA shall be established. Such structures shall be harmonised and made consistent to 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 will ensure 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 commensurate with variable traffic demand;
  - (j) agreements on service provision shall be established in cases where ATC sectors require, for operational reasons, to be designed across national or functional airspace block borders or FIR boundaries.
2. The Network Manager, Member States, functional airspace blocks and air navigation service providers as part of functional airspace blocks or individually, through the cooperative decision-making process, shall ensure that the following principles apply in relation 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 (capacity considerations and sector design limitations).

## PART D

**On-going monitoring of performance achievements at network level**

1. To ensure the regular performance improvements, the Network Manager, in close cooperation with States, functional airspace blocks and operational stakeholders shall undertake a regular review of the effectiveness of the implemented airspace structures.
2. This review shall include, but it is not limited to:
  - (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;
  - (f) informing the Commission in cases where the required remedial action exceeds the scope of Network Managers competencies.

*ANNEX II***THE RADIO FREQUENCY FUNCTION****PART A****Requirements for the execution of the function**

1. Member States shall nominate a competent person, authority or organisation as national frequency manager with the responsibility for ensuring that frequency assignments are made, modified and released in accordance with this Regulation. Member States shall notify the Commission and the Network Manager of the names and addresses of those persons at latest 4 months after the adoption of this Regulation.
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. The Network Manager shall at the request of national frequency manager(s) undertake actions with the Commission and the 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 their occurrence and support their assessment. The Network Manager shall at the request of national frequency manager(s) coordinate or provide any support necessary to resolve or mitigate such cases including actions with the Commission and the CEPT.
5. The Network Manager shall develop and maintain a central register which shall be designed to store all radio frequency assignment data as described in point 14.
6. The Member States shall make use of the central register to fulfil their administrative frequency assignment registration obligations towards ICAO.
7. The Network Manager and the national frequency managers shall further develop and enhance frequency management procedures, planning criteria, data sets and processes to optimise the use and occupancy of radio spectrum by general air traffic. The Network Manager shall at the request of Member State(s) propose these further at regional level.
8. When a frequency assignment is required, the applicant shall file a request with the appropriate national frequency manager, including all the relevant data and justification.
9. The national frequency managers and the Network Manager shall assess and prioritise frequency requests on the basis of operational requirements and agreed criteria. Furthermore, their impact on the network shall be determined by the Network Manager in conjunction with the national frequency managers. The Network Manager shall establish such criteria in consultation with the national frequency managers within 12 months after the adoption of this Regulation and maintain and update them thereafter as necessary.

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10. Where there is an impact on the network, the Network Manager shall identify suitable frequency(ies) to satisfy the 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.
11. Where there is no impact on the network, the national frequency managers shall determine suitable frequency(ies) to satisfy the request taking into account the requirements of point 10.
12. When a frequency request cannot be satisfied, 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.
13. The national frequency manager shall assign suitable frequency(ies) identified in points 10, 11 or 12.
14. The national frequency manager shall register each assignment in the central register by including the following information:
  - (a) data as defined in the ICAO European Frequency Management Manual including relevant associated technical and operational data;
  - (b) enhanced data requirements resulting from point 7;
  - (c) a description of the operational use of the frequency assignment;
  - (d) the contact details of the operational stakeholder making use of the assignment.
15. When making the assignment to the applicant, the national frequency manager shall include conditions of use. As a minimum, these 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.
16. The national frequency manager(s) shall ensure that any required frequency shift, modification or release is performed 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 these actions cannot be performed.
17. The national frequency managers shall ensure that the operational, technical and administrative details referred to in point 14 of all frequency assignments used in the European aviation network are available in the central register by 31 December 2011 at the latest.

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18. 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 usage. The Network Manager shall set up such procedures in consultation with the national frequency managers at the latest 12 months after the adoption of this Regulation and 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. The Network Manager shall notify the national frequency manager of such discrepancies for their resolution, within an agreed timeframe.
19. 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 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 B****Requirements for the organisation of the function**

1. The cooperative decision-making between national frequency managers and the Network Manager shall be based on arrangements subject to approval by the Network Management Board, in accordance with Article 16 of this Regulation, after a positive opinion of the Single Sky Committee in accordance with Article 5(2) of Regulation (EC) No 549/2004.
2. In case of disagreement on the arrangements referred to in paragraph 1 of Part B of this Annex, the Network Manager or the Member States concerned shall bring the matter to the Commission for action. The Commission shall act in accordance with the procedure referred to in Article 5(2) of Regulation (EC) No 549/2004.
3. The arrangements shall 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 do not adversely affect those applied by other countries in the context of ICAO Regional procedures;
  - (e) requirements to ensure that appropriate consultation on new or amended management arrangements is conducted by the Member States with all affected stakeholders at a national and European level.
4. The initial arrangements for the coordination of radio frequencies shall be fully compatible with the existing ones. Evolution of these arrangements shall be specified in cooperation with the national frequency managers and reduce overheads as far as practical.
5. Coordination on the strategic and tactical use of radio frequencies with adjacent countries not participating in the work of the Network Manager shall be conducted through the ICAO regional working arrangements. This will be done with a view to enable access of adjacent countries to the services of the Network Manager.

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6. 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. These 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.
7. Member States shall ensure that the use of aviation frequency bands by military users is appropriately coordinated with the national frequency managers and the Network Manager.

*ANNEX III***THE TRANSPONDER CODE FUNCTION****PART A****Requirements for the Transponder Code Function**

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;
  - (c) through enshrinement in regulation, to provide the regulatory basis allowing better enforcement and oversight.
2. SSR transponder codes shall be allocated through the Network Manager 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. An SSR transponder code allocation list that describes the complete and up-to-date allocation of SSR codes in the airspace laid down in Article 1(3) shall be made available to Member States, air navigation service providers and third countries at all times by the Network Manager.
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) assessments of applications for SSR transponder code allocations;
  - (c) coordination of proposed amendments to SSR code transponder allocations with Member States and third countries in accordance with the requirements laid down in Part B;
  - (d) periodic audit of the SSR code allocations and needs with a view to optimisation of the situation, including re-allocation of existing code allocations;
  - (e) periodic amendment, approval and distribution of the overall SSR code transponder allocation list laid down in point 3;
  - (f) notification, assessment and resolution of unplanned conflicts between assignments of SSR transponder codes;



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- (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 aircraft in accordance with the SSR transponder code allocation list contained in point 3.
  8. A centralised SSR transponder code assignment and management system for the automatic assignment of SSR transponder codes to general air traffic may be operated by the Network Manager on behalf of the Member States and air navigation service providers.
  9. 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 shall be implemented by the Network Manager.
  10. Plans and procedures shall be agreed between the Network Manager, Member States and air navigation service providers to support the periodic analysis and identification of future SSR transponder code requirements. This 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. These operations manuals shall be distributed and maintained in accordance with appropriate quality and documentation management processes.

**PART B****Requirements for the specific consultation mechanism**

1. A dedicated mechanism for the coordination and consultation of detailed SSR transponder code allocation arrangements shall be established by the Network Manager, that:
  - (a) ensures 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) ensures the SSR transponder code allocation list laid down 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) specifies requirements to ensure that appropriate consultation on new or amended SSR transponder code management arrangements is conducted with the Member States concerned;
  - (d) specifies 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;

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- (e) ensures 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) specifies minimum timescales for the coordination and consultation of proposed new or amended SSR transponder code allocations;
  - (g) ensures changes to the SSR transponder code allocation list are subject to the approval of those Member States concerned by the change;
  - (h) specifies 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.

## PART C

**Requirements for the provision of data**

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. The following data and information shall be provided to the Network Manager by Member States, as required, 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. The following data and information shall be provided to the Network Manager by air navigation service providers, as required, within agreed timescales prescribed by the Network Manager to support the provision of the network function for SSR transponder codes:

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- (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.

**▼ M1***ANNEX IV***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. Compliance with the performance scheme
  - 3.3. Compliance with the European ATM master plan
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 these 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/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 R & D aspects, architectural impact, human aspects, business case, governance required, and regulation required as well as the associated safety and economic justification for these investments;

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(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 V***TEMPLATE FOR NETWORK OPERATIONS PLAN**

The Network Operations Plan shall be based on the following general structure (that will 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 regulation,
- 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 Regulation,
- 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 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,

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- 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 ACTIONS AT LOCAL LEVEL
- including description of each of the plans and 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 an network perspective,
  - major military exercises.
8. MILITARY AIRSPACE REQUIREMENTS
- 8.1. Military ATM service providers responsible for areas of reserved or segregated airspace shall exchange with the Network Manager, through the relevant Airspace Management Cell, the following information according to national rules:
- 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
- network, air navigation service provider, functional airspace block and ACC ATM delay/capacity targets and forecast,
  - airport operational performance,
  - network environment/flight efficiency performance target and forecast,
  - impact of special events,
  - analysis of the operational performance targets and forecast.

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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 (DCB).



**▼ B***Appendix 1***Area Control Centres (ACCs)**

The Network Operations Plan shall give a detailed description ACC by ACC of all the areas describing their planned operational enhancement measures, 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.

**▼B***Appendix 2***Airports**

The Network Operations Plan shall give a detailed description for main European airports of all the areas describing their planned operational enhancement measures, the prospects for the period, the traffic and delay forecast, the significant events that may affect the traffic, operational contacts.

The Network Manager shall include for each main airport:

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

Each airport included in the Network Operations Plan shall 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.

*ANNEX VI***GENERAL REQUIREMENTS FOR NETWORK FUNCTIONS****1. ORGANISATIONAL STRUCTURE**

The Network Manager shall set up and manage its organisation according to a structure that supports the safety of the network functions.

The organisational structure shall specify:

- (a) the authority, duties and responsibilities of the nominated post holders, in particular of the management personnel in charge of safety, quality, security and human resources related functions;
- (b) the relationship and reporting lines between different parts and processes of the organisation.

**2. SAFETY**

The Network Manager shall have a safety management system which covers all the network functions it performs according to the following principles. It shall:

- (a) describe the overall philosophies and principles of the organisation with regard to safety and in such a way as to meet the needs of relevant stakeholders as closely as possible, (hereinafter 'the policy');
- (b) set up a compliance monitoring function that contains procedures designed to verify that all functions are being provided in accordance with applicable requirements, standards and procedures. Compliance monitoring shall include a feedback system of findings to the responsible management personnel to ensure effective and timely implementation of corrective actions as necessary;
- (c) provide evidence of the functioning of the management system by means of manuals and monitoring documents;
- (d) appoint management representatives to monitor compliance with, and adequacy of, procedures to ensure safe and efficient operational practices;
- (e) perform reviews of the management system in place and take remedial actions, as appropriate;
- (f) manage the safety of all network functions allocated to it. In doing so, it shall establish formal interfaces with all the relevant stakeholders to be able to identify the aviation safety hazards entailed by its activities, to evaluate them and to manage the associated risks as appropriated;
- (g) contain procedures for managing the safety when introducing new functional systems or changing the existing functional systems.

**3. SECURITY**

The Network Manager shall have a security management system which covers all the network functions it performs according to the following principles. It shall:

- (a) ensure the security of its facilities and personnel so as to prevent an unlawful interference that could impact the safety of the network functions it manages;
- (b) ensure the security of operational data it receives or produces or otherwise employs, so that access to it is restricted only to those authorised;

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- (c) define the procedures relating to security risk assessment and mitigation, security monitoring and improvement, security reviews and lesson dissemination;
- (d) define the means designed to detect security breaches and to alert personnel with appropriate security warnings;
- (e) define the means of containing the effects of security breaches and to identify recovery action and mitigation procedures to prevent reoccurrence.

**4. OPERATIONS MANUALS**

The Network Manager shall establish and keep up-to-date operations manuals relating to its operations, for the use and guidance of operations personnel. It shall ensure that:

- (a) operations manuals contain instructions and information required by the operations personnel to perform their duties;
- (b) relevant parts of the operations manuals are accessible to the personnel concerned;
- (c) the operations personnel are expeditiously informed of the amendments to the operations manual applying to their duties as well as of their entry into force.

**5. PERSONNEL REQUIREMENTS**

The Network Manager shall employ appropriately skilled personnel to ensure that the network functions allocated to it are performed in a safe, efficient, continuous and sustainable manner. In this context, it shall establish policies for the training of personnel.

**6. CONTINGENCY PLANS**

The Network Manager shall establish contingency plans for all the functions it provides in the case of events which result in significant degradation or interruption of its operations.

**7. REPORTING REQUIREMENTS**

In accordance with Article 20, the Network Manager shall provide an annual report of its activities. This report shall cover its operational performance, as well as significant activities and developments in particular in the area of safety.

The annual report shall include as a minimum:

- an assessment of the performance of the network functions it manages,
- the performance compared to the performance objectives established in the Network Strategy Plan, reconciling actual performance against the Network Operational plan by using the indicators of performance established in the Network Operational plan,
- provide an explanation for differences with the targets, and identify measures for closing any gaps during the Reference Period referred to in Article 11 of Regulation (EC) No 549/2004,
- developments in operations and infrastructure,
- information about the formal consultation process with the users and stakeholders,
- information about the human resources policy.

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8. WORKING METHODS AND OPERATING PROCEDURES

The Network Manager shall be able to demonstrate that its working methods and operating procedures are compliant with other Union legislation and in particular with Regulation (EU) No 255/2010.