	<p style="text-align: center;">Aeronautical Services</p> <p style="text-align: center;">Advisory Memorandum</p> <p style="text-align: center;">(ASAM)</p> <p style="text-align: center;">Focal Point: ANSP</p>	<p style="text-align: center;">ASAM</p> <p style="text-align: center;">No: 40</p> <p style="text-align: center;">Issue 3</p> <p style="text-align: center;">Date 06.10.23</p>
<p>Title</p>	<p>Guidance on the conformity assessment framework for ATM/ANS systems and ATM/ANS constituents</p>	

1. References

- EASA Guidelines on the issue and use of EC declarations of conformity, suitability for use and verification of systems - (Document Ref: EASA-FS.4/ATM/ANS-TeB/2-2019);
- Regulation (EU) 2018/1139 of the European Parliament and of the Council of 4 July 2018, on common rules in the field of civil aviation and establishing a European Union Aviation Safety Agency, and amending Regulations (EC) No 2111/2005, (EC) No 1008/2008, (EU) No 996/2010, (EU) No 376/2014 and Directives 2014/30/EU and 2014/53/EU of the European Parliament and of the Council, and repealing Regulations (EC) No 552/2004 and (EC) No 216/2008 of the European Parliament and of the Council and Council Regulation (EEC) No 3922/91;
- Commission Delegated Regulation (EU) 2023/1768 of 14 July 2023 laying down detailed rules for the certification and declaration of air traffic management/air navigation services systems and air traffic management/air navigation services constituents;
- Commission Implementing Regulation (EU) 2023/1769 of 12 September 2023 laying down technical requirements and administrative procedures for the approval of organisations involved in the design or production of air traffic management/air navigation services systems and constituents and amending Implementing Regulation (EU) 2023/203;
- Commission Implementing Regulation (EU) 2023/1770 of 12 September 2023 laying down provisions on aircraft equipment required for the use of the Single European Sky airspace and operating rules related to the use of the Single European Sky airspace and repealing Regulation (EC) No 29/2009 and Implementing Regulations (EU) No 1206/2011, (EU) No 1207/2011 and (EU) No 1079/2012;
- Commission Implementing Regulation (EU) 2023/1771 of 12 September 2023 amending Implementing Regulation (EU) 2017/373 as regards air traffic management and air navigation services systems and constituents and repealing Regulations (EC) No 1032/2006, (EC) No 633/2007 and (EC) No 262/2009;
- Commission Implementing Regulation (EU) 2023/1772 of 12 September 2023 amending Implementing Regulation (EU) No 923/2012 as regards the operating rules related to the use of Air Traffic Management and Air Navigation Services systems and constituents in the Single European Sky airspace and repealing Regulation (EC) No 1033/2006;

- EASA workshop on the implementing measures for the conformity assessment framework for ATM/ANS systems and ATM/ANS constituents and event material – 4 July 2023.

2. Purpose

The purpose of this advisory memorandum is to provide guidance in relation to the new ATM/ANS ground equipment (GE) conformity assessment framework (hereafter referred to as the 'conformity assessment framework') and transitional measures which entered into force on 5 October 2023.

Please note that at the time of writing the regulatory acts associated with the new ATM/ANS GE conformity assessment framework have been published in the Official Journal of the EU (OJEU) with a date of effect of 5 October 2023. The associated finalised AMC/GM/detailed specification documentation are yet to be published by EASA.

3. Introduction

Following the entry into force of Regulation (EU) 2018/1139, Regulation (EC) No 552/2004 (hereafter referred to as the 'Interoperability Regulation') was repealed. However, in accordance with Article 139(2), Articles 4, 5, 6, 6a and 7, as well as Annexes III and IV in the Interoperability Regulation remained applicable up to 12 September 2023.

EASA subsequently developed guidelines, to assist individuals who are involved in the issuance of EC declarations relating to the conformity assessment of European Air Traffic Management Network (EATMN) systems and constituents during this initial transitional period, until such time that the new conformity assessment framework is adopted and enters into force.

The European Commission have published five regulations which form that basis of the new ATM/ANS GE conformity assessment framework and to replace the remaining articles and annexes of the repealed Interoperability Regulation. This new conformity assessment framework addresses categories of ATM/ANS equipment (i.e. ATM/ANS systems and ATM/ANS constituents), as well as the approval of organisations involved in its design and/or production (i.e. DPOs).

4. Regulatory framework on conformity assessment

The objective of the new conformity assessment framework is to complete the adaptation of the interoperability implementing rules adopted on the basis of the repealed interoperability regulation to the framework currently in place under Regulation (EU) 2018/1139.

In order to achieve this objective, the introduction of the following regulatory changes are required –

- New Commission Delegated Regulation (EU) 2023/1768 of 14 July 2023 laying down detailed rules for the certification and declaration of air traffic management/air navigation services systems and air traffic management/air navigation services constituents;
- New Commission Implementing Regulation (EU) 2023/1769 of 12 September 2023 laying down technical requirements and administrative procedures for the approval of organisations involved in the design or production of air traffic management/air navigation services systems and constituents and amending Implementing Regulation (EU) 2023/203 (i.e. DPOs);
- New Commission Implementing Regulation (EU) 2023/1770 of 12 September 2023 laying down provisions on aircraft equipment required for the use of the Single European Sky airspace and operating rules related to the use of the Single European Sky airspace and repealing Regulation (EC) No 29/2009 and Implementing Regulations (EU) No 1206/2011, (EU) No 1207/2011 and (EU) No 1079/2012;
- New Commission Implementing Regulation (EU) 2023/1771 of 12 September 2023 amending Implementing Regulation (EU) 2017/373 as regards air traffic management and air navigation services systems and constituents and repealing Regulations (EC) No 1032/2006, (EC) No 633/2007 and (EC) No 262/2009;
- New Commission Implementing Regulation (EU) 2023/1772 of 12 September 2023 amending Implementing Regulation (EU) No 923/2012 as regards the operating rules related to the use of Air Traffic Management and Air Navigation Services systems and constituents in the Single European Sky airspace and repealing Regulation (EC) No 1033/2006.

The above new regulatory acts will be supported by Acceptable Means of Compliance (AMC) and Guidance Material (GM) to support implementation. In addition, detailed specifications for ATM/ANS equipment that are subject to Conformity Assessment will be published by EASA.

Regulatory framework on conformity assessment

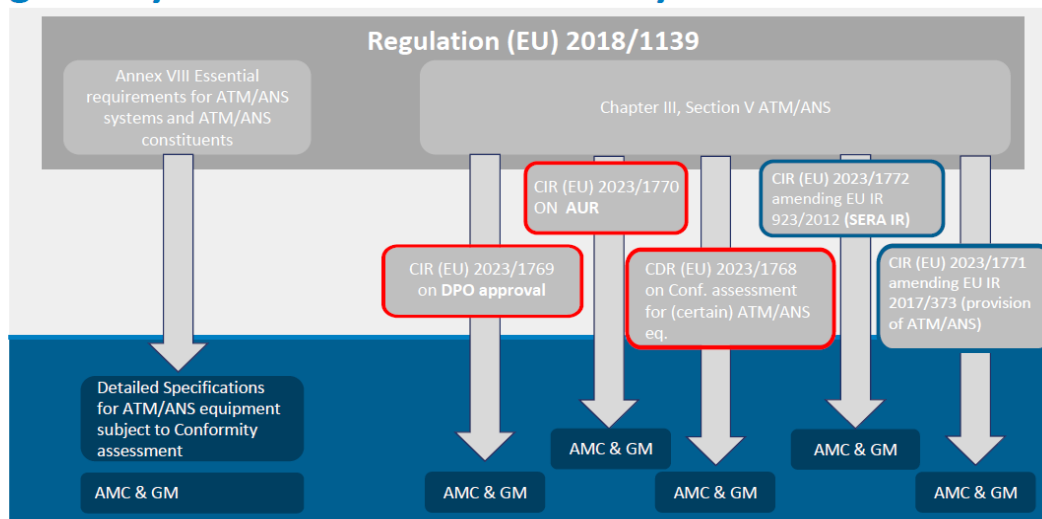


Figure 1 – ATM/ANS GE Conformity Assessment regulatory framework

Commission Delegated Regulation (EU) 2023/1768 establishes the new framework on the conformity assessment of certain ATM/ANS equipment. It establishes three different instruments based on the principles established by the Basic Regulation –

- Certification by EASA of certain ATM/ANS equipment based on detailed (certification) specifications (Article 4):
 - equipment supporting controller-pilot communications;
 - equipment supporting air traffic control (ATC) services when enabling the separation of aircraft or the prevention of collisions.

- Declaration by an approved organisation involved in the design and/or production of ATM/ANS equipment for other ATM/ANS equipment based on detailed declaration specifications (Article 5):
 - equipment supporting ground-to-ground communications;
 - equipment supporting navigation or surveillance.

- Statement of Compliance (SoC) by the ATM/ANS provider or by an approved organisation involved in the design and/or production of ATM/ANS equipment for other ATM/ANS equipment, confirming that the equipment complies with the technical standards listed in DSs (Article 6):
 - equipment that is neither subject to the above certification or declaration instruments; and
 - it supports air traffic services, communication, navigation or surveillance services, airspace management, air traffic flow management, aeronautical information services or meteorological services.

EASA hosted a workshop for aviation stakeholders on 4 of July 2023, which provided a detailed overview of the new ATM/ANS GE conformity assessment regulatory requirements and supporting material in relation to the above instruments. The presentation and video recording from this EASA workshop can be accessed at the following URL and ANSPs are urged to refer to this material for additional clarification and guidance information –

<https://www.easa.europa.eu/en/newsroom-and-events/events/easa-workshop-implementing-measures-conformity-assessment-framework>

5. Detailed specifications

Commission Delegated Regulation (EU) 2023/1768 requires EASA to establish and make available detailed technical specifications which stakeholders may use to demonstrate compliance with the relevant Essential Requirements set out in Annex VIII and, if applicable, Annex VII to the Basic Regulation.

EASA has drafted a first set detailed specifications to address the three different instruments identified in Section 4, which are expected to be published to coincide with the entry into force of the new conformity assessment framework. The basic high-level structure of this first set of detailed specifications to be published by EASA is depicted in the following diagrams, with detail on specific ATM/ANS equipment addressed under each subpart –

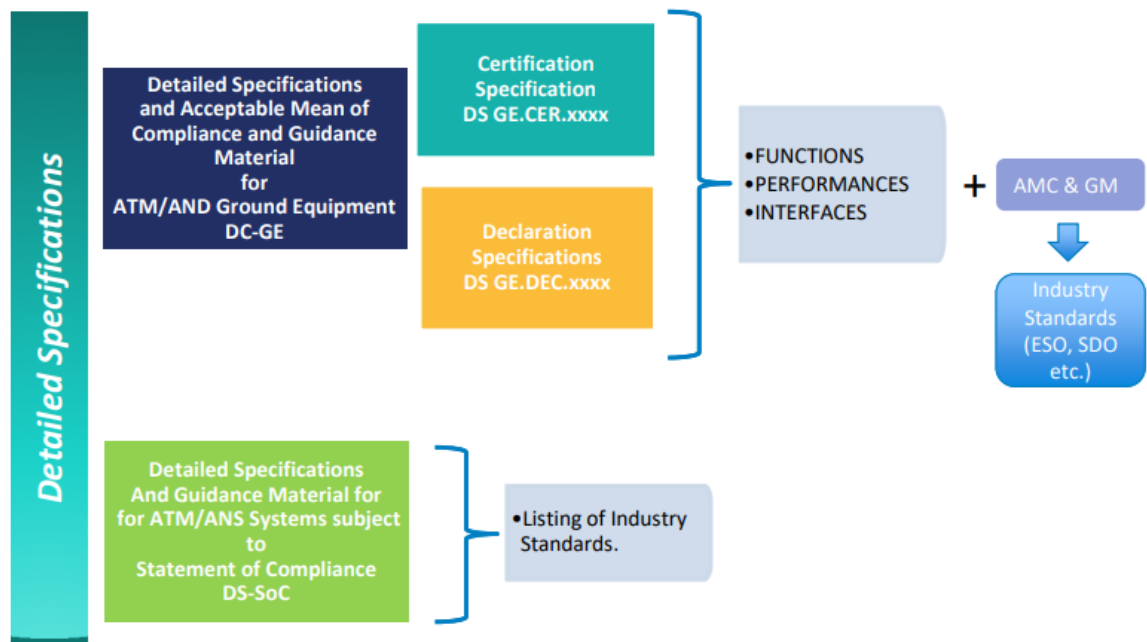


Figure 2 – Structure and format of the Detailed Specifications.

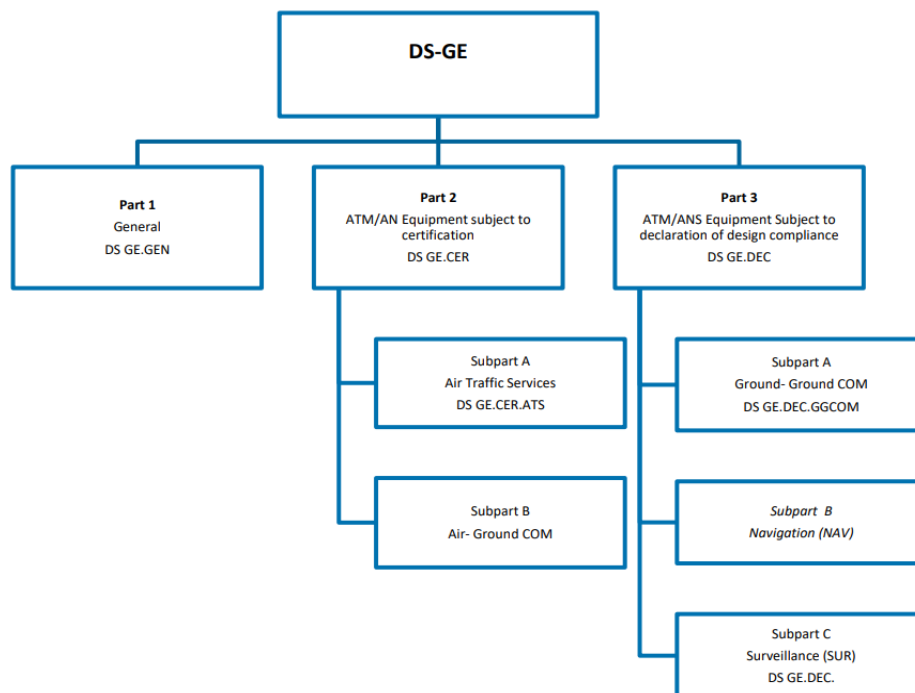


Figure 3 – High-level detailed specification structure for ATM/ANS equipment subject to Certification/Declaration instruments.

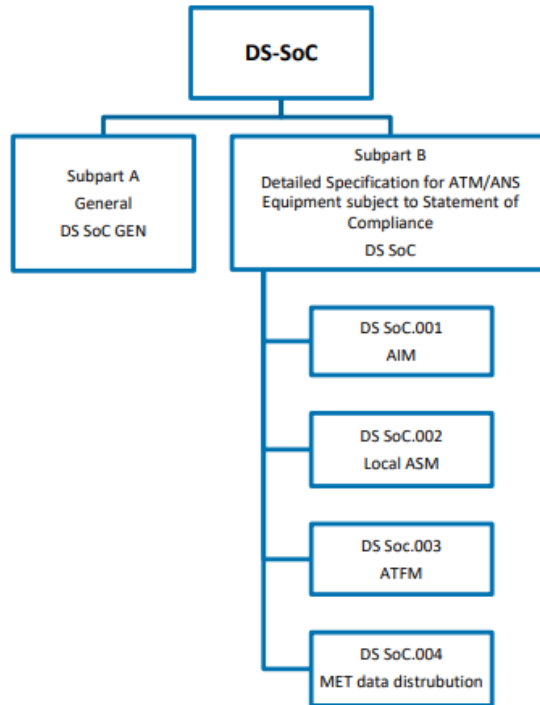


Figure 4 - High-level detailed specification structure for ATM/ANS equipment subject to Statement of Compliance (SoC) instrument.

EASA has advised that work is ongoing in relation to further enhancing this initial set of detailed specifications and that they may be further amended in the future if the need to do so is identified. ANSPs should ensure that they continue to monitor EASA progress in this regard.

Please note that where specific ATM/ANS equipment is not specifically addressed in a Detailed Specification subpart, then demonstration of conformance with the high-level 'General' part of the Detailed Specification should be documented.

6. Transitional provisions

Commission Delegated Regulation (EU) 2023/1768; Article 7 addresses transitional provisions associated with the introduction and implementation of the new ATM/ANS GE conformity assessment framework and with consideration to its complexity as follows -

- A 5-year transitional period is provided to ensure the full implementation of the new conformity assessment framework;
- For existing ATM/ANS equipment that was put into operation before the date of entry into force of this delegated act, the extant EC Declaration of Verification (DoV), along with associated Technical File and DSU/DoC, are considered to remain valid as a means of demonstrating compliance upon entry into force of the new conformity assessment framework. EASA will evaluate the above ATM/ANS equipment that has been identified as falling under either Certification or Declaration instruments, within 5 years

from the date of entry into force of this delegated act and shall publish the results of that evaluation.

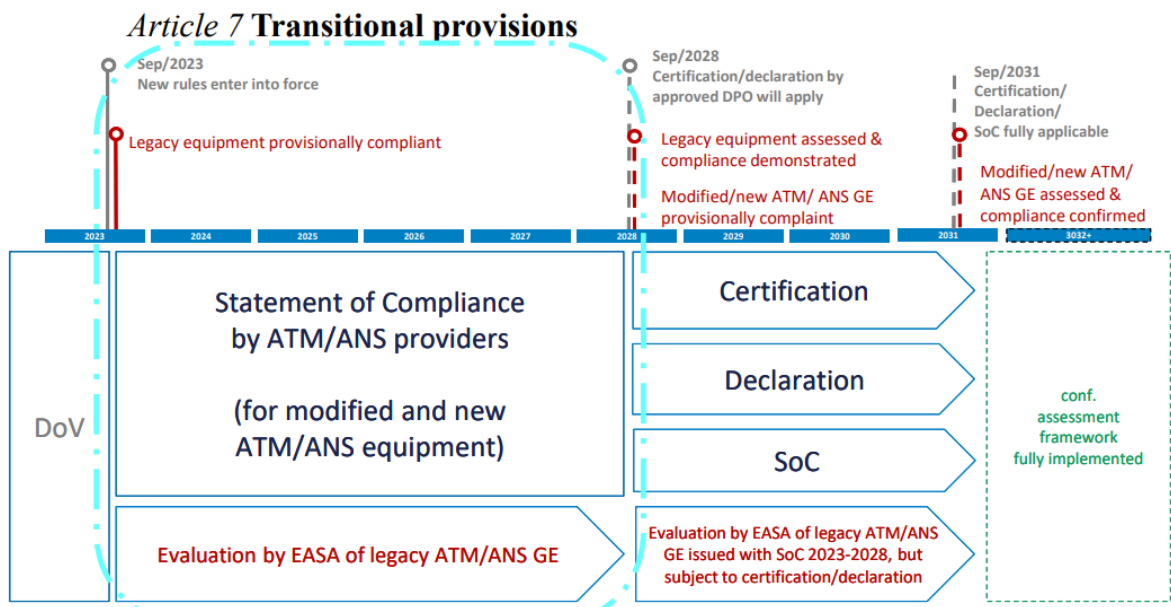
- New or modified ATM/ANS equipment that has been identified as falling under either Certification or Declaration instruments, may be put into operation from the date of entry into force of this delegated act until 12 September 2028 on the basis of a valid SoC.

It should be noted that during this transitional phase, ANSPs must ensure that supporting evidence of such ATM/ANS equipment meeting all applicable published Certification/Declaration Detailed Specifications is documented and referenced in the SoC.

EASA will evaluate the above ATM/ANS equipment that has been identified as falling under either Certification or Declaration instrument, no later than 12 September 2030.

- New or modified ATM/ANS equipment that has been identified as falling under SoC instrument, may be put into operation from the date of entry into force of this delegated act, on the basis of a valid SoC and supporting evidence that all applicable published SoC detailed specifications have been met.

Further information on the management and content to be included in the SoC will be addressed in the AMC & GM documentation associated with this new delegated act.



7. Specific guidelines for ATM/ANS equipment with legacy EC declarations

For information, a traceability between the Essential Requirements of the repealed interoperability Regulation and the EASA Basic Regulation is provided in Annex 1 of this memorandum. It should be noted that the revised Essential Requirements in the EASA Basic Regulation remain similar in terms of nature and granularity.

Therefore, where existing ATM/ANS equipment was put into service before the EASA Basic Regulation became applicable and no system upgrade has taken place subsequent, it was previously recommended by EASA that for the sake of simplicity, EC declarations not be issued retroactively. As such, valid legacy EC Declarations for EATMN equipment configuration implemented before the Interoperability Regulation was repealed and where such ATM/ANS equipment has not subsequently been upgraded, are still considered suitable for use.

8. Specific guidelines for the conformity assessment of ATM/ANS equipment supporting meteorological services

It should be noted that EASA Basic Regulation; Annex VIII, requires systems and procedures that support meteorological services to demonstrate compliance with the applicable essential requirements.

In this regard:

a) ATM/ANS equipment that support meteorological services, not previously subject to the repealed Interoperability Regulation, but put into service before the EASA Basic Regulation became applicable, do not need to be accompanied by an EC declaration as long as they are not upgraded.

It was recommended by EASA that the issuance of EC declarations not be retroactively extended to such ATM/ANS systems implemented before the Interoperability Regulation was repealed, as such requirement was not applicable at that time.

b) A SoC should be issued for new or upgraded ATM/ANS equipment that support meteorological services, which are put into operation after the EASA Basic Regulation became applicable and following entry into force of the new ATM/ANS GE conformity assessment framework. Demonstration of conformance with applicable detailed specifications should be included in the SoC.

ANNEX I – Traceability of Essential Requirements

ERs in Annexes VIII and VII to the Basic Regulation	Equivalent ERs in Annex II to the interoperability Regulation	Comparison
Annex VIII Essential requirements for ATM/ANS systems	ANNEX II Essential requirements	
<i>Note: only relevant requirements for ATM/ANS systems and constituents used in support of ATM/ANS services and functions have been taken into account</i>		
2. SERVICES		
2.1. Aeronautical information and data for airspace users for the purpose of air navigation		
2.1.1. The data used as a source for aeronautical information shall be of sufficient quality, complete, current and provided in a timely manner.	Part B, Point 7 Part A, Point 1	Similar in nature and granularity
2.1.2. Aeronautical information shall be accurate, complete, current, unambiguous, from a legitimate source, and of adequate integrity, as well as in a format suitable for users.	Part B, Point 7 Part A, Point 1	Similar in nature and granularity
2.1.3. The dissemination of such aeronautical information to airspace users shall be timely and use sufficiently reliable and expeditious means of communication protected from intentional and unintentional interference and corruption.	Part B, Point 7 Part A, Point 1 Part A, Point 3 (last paragraph)	Similar in nature and granularity
2.2. Meteorological information		
2.2.1. The data used as a source for aeronautical meteorological information shall be of sufficient quality, complete and current.	Part B, Point 8 Part A, Point 1	The interoperability Regulation focuses on systems that are used to display MET info to end users, while the MET requirements in the Basic Regulation are applicable to any MET system used. They are drafted in the same way as the requirements for aeronautical data and info, thus encompassing the entire MET data/info lifecycle (from origination to end use). This is consistent with the fact that the MET-related requirements now apply to any MET systems used in support of the service.
2.2.2. To the extent possible, aeronautical meteorological information shall be precise, complete, current, and unambiguous in order to meet the needs of airspace users. Aeronautical meteorological information shall be from a legitimate source.	Part B, Point 8 Part A, Point 1	See comment in 2.2.1
2.2.3. The dissemination of such aeronautical meteorological information to airspace users shall be timely and use sufficiently reliable and expeditious means of communication protected from interference and corruption.	Part B, Point 8 Part A, Point 1 Part A, Point 3 (last paragraph)	See comment in 2.2.1
2.3. Air traffic services		
2.3.1. The data used as a source for the provision of air traffic services shall be correct, complete and current.	Part B, Point 3 Part A, Point 1	ERs are similar in nature and with regard to the global objectives. ATS ERs in the Basic Regulation clearly consider the use of technology and automation, which is explicitly or implicitly reflected in this Point. ERs in Part B of Annex II contemplate the division of requirements per FDPS, SDP and HMI, while Part A provides general requirements to be taken into account.
2.3.2. The provision of air traffic services shall be sufficiently precise, complete, current, and unambiguous to meet the safety needs of users.	Part B, Point 3 Part A, Point 3 (first 4 paragraphs)	See comment in 2.3.1
2.3.3. Automated tools providing information or advice to users shall be properly designed, produced and maintained to ensure that they are fit for their intended purpose.	Part B, Point 3 Part A, Point 3 (second and fourth paragraph)	See comment in 2.3.1
2.3.4. Air traffic control services and related processes shall provide for adequate separation between aircraft and, on the aerodrome manoeuvring area, prevent collisions between aircraft and obstructions and, where appropriate, assist in protection from other airborne hazards and shall ensure prompt and timely coordination with all relevant users and adjacent volumes of airspace.	Part B, Point 3 Part A, Point 2 Part A, Point 3 (first 4 paragraphs)	See comment in 2.3.1
2.3.5. Communication between air traffic services and aircraft and between relevant air traffic services units shall be timely, clear, correct and unambiguous, protected from interference and commonly understood and, if applicable, acknowledged by all actors involved.	Part B, Point 3 Part A, Point 1 Part A, Point 3 (last paragraph) Part A, Point 4 (second paragraph)	See comment in 2.3.1
2.3.6. Means shall be in place to detect possible emergencies and, when appropriate, to initiate effective search and rescue action. Such means shall, as a minimum, comprise appropriate alerting mechanisms, coordination measures and procedures, means and personnel to cover the area of responsibility efficiently.	-	Not explicitly addressed, although with little relevance from system point of view.
2.4. Communication services	Part B, Point 4 Part A, Point 3 (last paragraph)	Similar in nature and granularity
Communication services shall achieve and maintain sufficient performance with regard to their availability, integrity, continuity and timeliness. They shall be expeditious and protected from corruption and interference.		
2.5. Navigation services	Part B, Point 5	Similar in nature and granularity
Navigation services shall achieve and maintain a sufficient level of performance with regard to guidance, positioning and, when provided, timing information. The performance criteria include accuracy, integrity, legitimacy of the source, availability, and continuity of the service.		
2.6. Surveillance services	Part B, Point 5 Part A, Point 4 (second paragraph)	Similar in nature and granularity
Surveillance services shall determine the respective position of aircraft in the air and of other aircraft and ground vehicles on the aerodrome surface, with sufficient performance with regard to their accuracy, integrity, legitimacy of the source, continuity and probability of detection.		

<p>2.7. Air traffic flow management</p> <p>The tactical management of air traffic flows at Union level shall use and provide sufficiently precise and current information of the volume and nature of the planned air traffic affecting service provision and shall coordinate and negotiate re-routing or delaying traffic flows in order to reduce the risk of overloading situations occurring in the air or at the aerodromes. Flow management shall be performed with a view to optimising available capacity in the use of airspace and enhancing air traffic flow management processes. It shall be based on safety, transparency and efficiency, ensuring that capacity is provided in a flexible and timely manner, consistent with the European Air Navigation Plan. The measures referred to in Article 43, concerning flow management shall support operational decisions by air navigation service providers, aerodrome operators and airspace users and shall cover the following areas:</p> <ul style="list-style-type: none"> (a) flight planning; (b) use of available airspace capacity during all phases of flight, including en-route slot assignment; (c) use of routings by general air traffic, including: <ul style="list-style-type: none"> — the creation of a single publication for route and traffic orientation, — options for diversion of general air traffic from congested areas, and — priority rules regarding access to airspace for general air traffic, particularly during periods of congestion and crisis; and (d) the consistency between flight plans and airport slots and the necessary coordination with adjacent regions, as appropriate. 	<p>Part B, Point 2 Part A, Point 4</p>	<p>In this case, the ERs in the Basic Regulation provide more guidance on what is expected to be achieved. More details are provided with regard to the importance of an adequate data sharing, the actors involved, and the relevant considerations; thus resulting in a more explicit requirement, though perfectly compatible with the corresponding requirements in Annex II to the interoperability Regulation.</p>
<p>2.8. Airspace management</p> <p>The designation of specific volumes of airspace for a certain use shall be monitored, coordinated and promulgated in a timely manner in order to reduce the risk of loss of separation between aircraft in all circumstances. Taking into account the organisation of military activities and related aspects under the responsibility of the Member States, airspace management shall also support the uniform application of the concept of the flexible use of airspace as described by the ICAO and as implemented under Regulation (EC) No 551/2004, in order to facilitate airspace management and air traffic management in the context of the common transport policy.</p>	<p>Part B, Point 1 Part A, Point 4</p>	<p>Similar in nature and granularity</p>
<p>2.9. Flight procedure design</p> <p>Flight procedures shall be properly designed, surveyed and validated before they can be deployed and used by aircraft.</p>	<p>-</p>	<p>Not explicitly covered. Specific software and tools can be used for flight procedure design purposes, although these are not expressly included in the list of systems included in Point 3.1 of Annex VIII, nor were they included in Annex I to the interoperability Regulation.</p>
3. SYSTEMS AND CONSTITUENTS		
<p>3.1. General</p> <p>ATM/ANS systems and ATM/ANS constituents providing related information to and from the aircraft and on the ground shall be properly designed, produced, installed, maintained, protected against unauthorised interference and operated to ensure that they are fit for their intended purpose. The systems and procedures shall include in particular those required to support the following functions and services:</p> <ul style="list-style-type: none"> (a) Airspace management; (b) Air traffic flow management; (c) Air traffic services, in particular flight data processing systems, surveillance data processing systems and human-machine interface systems; (d) Communications including ground-to-ground/space, air-to-ground and air-to-air/space communications; (e) Navigation; (f) Surveillance; (g) Aeronautical information services; and (h) Meteorological services. 	<p>Annex II, globally.</p>	<p>Very high level requirement that could be met by meeting the relevant requirements in Annex II.</p> <p>As regards the affected systems, it should be noted that the list of systems that should meet the Basic Regulation ERs is not exhaustive. The systems expressly mentioned are the same to those included in Annex I to the interoperability Regulation, except that the Basic Regulation broadly considers any systems in support of MET, as well as space-based COM services.</p>
<p>3.2. System and constituent integrity, performance and reliability</p> <p>The integrity and safety-related performance of systems and constituents whether on aircraft, on the ground or in space, shall be fit for their intended purpose. They shall meet the required level of operational performance for all their foreseeable operating conditions and for their whole operational life.</p> <p>ATM/ANS systems and ATM/ANS constituents shall be designed, built, maintained and operated using the appropriate and validated procedures, in such a way as to ensure the seamless operation of the European air traffic management network (EATMN) at all times and for all phases of flight. Seamless operation can be expressed, in particular, in terms of information-sharing, including the relevant operational status information, common understanding of information, comparable processing performances and the associated procedures enabling common operational performances agreed for the whole or parts of the EATMN.</p> <p>The EATMN, its systems and their constituents shall support, on a coordinated basis, new agreed and validated concepts of operation that improve the quality, sustainability and effectiveness of air navigation services, in particular in terms of safety and capacity.</p> <p>The EATMN, its systems and their constituents shall support the progressive implementation of civil/military coordination, to the extent necessary for effective airspace and air traffic flow management, and the safe and efficient use of airspace by all users, through the application of the concept of the flexible use of airspace.</p> <p>To achieve those objectives, the EATMN, its systems and their constituents shall support the timely sharing of correct and consistent information covering all phases of flight, between civil and military parties, without prejudice to security or defence policy interests, including requirements on confidentiality.</p>	<p>Part A, Point 1 Part A, Point 2 Part A, Point 3, paragraphs 2, 3, 4 Part A, Point 4 Part B, globally</p>	<p>Except for the first paragraph of 3.2, which is a very generic requirement, these Basic Regulation essential requirements are almost a literal copy of the requirements in Annex II.</p> <p>The first paragraph is a very generic requirement that seeks to ensure system suitability for use, therefore, it is met by conforming to the specific requirements for the different EATMN systems in Part B.</p>
<p>3.3. Design of systems and constituents</p>		

3.3.1. Systems and constituents shall be designed to meet applicable safety and security requirements.	Part A, Point 3, especially paragraph 3 Part A, Point 4 Part B, Point 1	Only national security requirements are considered in the interoperability Regulation when taking about civil-military coordination and airspace management. In this regard, this does not represent an issue, since there are no common EU security requirements for ground systems and constituents for the time being.
3.3.2. Systems and constituents, considered collectively, separately and in relation to each other, shall be designed in such a way that an inverse relationship exists between the probability that any failure can result in a total system failure and the severity of its effect on the safety of services.	Part A, Point 3, especially paragraph 3	The equivalent requirements in the interoperability Regulation are not that explicit, but it is assumed that the noted 'inverse relationship' is widely applied as best practice.
3.3.3. Systems and constituents, considered individually and in combination with each other, shall be designed taking into account limitations related to human capabilities and performance.	Part A, Point 3, paragraph 4 Part B, Point 3.3	Similar in nature and granularity
3.3.4. Systems and constituents shall be designed in a manner that protects them and the data they convey from harmful interactions with internal and external elements.	Part A, Point 3, last paragraph Part A, Point 5	
3.3.5. Information needed for production, installation, operation and maintenance of the systems and constituents as well as information concerning unsafe conditions shall be provided to personnel in a clear, consistent and unambiguous manner.	-	Not explicitly addressed in Annex II to the interoperability Regulation. However, it should be noted that this information requirement is implicitly addressed during the verification of compliance activities described in Annexes III and IV to said Regulation, so it has no impact during the transitional period.
3.4. Continuing level of service Safety levels of systems and constituents shall be maintained during service and any modifications to service.	Part A, Point 3, especially the first 3 paragraphs	The validity of the requirements in Annex during the system lifecycle is somehow implicit.