



Bundesaufsichtsamt
für Flugsicherung

Directive on the Notification, Review and Ap- proval of Changes

*Federal Supervisory Authority for Air Navigation Services
(SOP/17.00.02/0001-001/20)*



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Record of Amendments

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1.0	08/2010	All	First version
1.1	11/2011	All	Adaptation to new regulations
1.2	05/2013	Chapter 1; chapter 2; chapter 3; chapter 4; chapter 5; chapter 7	Integration of relevant implementing regulations; examples, notes; forms, deadlines; validation of safety assessments; EC declarations of verification of systems, EC-declarations of conformity/suitability for use of constituents; deadline for reviews; documented demonstration of non-safety relevance (NfS); adaptation of pertinent documentation
1.3	05/2013	All	Editorial amendments
1.4	06/2013	All	Editorial amendments
1.5	07/2013	Chapter 2	Clarification regarding projects that do not constitute any changes within the meaning of the regulation
1.6	08/2014	All	Editorial amendments, tie-in of comments, new title; incorporation of FA-BEC changes
2.0	12/2014	All	Published version
2.1	06/2015	Chapter 2.1.3 footnote,	Editorial amendments, minor changes due to feedback from ANSPs
2.2	11/2017	Entry into force and transitional arrangements, chapter 1; 2; 4; 5; 7; 8	Adaptation to new regulations, adaptations to extended requirements from international obligations, clarifications, editorial amendments
2.3	01/2018	Abbreviations and definitions of terms, entry into force and transitional arrangements; chapter 7.1	Incorporation of feedback from ANSPs
3.0	03/2018	Incorporation of all amendments since V2.0	Published version



3.1	12/2018	Abbreviations and definitions of terms, entry into force and transitional arrangements; chapter 5.2; chapter 7.1	Editorial additions and updates; supplement describing training/instruction measures in detail; requirements list completed and text formatting corrected
4.0	01/2019	Cf. version 3.1	Published version
4.1	07/2019	All	New draft based on the requirements of <i>Commission Implementing Regulation (EU) 2017/373</i> , extension of the title to cover all changes
4.2	08/2019	All	Incorporation of feedback from within the BAF
4.3	10/2019	All	Draft version sent to services providers for comment, new design
4.4	11/2019	All	Incorporation of feedback from the services providers, from Eurocontrol and from within the BAF; Inclusion of <i>ED Decision 2019/022/R</i>
5.0	11/2019	All	Published version
5.1	09/2020	All	Editorial adjustments and incorporation of improvements/precisions based on initial feedback from practical application, Inclusion of IR (EU) 2020/469
5.2	11/2020	All	SOP-internal consolidation
5.3	11/2020	All	Version after inclusion of external comments and hints
6.0	11/2020	Cf. version 5.3	Published version



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Abbreviations and Definitions

A1-CHANGE	German: a1-Änderung; A → CHANGE to / affecting the → FUNCTIONAL SYSTEM according to <i>Commission Implementing Regulation (EU) 2017/373, point ATM/ANS.OR.A.040 letter (a) paragraph (1)</i>
A2-CHANGE	German: a2-Änderung; A → CHANGE according to <i>Commission Implementing Regulation (EU) 2017/373, point ATM/ANS.OR.A.040 letter (a) paragraph (2)</i> . This includes: <ul style="list-style-type: none">• changes in the provision of service, and• changes to the management and/or safety management system of a → SERVICE PROVIDER which do not affect the → FUNCTIONAL SYSTEM
AFIS	Aerodrome → FIS; German: Flugplatz-Fluginformationsdienst; from <i>Commission Implementing Regulation (EU) 2017/373</i> : a flight information service and alerting service for aerodrome traffic at an aerodrome
AGENCY	EASA
AIS	Aeronautical Information Services; German: Flugberatungsdienste
ALTMOC	Alternative Means of Compliance; German: Alternative Nachweisverfahren; from <i>Commission Implementing Regulation (EU) 2017/373</i> : Those means of compliance that propose an alternative to an existing → AMC or those that propose new means to establish compliance with <i>Regulation (EC) No 216/2008</i> or <i>Regulation (EU) 2018/1139</i> and its Implementing Rules for which no associated AMC have been adopted by the Agency (note: EASA)
AMC	Acceptable Means of Compliance; German: Annehmbare Nachweisverfahren; from <i>Commission Implementing Regulation (EU) 2017/373</i> : Means non-binding standards adopted by the Agency (note: EASA) to illustrate means to establish compliance with <i>Regulation (EC) No 216/2008</i> or <i>Regulation (EU) 2018/1139</i> and its implementing rules. Note: Applying/adhering to/complying with the AMCs is virtually binding unless → AltMoC have



	been requested by a → SERVICE PROVIDER and approved by the competent authority
ANS	Air Navigation Services; German: Flugsicherungsdienste; made up of → ATS, → AIS, → CNS, → MET
ANS PROVIDER	German: Flugsicherungsorganisation; from <i>Regulation (EC) No 549/2004</i> : any public or private entity providing → ANS (Air Navigation Services) for General Air Traffic
ARGUMENT	From <i>Commission Implementing Regulation (EU) 2017/373</i> : means a claim that is supported via inferences by a body of evidence;
ASD	Airspace Design (services); German, from <i>Commission Regulation (EU) No 677/2011</i> : Lauftraumauslegung (-sdienste)
ASM	Airspace Management; German Luftraummanagement
ASSURANCE CASE	Either a → SAFETY CASE or a → SAFETY SUPPORT CASE
ATFM	Air Traffic Flow Management; German: Verkehrsflussregelung
ATM	Air Traffic Management; German: → FLUGVERKEHRSMANAGEMENT; from <i>Regulation (EC) No 549/2004</i> : means the aggregation of the airborne and ground-based functions (Air Traffic Services (→ ATS), Airspace Management (→ ASM) and Air Traffic Flow Management (→ ATFM)) required to ensure the safe and efficient movement of aircraft during all phases of operations
ATM/ANS	From <i>Regulation (EU) 2018/1139</i> : Air Traffic Management (→ ATM) and Air Navigation Services (→ ANS) and hence covering all of the following: the Air Traffic Management functions and services as defined in <i>point (10) of Article 2 of Regulation (EC) No 549/2004</i> ; the Air Navigation Services as defined in <i>point (4) of Article 2 of that Regulation</i> , including the Network Management functions and services referred to in <i>Article 6 of Regulation (EC) No 551/2004 (→ ATM NETWORK FUNCTIONS)</i> , as well as services which augment signals emitted by satellites of core constellations of GNSS for the purpose of air navigation; Flight Procedures Design (→ FPD); and services consisting in the origination and processing of data and the formatting and delivering of data to General Air Traffic for the purpose of air navigation (→ DAT)



ATM NETWORK FUNCTIONS	from <i>Commission Implementing Regulation (EU) 2017/373</i> : the functions performed by the → NETWORK MANAGER in accordance with <i>Regulation (EU) No 677/2011</i> or <i>Commission Implementing Regulation (EU) 2019/123</i> ; German: Funktionen des Flugverkehrsmanagementnetzes (Netzmanagementfunktionen und -dienste or in short “Netzfunktionen“)
ATS	Air Traffic Services; German: Flugverkehrsdienste
AVIATION UNDERTAKING	German: Luftfahrtakteur; from <i>Commission Implementing Regulation (EU) 2017/373</i> : an entity, person or organisation, other than the → SERVICE PROVIDERS regulated by this Regulation, that is affected by or affects a service delivered by a → SERVICE PROVIDER According to <i>Commission Implementing Regulation (EU) 2017/373, GM2 ATM/ANS.OR.A.045(e)</i> this can be: <ol style="list-style-type: none">(1) Service providers that do not fall under the remit of the <i>Basic Regulation</i> and its implementing rules, e.g. non-European service providers(2) Aerodrome operators(3) Aircraft operators(4) Airframe and equipment manufacturers(5) Maintenance organisations(6) Regulatory bodies, e.g. European Commission, EASA, national aviation authorities (NAAs)(7) Other bodies not regulated by the <i>Basic Regulation</i> and its implementing rules, e.g. power suppliers or military authorities
BAF	Bundesaufsichtsamt für Flugsicherung (Federal Supervisory Authority for Air Navigation Services)
BASIC REGULATION	German: Basisverordnung; <i>Regulation (EU) 2018/1139</i> , formerly: <i>Regulation (EG) 216/2008</i>
CBT	Computer Based Training
CHANGE	German: Änderung / Veränderung; according to <i>Commission Implementing Regulation (EU) 2017/373</i> , a distinction must be made between:



	<p>(a) The introduction of a new → FUNCTIONAL SYSTEM or the modification of an existing → FUNCTIONAL SYSTEM or a change that affects the → FUNCTIONAL SYSTEM</p> <p>(b) A → CHANGE to the provision of service, within the management and/or safety management system of a → SERVICE PROVIDER that does not affect the → FUNCTIONAL SYSTEM</p>
CNS (SERVICES)	Communication, Navigation, Surveillance (Services); German: Kommunikations-, Navigations-, Überwachungsdienste
CONVERSION TRAINING	German: Umschulung; derived from <i>Regulation (EU) 2015/340, ATCO.D.085 b</i> : A conversion training course resulting from a → SAFETY ASSESSMENT and approved by the competent authority for a → CHANGE in the operational environment, including the appropriate training method, the duration of the measure and the examination and/or assessment method, which has been or will be designed and delivered by a certified training organization.
CROSS-BORDER CHANGE	A special form of a → SINGLE-ACTOR CHANGE, which extends across a state border; usually against the background of cross-border → SERVICE PROVISION / provision of services on the basis of a delegation of services.
DAT	<p>Data Services or → PROVIDER of data services; from <i>Regulation (EU) 2018/1139</i> in connection with <i>Commission Implementing Regulation (EU) 2017/373</i>: Services consisting in the generation, processing and formatting of data and their transmission to general air traffic for the purpose of Air Traffic Control. Moreover, <i>Commission Implementing Regulation (EU) 2017/373</i> makes a distinction between two types of DAT providers:</p> <p>a) Type 1-DAT: A data provider that processes aeronautical data for use on aircraft and provides an aeronautical database meeting the DQRs, under controlled conditions, for which no corresponding airborne application/equipment compatibility has been determined</p> <p>b) Type 2-DAT: A data provider that processes aeronautical data and provides an aeronautical database for use on certified aircraft application/equipment meeting the DQRs for which compatibility with that application/equipment has been determined</p>
FHA	Functional Hazard Assessment



FIS	Flight Information Services; German: Fluginformationsdienst; the provision of useful advice and information for safe and efficient flight operations.
FPD	Flight Procedure Design (Services); German: Verfahrensplanung(sanbieter) / Gestaltung der Flugverfahren; a subset of → ASD; from <i>Commission Implementing Regulations (EU) 2020/469</i> and <i>2017/373</i> : services for the design, documentation, validation, maintenance and periodic review of flight procedures necessary for the safety, regularity and efficiency of air navigation
FUNCTIONAL SYSTEM	German: Funktionales System; from <i>Commission Implementing Regulation (EU) 2017/373</i> : a combination of procedures, human resources and equipment, including hardware and software, organised, to perform a function within the context of → ATM/ANS and other → ATM NETWORK FUNCTIONS
GM	Guidance Material; German: Anleitungsmaterial; from <i>Commission Implementing Regulation (EU) 2017/373</i> : Non-binding material developed by the Agency (note: EASA) that helps to illustrate the meaning of a requirement or specification and is used to support the interpretation of <i>Regulation (EC) No 216/2008</i> or <i>Regulation (EU) 2018/1139</i> , their implementing rules and → AMC
HAZARD	German: Gefahr / Bedrohung; from <i>Commission Implementing Regulation (EU) 2017/373</i> : any condition, event, or circumstance which could induce a harmful effect; Note 1: Shift in meaning compared to the definition in <i>Commission Implementing Regulation (EU) No. 1035/2011</i> , where a reference to accidents was made! Note 2: “harmful effect” in the context of the of <i>Commission Implementing Regulation (EU) 2017/373</i> only refers to persons and not to equipment!
LMS	Learning Management System
LOA	Letter of Agreement, German: Betriebsabsprache; governs operating procedures between two or more parties in the form of a consensual agreement
LOCAL PART	The part of the → SAFETY ASSESSMENT or → SAFETY SUPPORT ASSESSMENT pertaining to a → MULTI-ACTOR CHANGE that considers the purely national (in the stricter sense of this Directive: con-



	cerning Germany only) aspects of a → SERVICE PROVIDER involved in a → MULTI-ACTOR CHANGE; it is generally supplemented by an → OASA and is then valid only in connection with the latter
MET	Meteorological Services; German: Flugwetterdienste
MULTI-ACTOR CHANGE	German: Multi-Akteur Änderung; a → CHANGE to the → FUNCTIONAL SYSTEM(S) that affects more than one → SERVICE PROVIDER and/or → AVIATION UNDERTAKING
MULTI-STATE MULTI-ACTOR CHANGE	German: Mehr-Staaten Multi-Akteur Änderung; a → MULTI-ACTOR CHANGE that involves at least two states. This is the case, for example, if the → MULTI-ACTOR CHANGE affects the territory of more than one state or if → SERVICE PROVIDERS based in different states are involved
NETWORK MANAGER	German: Netzmanager; from <i>Commission Implementing Regulation (EU) 2019/123</i> : the body entrusted with the tasks necessary for carrying out the functions referred to in <i>Regulation (EC) No 551/2004 Article 6</i> (→ ATM NETWORK FUNCTIONS)
NFS	German: Nachweis fehlender Sicherheitsrelevanz (demonstration of lack of safety relevance); now obsolete, since the distinction between safety-related and non-safety-related → CHANGES no longer applies after <i>Commission Implementing Regulation (EU) 2017/373</i> came into force
NOC	Notification of (a) → CHANGE to the → FUNCTIONAL SYSTEM; German: Anmeldung einer Änderung am Funktionalen System
NSA	National Supervisory Authority; note: in Germany, this is the → BAF in the context of this Directive
OASA	Overarching Safety (Support) Argument, German: übergeordnetes (unterstützendes) Sicherheitsargument; an → ARGUMENT coordinated between → SERVICE PROVIDERS and/or → AVIATION UNDERTAKINGS initiating a → CHANGE or being affected by a → CHANGE, which constitutes: <ul style="list-style-type: none">• Joint assumptions• Joint mitigation measures and• Dependencies between service providers and, where appropriate, aviation undertakings



	and thus, an elementary module in the demonstration of compliance for a → MULTI-ACTOR CHANGE.
PAN-EUROPEAN SERVICE	German: Europaweiter Dienst; from <i>Commission Implementing Regulation (EU) 2017/373</i> : an activity which is designed and established for users within most or all Member States and which may also extend beyond the airspace of the territory to which the Treaty applies
PRODUCT	<p>From DIN EN ISO 9000:2015: Result of an organisation (note: here of a → SERVICE PROVIDER) that can be generated without any transaction between organisation and customer</p> <p>Note 1: The generation of a product is achieved without necessarily involving a transaction between → PROVIDER and customer; it may, however, include this service element when it is delivered to the customer.</p> <p>Note 2: The predominant element of a product is that it is usually tangible.</p>
PROVIDER	Cf. → SERVICE PROVIDER
PROXY/PROXIES	German: Vertreter; from <i>Commission Implementing Regulation (EU) 2017/373</i> : in a generic sense, a measurable property that can be used to represent the value of something else. In the → SAFETY ASSESSMENT of → FUNCTIONAL SYSTEMS, the value of a proxy can be used as a substitute for a → RISK value. A proxy is then a measure for a certain property along the causal chain between the → HAZARD / of the occurrence in question and the harmful effects of the → HAZARD in question / of the occurrence in question.
PSSA	Preliminary System Safety Assessment
(SAFETY) RISK	From <i>Commission Implementing Regulation (EU) 2017/373</i> : means the combination of the overall probability or frequency of occurrence of a harmful effect induced by a → HAZARD and the severity of that effect
SAFETY ARGUMENT	German: Sicherheitsargument; from <i>Commission Implementing Regulation (EU) No 1034/2011</i> : means the demonstration and evidence that a proposed → CHANGE to a → FUNCTIONAL SYSTEM can be implemented within the targets or standards established through the existing regulatory framework consistently with the safety regulatory requirements



	<p>Note: From 2020, only for → CHANGES to → FUNCTIONAL SYSTEM of → ATS → PROVIDERS. For non-ATS → PROVIDERS, → “SAFETY SUPPORT ARGUMENTS are applicable.</p>
SAFETY ASSESSMENT	<p>German: Sicherheitsbewertung / Sicherheitsbeurteilung; the process of → RISK assessment and mitigation and, associated with this, the totality of all steps necessary to establish and demonstrate the required safety level of a → FUNCTIONAL SYSTEM, in particular in case of → CHANGES.</p> <p>Note: From 2020, only applicable to changes to → FUNCTIONAL SYSTEMS of → ATS → PROVIDERS. For non-ATS providers, → SAFETY SUPPORT ASSESSMENTS are applicable.</p>
SAFETY CASE	<p>Derived from the AMC to <i>Commission Implementing Regulation (EU) 2017/373</i>: German: Sicherheitsnachweis, frequently also Sicherheitsdokumentation; the form prescribed by the aforementioned <i>Commission Implementing Regulation</i> in which proof of a → CHANGE to the → FUNCTIONAL SYSTEM of a → PROVIDER of → ATS is documented. The safety case shall provide assurance, with sufficient confidence, via a complete, documented and valid → ARGUMENT that the → SAFETY CRITERIA identified via the application of point ATS.OR.210 are valid, will be satisfied and will remain satisfied</p>
SAFETY CRITERIA	<p>German: Sicherheitskriterien; derived from <i>Commission Implementing Regulation (EU) 2017/373</i>; Specific and verifiable criteria where each criterion is expressed in terms of an explicit, quantitative level of safety → RISK or another measure that relates to safety → RISK, against which the safety acceptance of a change to an → ATS → FUNCTIONAL SYSTEM can be assessed.</p>
SAFETY OBJECTIVE	<p>German: Sicherheitsziel; from <i>Commission Implementing Regulation (EU) No 1034/2011</i>: obsolete; referred to a qualitative or quantitative statement indicating the maximum frequency or probability of an expected (i.e. allowed) → Hazard occurrence;</p> <p>Note: No longer used in this meaning in <i>Commission Implementing Regulation (EU) 2017/373</i> in the context of → CHANGES to → FUNCTIONAL SYSTEMS!</p>
SAFETY REQUIREMENT	<p>German: Sicherheitsanforderung. Derived from the AMC/GM to <i>Commission Implementing Regulation (EU) 2017/373</i>: necessary characteristics of an → ATS → FUNCTIONAL SYSTEM that ensure</p>



	<p>that the system functions as specified. Based on the examination/demonstration of these characteristics, it can be concluded that the → SAFETY CRITERIA are fulfilled.</p>
SAFETY SUPPORT ASSESSMENT	<p>German: Unterstützende Sicherheitsbeurteilung; All steps necessary to provide a structured, documented and evidence-based → ARGUMENT in accordance with the requirements of <i>Commission Implementing Regulation (EU) 2017/373 point ATM/ANS.OR.C.005</i>, which provides a convincing, comprehensible and valid justification that a system or → SERVICE only behaves and will only behave as specified for the specific context.</p> <p>Often also used synonymously for the documented result of the aforementioned activities in the form of a report or documentation (→ SAFETY SUPPORT CASE (Document)).</p>
SAFETY SUPPORT CASE	<p>Derived from the AMC to <i>Commission Implementing Regulation (EU) 2017/373</i>: German: → UNTERSTÜTZENDE SICHERHEITSBEURTEILUNG; the form prescribed by the aforementioned <i>Commission Implementing Regulation</i> in which evidence of a non-ATS related → CHANGE to the → FUNCTIONAL SYSTEM of a → SERVICE PROVIDER is documented. The safety support case shall provide assurance, with sufficient confidence, via a complete, documented and valid → ARGUMENT that the service will behave and will continue to behave only as specified in the specified context</p>
SAFETY SUPPORT REQUIREMENT	<p>German: Unterstützende Sicherheitsanforderung; Derived from the AMC/GM to <i>Commission Implementing Regulation (EU) 2017/373</i>: necessary characteristics of a non-ATS → FUNCTIONAL SYSTEM that ensure that the system behaves as specified</p>
SERVICE PROVIDER	<p>German: Diensteanbieter; from <i>Commission Implementing Regulation (EU) 2017/373</i>: Any legal or natural person providing functions or services of → ATM/ANS as defined in <i>point (q) of Article 3 of Regulation (EC) No 216/2008</i> or other → ATM NETWORK FUNCTIONS, either individually or bundled for General Air Traffic</p>
SERVICE PROVISION	<p>German: Dienstleistung, from DIN EN ISO 9000:2015: Result of an organisation (note: in this context by a → SERVICE PROVIDER) with at least one activity, which is necessarily carried out between the organisation and the client</p> <p>Note 1: The predominant elements of a service are usually intangible.</p>



	<p>Note 2: Service provision often involves activities at the interface with the customer to define customer requirements and in the provision of the service and may include an ongoing relationship.</p>
SINGLE-ACTOR CHANGE	<p>German: Einzel-Akteur Änderung; a → CHANGE to the → FUNCTIONAL SYSTEM of a → SERVICE PROVIDER, which has no external effect since it takes place only within the internal organisation of the → SERVICE PROVIDER and has no effects on other → SERVICE PROVIDER or → AVIATION UNDERTAKINGS as neither the service nor the operational context of other service providers or aviation undertakings is affected or altered</p>
SOP	<p>Sicherheitsaufsicht FS-Organisationen und Personal; English: safety supervision of → ATS → Organisations and personnel; a Division of the → BAF</p>
SSA	<p>Two meanings:</p> <ol style="list-style-type: none">1. System Safety Assessment2. → SAFETY SUPPORT ASSESSMENT
TARGET STATE	<p>German: Sollzustand; The (safety) assessed manifestation, functionality and configuration of a → FUNCTIONAL SYSTEM as described in the system specification. In the case of legacy systems, i.e. systems that have not been modified after the entry into force of <i>Regulation (EC) No 2096/2005</i> on 24 December 2005, the target state shall be equivalent to the state of the system when <i>Regulation (EC) No 2096/2005</i> entered into force.</p>



Entry into force and transitional arrangements

This Directive will enter into force on 01 January 2021 and will supersede the “Richtlinie über die Anmeldung, Begutachtung und Genehmigung von Änderungen an funktionalen Systemen“ (Directive on the notification, review and approval of changes), Version 5.0, dated November 2019.

Version 5.0 of November 2019 will continue to apply to notifications received by the Bundesluftfahrtbehörde (BAF) up to 31 December 2020. Justified requests for individual transition periods can also be granted after consultation.



1. Introduction

This Directive lays down administrative procedures for fulfilling the obligation to provide evidence to the Federal Supervisory Authority for Air Navigation Services (BAF) as the Competent Authority in connection with changes in general in accordance with *Commission Implementing Regulation (EU) 2017/373 point ATM/ANS.AR.C.025* and with changes to functional systems, in particular, in accordance with *points ATM/ANS.AR.C.030 and ATM/ANS.AR.C.035*. As an administrative regulation interpreting standards for service providers^{1,2} operating in the Federal Republic of Germany and having their principal place of business or registered office there, it contains in particular binding concretisations for the documentation and proof of compliance with the regulatory requirements with regard to changes and in particular planned changes to functional systems on the basis of the above-mentioned *Commission Implementing Regulation (EU) 2017/373*. Furthermore, it documents the procedure by which the registration of the notified change, the decision to review based on it and the review of the safety (support) arguments by the BAF within the scope of its oversight is carried out.

This Directive applies to Air Navigation Services comprising Air Traffic Services (ATS), Communication, Navigation and Surveillance Services (CNS), Meteorological Services (MET) and Aeronautical Information Services (AIS) as well as Air Traffic Flow Management (ATFM), Airspace Management (ASM) and Flight Procedure Design (FPD). Data services (DAT) and ATM Network Functions are delivered by providers of pan-European services and are thus overseen by EASA in accordance with article 4 of *Commission Implementing Regulation (EU) 2017/373* in conjunction with the *Basic Regulation*. They are therefore not affected by this Directive.

¹ See article 4 of *Commission Implementing Regulation (EU) 2017/373*. This explicitly excludes the provision of Air Traffic Services in the Hannover UIR by Eurocontrol/MUAC, which is subject to the supervisory measures and provisions of the 4-States NSA. What is also excluded is the provision of cross-border Air Traffic Services by Air Navigation Services providers located in neighbouring countries, which is subject to the primary oversight of the certifying authority. This is supplemented by oversight cooperation, which is regulated in the Manual for the Common Activities of the FABEC NSAs (for the FABEC) or in bilateral NSA-NSA agreements (between the BAF and the supervisory authorities from non-FABEC neighbouring states) in accordance with the requirements of *Commission Implementing Regulation (EU) 2017/373 point ATM/ANS.ARA.005(c)*.

² If service providers which operate in the Federal Republic of Germany and do not have their principal place of business or registered office there but nevertheless provide services outside the context of cross-border Air Traffic Services provision (e.g. Air Traffic Services at German regional airports), individual arrangements will be made between the supervisory authorities concerned regarding the allocation of oversight activities, which will not be discussed in detail here. However, the formal process described in the present guideline with regard to the notification of changes, the opinion on the notification and the possible submission and review of the arguments including the templates to be used must be adhered to in principle.



This Directive is based on *Commission Implementing Regulation (EU) 2017/373*, which repeals *Regulation (EC) No 482/2008*³ and *Commission Implementing Regulations (EU) No 1034/2011* and *1035/2011*. In *point ATM/ANS.OR.A.040* in conjunction with *ATM/ANS.OR.A.045*, *Commission Implementing Regulation (EU) 2017/373* stipulates that service providers shall inform their National Supervisory Authority of all planned changes. When deciding whether to implement a change to their functional systems in accordance with *point ATM/ANS.AR.C.030* in conjunction with *ATM/ANS.OR.B.010*, service providers shall only use the procedures⁴ approved by their competent authority⁵. In addition, *ATM/ANS.AR.C.035* specifies that some of these changes may only be implemented after a review of the safety (support) argument - in short, the 'argument' - by the National Supervisory Authority in accordance with *point ATM/ANS.AR.C.040* and subsequent approval. This approval does not affect any further requirements to be fulfilled from other relevant national and/or international regulations (e.g. *FSAV (ATC Equipment Regulation), implementing regulations on interoperability, Regulation (EU) No 2015/340*, etc.) and any associated independent approval processes.

In *points ATS.OR.205* and *ATS.OR.210* or *ATM/ANS.OR.C.005*, *Commission Implementing Regulation (EU) 2017/373* also specifies the demands that must be made when preparing a safety (support) case. The elements described there shall be taken into account by the responsible service provider for each change⁶.

This Directive also substantiates the application of provisions, in particular from the following legal bases:

- *Regulation (EU) 2018/1139* on common rules in the field of civil aviation and establishing a European Union Aviation Safety Agency ("*Basic Regulation*")
- *Regulation (EU) 2015/340* laying down technical requirements and administrative procedures relating to air traffic controllers' licences and certificates⁷

³ Attention: Most of the requirements from *Regulation (EC) No. 482/2008* were either adopted unchanged or adapted with *ED Decision 2019/022/R* as AMC and GM to *Commission Implementing Regulation (EU) 2017/373* and must be taken into account by all service providers.

⁴ See the explanations in chapter 5.

⁵ Here: the BAF

⁶ Note: Under the old regulation based on *Commission Implementing Regulation (EU) No 1035/2011*, AFIS providers in Germany could be granted exemptions regarding the requirement of safety arguments for changes. In this respect, they were exempted from the obligation to prepare and, if necessary, submit safety documentations with regard to changes. However, the concept of exemptions is no longer provided for in *Commission Implementing Regulation (EU) 2017/373*.

⁷ *Regulation (EU) No 2015/340* laying down technical requirements and administrative procedures relating to air traffic controllers' licences and certificates requires in *point ATCO.D.085 b* that conversion training aimed at imparting knowledge and competence in view of a change in the operational environment shall be carried out by training organisations if the safety assessment of the change shows that such training is necessary.



1.1. List of points to be considered from Commission Implementing Regulation (EU) 2017/373

For assistance and orientation, the points from *Commission Implementing Regulation (EU) 2017/373* to be considered in the context of changes are listed here. To complete the picture, both Authority Requirements (starting with “ATM/ANS.AR”) and Organisation Requirements (starting with “ATM/ANS.OR” for general requirements for services providers and “ATS.OR” for specific requirements for Air Traffic Service providers) are listed. It should be noted that these requirements are supplemented by “Acceptable Means of Compliance”(AMC) as well as Guidance Material (GM), which must also be taken into account; the latter may refer to the text of the Regulation itself as well as to AMCs.

Authority Requirements:

ATM/ANS.AR.A.005	(c)	Certification, oversight and enforcement tasks
ATM/ANS.AR.B.015	(a)(8)	Record-keeping
ATM/ANS.AR.C.010	(a)	Oversight
ATM/ANS.AR.C.025	completely	Changes
ATM/ANS.AR.C.030	completely	Approval of change management procedures for functional systems
ATM/ANS.AR.C.035	completely	Decision to review a notified change to the functional system
ATM/ANS.AR.C.040	completely	Review of a notified change to the functional System

General Organisation Requirements:

ATM/ANS.OR.A.040	completely	Changes – general
ATM/ANS.OR.A.045	completely	Changes to a functional system
ATM/ANS.OR.B.005	(a)(4), (d)	Management system
ATM/ANS.OR.B.010	completely	Change management procedures



ATM/ANS.OR.C.005	completely	Safety support assessment and assurance of changes to the functional system
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Specific Requirements for Air Traffic Services provider:

ATS.OR.200	(3)(ii)	Safety management system
ATS.OR.205	completely	Safety assessment and assurance of changes to the functional system
ATS.OR.210	completely	Safety criteria



2. Changes – Basic Principles

According to *point ATM/ANS.OR.A.040 letter (a), Commission Implementing Regulation (EU) 2017/373* distinguishes between two types of changes that are to be considered differently⁸:

1. Changes to a functional system or changes affecting a functional system, hereinafter also referred to as a1-changes
2. Changes to the provision of service, to the management and/or safety management system of a service provider which do not affect a functional system⁹, hereinafter referred to as a2-changes

The main difference between the two types of changes is that a1-changes are always specifically linked to an ATM/ANS function or other functions of the Air Traffic Management network being fulfilled, which is not the case for a2-changes described under bullet point 2. Changes to the provision of service are a special case as they are usually accompanied by changes to a functional system (e.g. because operational procedures have to be adapted as well). *ATM/ANS.OR.A.040 letter (a) paragraph (2)* is therefore to be interpreted as meaning that only those changes to the provision of service should be covered which explicitly have no impact on a functional system. Changes to the provision of service to which this does not apply should by implication be treated as or in conjunction with changes to a functional system.

On principle, any of the above changes must be reported to the BAF. The procedures and deadlines to be adhered to in the process are described in detail in the following chapters.

A1-changes mentioned under bullet point 1 are described in more detail in Chapter 3.

According to *AMC1 ATM/ANS.OR.A.040(b)*, each a2-change requires on principle notification¹⁰ to and approval by the BAF prior to its implementation in order to enable the BAF to determine continued compliance with the requirements of the *Basic Regulation* and its implementing regulations and to make any necessary changes/supplements to the certificate. To this end, the service provider must ensure by means of appropriate provisions that a change is not implemented before approval by the BAF. These provisions must also comply with the requirements of this Directive, in particular with the prescribed notification forms.

However, *point ATM/ANS.AR.C.025 letter (c)* in conjunction with *AMC2 ATM/ANS.ORS.A.040(b)* facilitates matters for service providers and enables them to make certain changes to their management system or, where appropriate, their safety management system without prior approval in accordance with *point ATM/ANS.ORS.A.040 letter (b)*. To this end, the service provider shall establish a procedure which defines the scope of such changes and explains how these changes are

⁸ Note: In the context of *Commission Implementing Regulation (EU) 2017/373*, the terms “change” and “modification” are used synonymously.

⁹ Note: This is a completely new requirement for service providers which was not yet included in *Commission Implementing Regulation (EU) No 1034/2011*.

¹⁰ Form C1.1 “Notification of a planned change” must be used for this purpose.



announced and managed. This procedure shall be submitted to and approved by the BAF. After approval by the BAF, the changes described in the procedure can be implemented without explicit approval related to the occasion but prior notification of the change is always required. Conversely, all changes not covered by the described and approved procedure must be notified individually to the BAF and can only be implemented after explicit approval by the BAF.

In accordance with *AMC1 ATM/ANS.AR.C.025(b)*, the BAF sends an acknowledgement of receipt of the notification via the SOP/ZERTIFIZIERUNG Section after 10 working days¹¹ at the latest. In case an individual approval of the change by the BAF is required, the service provider will – once all relevant supporting documents have been submitted – receive a formal response to the notified a2-change within 30 working days at the latest. This response will either include the approval - possibly with conditions - or the rejection together with a justification. The BAF can also make use of the possibility to verify the requirements to be complied with in the course of an audit. The above-mentioned processing times of the BAF inevitably result in deadlines to be met for the notification of a2-changes. Further details on this are given in chapter 6.1.

The AMC for *point ATM/ANS.OR.A.040* also set out further specific provisions on how certain changes are to be handled. For example, *AMC1 ATM/ANS.OR.A.040* specifies that changes of ownership or location are necessarily covered by *ATM/ANS.OR.A.040 letter (a) paragraph (2)* and, in addition, always require an explicit approval by the BAF for the specific occasion. *AMC2 ATM/ANS.OR.A.040(b) letter (b)* explicitly requires that changes to designated holders of positions for safety & security, quality, finance and human resources functions must be reported to the BAF.

Note: Unless explicitly stated otherwise in the following chapters, the term "change" hereafter always refers to a change to a functional system as defined in chapter 3. Where a2 changes are dealt with, this will be explicitly highlighted.

3. Changes to Functional Systems

What follows below is a more detailed description of changes to functional systems or changes that affect a functional system, so a1-changes, together with the associated requirements. For the sake of simplicity, only "changes of functional systems" or "changes to functional systems" or "changes" for short will be used hereafter, although the interpretation given above is always meant implicitly. The fundamental demands on changes to functional systems are governed by *Commission Implementing Regulation (EU) 2017/373 point ATM/ANS.OR.A.045*.

A service provider must examine each planned change with a view to determining whether it involves a change to a functional system. In the process, the functional system in question must be looked at from a holistic perspective and it must be realized that such a system is made up of

- personnel / human resources,

¹¹ According to *CIR (EU) 2017/373*: working day = day on which regular work is or would actually be carried out in the BAF, i.e. all days excluding Sat/Sun & public holidays.



- equipment, including hardware and software (and in a broader sense also infrastructure and information/data) and
- procedures (and in a broader sense also processes and regulations).

It has to be verified for every change whether there is any "change" at all within the meaning of *Commission Implementing Regulation (EU) 2017/373*. According to *GM3 ATM/ANS.OR.C.005(a)(1) letter (a) paragraph 1*, the term "change"¹² means either:

- The introduction of a new functional system or subsystem or
- the modification of an existing functional system including all components or a change affecting the functional system or
- a change to the provision of service (but see note on this in chapter 2 on page 22) or
- a change to the context or framework conditions in which the functional system is embedded
- a change to the context or framework conditions in which the service is provided.

This includes among other things:

- The introduction or upgrade of technical systems and components,
- the introduction or modification of procedures,
- the introduction of new tasks/activities together with the associated initial qualification or changes in the qualification of the personnel employed.

It is irrelevant whether a change is actively initiated by a service provider independently of third parties or is merely a reaction to a change in other service providers whose services are used in one's own service provision ("reactive change") or whether it is the necessary consequence of or reaction to changes in the context or framework conditions in which the functional system is embedded or in which the service is provided. This can be triggered by other service providers as well as by bodies regulated by the *Basic Regulation* and unregulated bodies.

To help determine whether a planned change constitutes a change to the functional system within the meaning of *CIR (EU) 2017/373*, the question should first be asked whether the change concerns a service as listed in chapter 1. In other words, is the change linked at all to one or more services subject to certification as listed above? If the question is answered in the negative, it can generally be assumed that the change is not subject to the requirements of *Commission*

¹² Note: In the context of *Commission Implementing Regulation (EU) 2017/373*, the terms "change" and "modification" are used synonymously.



Implementing Regulation (EU) 2017/373 and this Directive. However, it should at least be examined whether the change does undoubtedly not affect services subject to certification^{13, 14}.

The test procedure to be applied for planned projects is outlined in **Fehler! Verweisquelle konnte nicht gefunden werden.** A distinction must therefore be made between three different types of projects:

- Multi-actor changes to a functional system,
- Single-actor changes to a functional system, and
- Projects which do not constitute changes to a functional system.

As shown in Figure 1, single-actor changes can be handled autonomously. This means that coordination with other service providers and/or aviation undertakings is usually not necessary, since such a change relates solely to the internal affairs of the service provider and is not visible to the outside world. The only exceptions are those changes where different competent supervisory or regulatory authorities act as aviation undertakings (Further details are provided in chapter 3.1). This is the case, for example, with cross-border changes, where - similar to multi-actor changes - coordination with regard to the planned change is expected between the service provider who provides his service(s) across a national border and the service provider who does not provide the service(s) in an area allocated to his responsibility himself but uses the service(s) of the first-mentioned service provider in accordance with Article 10 of Regulation (EC) No 550/2004.

However, according to ATM/ANS.OR.A.045 letter (a) paragraph (3) and letter (e) paragraphs (1) and (2), multi-actor changes always require coordination with those service providers and/or aviation undertakings involved in the change or information to those service providers and/or aviation undertakings affected by the change.

¹³ An example is the provision of apron control services by an Air Traffic Services provider. Apron control is not part of ATM/ANS and therefore not subject to the requirements of *Commission Implementing Regulation (EU) 2017/373*. However, if a TWR-ATS provider also provides apron control, it shall be ensured that changes in this area do not affect the provision of TWR-ATS.

¹⁴ Note: *Commission Implementing Regulation (EU) No 1034/2011* still distinguished between safety-relevant and non-safety-relevant changes, although the cited regulation only focused on the first set. In *Commission Implementing Regulation (EU) 2017/373*, this distinction is no longer maintained in accordance with ATM/ANS.OR.A.045 letter (a) and all changes to the functional system must be notified to the competent authority and substantiated with arguments (more details are given in the following chapters).

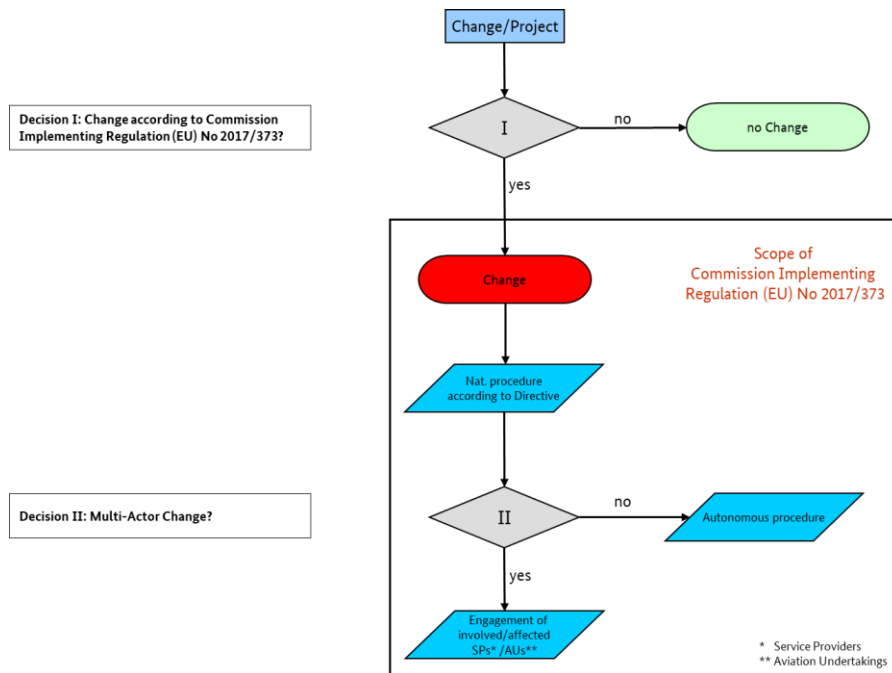


Figure 1: Deciding on the type of a planned change

3.1. Changes not limited to the territory of the Federal Republic of Germany

A special case of changes are those changes which are not limited to the territory of the Federal Republic of Germany. These can be both single-actor changes (in the case of cross-border service provision/service delegations) and multi-actor changes. They require special treatment due to additional obligations that have been agreed upon between the affected states, air navigation services organisations and supervisory/regulatory authorities. In order to enable the BAF to fulfil its obligations to the respective foreign supervisory authorities in accordance with *point ATM/ANS.AR. A.005 letter (c)*¹⁵, at least an English translation of the project description shall therefore be provided for changes that are not restricted to the territory of the Federal Republic of Germany.

Among the changes which are not limited to the territory of the Federal Republic of Germany, changes in the FABEC area also play a special role, as they are - in addition to this Directive - also

¹⁵ In the FABEC, further details are laid down in the “Manual for the common activities of the FABEC NSAs”. The oversight of cross-border changes with non-FABEC partners, on the other hand, is regulated in bilateral NSA-NSA agreements between the BAF and the supervisory authorities of neighbouring countries.



subject to the provisions of the “Manual for the common activities of the FABEC NSAs – Procedure 04”¹⁶, which implements the requirements of *point ATM/ANS.ARA.005 letter (c)*. **This Directive makes compliance with the provisions of Procedure 04 mandatory for all service providers in the passages concerning them.**

3.2. Assistance in deciding on the type of a planned change

The following subchapters are intended to assist service providers in deciding on the type of a planned change. Attention shall specifically be paid to whether catalogues are exhaustive, or if solely examples serving as general guidance are being given.

3.2.1. Criteria for changes within the meaning of Commission Implementing Regulation (EU) No 2017/373

The following criteria, which are not to be considered as exhaustive, can serve as reference points for classifying a planned change as a change within the meaning of *Commission Implementing Regulation (EU) 2017/373*:

- The planned change will extend or reduce services or introduce, modify or discontinue products.
- The planned change will introduce or modify technical systems or components (hardware or software).
- The planned change will change the system configuration, except for changes during maintenance, repair and alternative operations, which are already part of the accepted functional scope.
- The planned change will change operational procedures and/or regulations/work instructions.
- The planned change will introduce or modify Air Traffic Services procedures.
- The planned change will change the roles and responsibilities of operating personnel.
- As a result of the implementation of the change there will be new, modified or eliminated training and/or qualification requirements (e.g. new ratings/rating endorsements/unit endorsements).
- The planned change will lead to changes in working hours and/or shift patterns of key personnel that may affect the safe provision of the service(s).

¹⁶ See also chapters 6.1 and 8.



- The planned change will change the way in which components of the functional system are used.
- The implementation of the planned change will require a change to the facts or procedures described in official aviation publications.
- The planned change will bring about deviations from ICAO standards outside the current, directly applicable European regulatory framework.
- The planned change will require deviating from aviation standards or introducing new ones.
- The planned change will have an effect on the service provision by other service providers or on aviation undertakings.
- The planned change is necessary due to changing circumstances in the operational context/environment under the control responsibility of the provider and may affect the service; this includes, for example, the provision of service under new conditions.
- The planned change is necessary due to changing circumstances in the local physical (operational) environment of the functional system.

If one or several of the criteria listed above as examples apply, this is indicative of a change.

3.2.2. Examples of changes within the meaning of Commission Implementing Regulation (EU) No 2017/373

What is given below as guidelines are specific examples of planned changes¹⁷ which are currently considered to be changes:

- New/changed procedures that lead to a change in LoAs (Letters of Agreement)
- Changes to VFR procedures in controlled airspace
- Generally: shifting of FIR/UIR boundaries
- Change in a training plan with regard to:
 - discontinuation of capabilities and qualification requirements
 - change in the standard of training (quality)
- Changes to the extent of areas of responsibility and changes to the unit endorsement structure of operating positions (for all services!), e.g.
 - pooling of unit endorsements for operating positions

¹⁷ The following list does not claim to be exhaustive and merely lists some sample projects.



- closure or amalgamation of control/information centres
- reorganization of sectors
- Reduction/cutting-back of operating positions, e.g.
 - replacement/cutback of personnel through automation
 - axing of aerodrome assistant posts and assignment of tasks to the aerodrome controllers
- Change in phraseology
- A procedure (safety-) assessed explicitly for a specific Air Navigation Services unit/operational centre or hardware in use is to be applied/used at a different location

3.2.3. Exhaustive catalogue of planned changes that are currently not regarded as changes within the meaning of Commission Implementing Regulation (EU) No 2017/373

The processes stated below are currently not regarded as changes within the meaning of Commission *Implementing Regulation (EU) No 2017/373*¹⁸:

- Planned changes that have no impact on a functional system
- Reversion/return to a previous initial state that has already been assessed
- All processes/steps/elements already intended and completely documented in the desired state
- Adaptational and configurational changes specified and co-assessed in the desired state
- Maintenance and servicing measures fully described within the scope of in-house provisions, provided these are already supported by appropriate arguments or no longer changed after entry into force of the rules and regulations applicable at the time
- Exchange of elements/parts/devices/assemblies¹⁹ compatible with the desired state, as well as approved and considered in a safety (support) assessment with regard to their use and impacts, for the functional system in question

¹⁸ Service providers can contact the BAF regarding a justified request for an extension of this catalogue. It will then be jointly evaluated whether the conditions for recognition are met. If this is the case, the decision will be communicated to all service providers in an appropriate form.

¹⁹ This covers replacements with backup/spare devices or assemblies, e.g. for calibration/maintenance purposes or in case of faults. Note: If a device or an assembly of the same or another manufacturer with changed functionality, integrity or availability is used in the course of an exchange, this is a change of the functional system, unless already considered in an existing safety (support) assessment!



- Measures that are part of day-to-day operations and are fully described in in-house documents (e.g. operation manuals, operational orders, etc.) (e.g. changes of runway operating direction, merging of sectors, ...)

Attention: If a deviation of the actual state from the specified desired state is detected in an operating system and the desired state is then to be restored, this is usually considered as a change. This typically includes software bugfixes.

4. Basic Rules

The following functional e-mail address should be used for all electronic correspondence with the BAF on the subject of “changes to functional systems”²⁰:

change@baf.bund.de

Where reference is made in this Directive to “the BAF”, the Section “NoC/Risikomanagement (“CHANGE”)” of the SOP Division is meant, available at the above-mentioned functional email address.

For changes under *point ATM/ANS.OR.A.040 letter (a) paragraph (2) (a2-changes)*, the following functional e-mail address shall be included in the change notification in addition to change@baf.bund.de:

zertifizierung@baf.bund.de

5. Procedures for Managing Changes to Functional Systems

According to *AMC1 ATM/ANS.OR.B.010(a) letter (f)*, every service provider must on principle establish a process or procedure to ensure that all changes to the functional system are correctly identified and handled as such. Changes can be actively initiated with a specific intention, but they can also be a necessary response to changing internal or external conditions. To this end, *point ATM/ANS.OR.B.005 letter (a) paragraph (4)* specifies in general - in the context of the provisions for management systems of service providers - that service providers shall establish a procedure to identify changes made within the organisation of the service provider and in its operational environment which could affect established processes, procedures and services and, if necessary, to adapt the management system and/or the functional system to reflect these changes. In this context, the term “change drivers” can be used to refer to triggers of changes. Changes may be initiated or required for various reasons which are not necessarily under the control of the service provider itself. For example, support services of other service providers used by the service provider or external framework conditions in which one's own service is embedded may change, which ultimately requires a reaction in the form of changing the functional system oneself. Just as well, such triggers of a change can also exist within the service provider in question.

²⁰ Unless other procedures have been agreed on bilaterally.



What is helpful when using support services of other service providers is the fact that *Commission Implementing Regulation (EU) 2017/373* requires in *point ATM/ANS.OR.A.045 letter (a) paragraph (3)* that information on changes to functional systems be communicated to affected users, irrespective of whether they are service providers or aviation undertakings. In this respect, every service provider should establish a process to ensure adequate responses to such information with regard to the need to adapt one's own functional system.

Point ATM/ANS.OR.B.005 letter (d) in conjunction with *AMC1 ATM/ANS.OR.B.005(d)* also requires appropriate monitoring of the behaviour of the functional system. In the event of underperformance, the causes of this underperformance shall be identified and eliminated or its effects mitigated. This may require either changes to the functional system or improvements to the arguments for changes made in the past.

In addition, *point ATS.OR.200 paragraph (3)(ii)* specifically addresses providers of Air Traffic Services, which, in the context of ensuring safety as a component of the safety management system, requires such service providers to establish a process for identifying changes that may affect the level of safety risks to the service and for identifying and managing the safety risks that may result from such changes.

Point ATM/ANS.OR.B.010 further specifies that a service provider shall establish, in accordance with *points ATM/ANS.OR.A.045, ATM/ANS.OR.C.005, ATS.OR.205* and, where appropriate, *ATS.OR.210*, including any associated AMC, procedures for the management, assessment and, where necessary, mitigation of the consequences of changes to its functional systems, covering the full life cycle of changes. Since, as already mentioned in chapter 1, service providers under *point ATM/ANS.AR.C.030* in conjunction with *point ATM/ANS.OR.B.010 letter (b)* of *Commission Implementing Regulation (EU) 2017/373* may only use the procedures approved by their competent authority to manage changes to functional systems, the following provision is made to meet this requirement:

Before using procedures for the management, assessment and, where necessary, mitigation of the consequences of changes to their functional systems for the first time, every service provider should submit, of their own accord, such procedures to the BAF for review and approval, both at the time of initial development and when updates are made²¹.

For this purpose, the notification form C1.1, which is mandatory under this Directive, shall be used, the first page of which shall include information on changes to the management system of a service provider. If the procedures for managing changes are described in integral documents (e.g. in a safety management manual), the BAF will limit an approval for use only to those sections that are relevant to changes as the remaining sections are not necessarily subject to approval.

²¹ Note: As a rule, the BAF will generally not actively seek or request updates of the relevant documents from an air navigation services provider but will always assume that it has the currently valid documents that have been submitted to it for approval after updates by the service provider.



The above procedures shall include, as appropriate, associated relevant organisational provisions, documented procedures, process descriptions, manuals, guidelines, work instructions, templates, forms and tools used to identify, manage and notify changes to functional systems and to prepare and submit safety cases and safety support cases. This shall include procedures/methods for conducting and documenting safety assessments and safety support assessments used to assess a specific change by the service provider. During a review, the BAF will evaluate the argument presented for a notified change according to *point ATM/ANS.AR.C.040* with regard to the implementation of the requirements from *points ATM/ANS.OR.C.005 letter (a) paragraph (2)* or *ATS.OR.205 letter (a) paragraph (2)* on the basis of the specific application of the above procedures/methods. It should be noted that *ED Decision 2019/022/R* has added AMC and GM to *points ATM/ANS.OR.C.005* and *ATS.OR.205*, which makes it necessary to take into account specific demands on software or changes to software within the framework of the change management procedures. Helpful further guidance on what is generally included in the procedures for managing changes and which aspects should be covered by the procedures is provided by *GM1 ATM/ANS.OR.B.010(a)*.

In addition, *AMC2 ATM/ANS.OR.B.010(a)* specifies that service providers must also keep a register or overview of all changes to functional systems, including associated documents, as part of the administrative procedures described above. This directory shall contain at least the following:

- the status of the implementation of the change, i.e. planned, under review, under implementation, implemented, or cancelled,
- the actual notification that has been or will be submitted to the supervisory authority, or the different versions of the notification, if updated in the meantime,
- (a link to) the location of the actual record, including a reference to all information passed to the competent authority in accordance with *point ATM/ANS.OR.A.045 letter (a) paragraph (2)*,

and, in case of a review by the supervisory authority:

- the review decision from the competent authority; and
- a link to records of the change approval by the competent authority.

According to *AMC1 ATM/ANS.OR.B.010(a)*, the service provider has to maintain a compliance matrix which proves that all relevant regulatory requirements from *Commission Implementing Regulation (EU) 2017/373* are formally fulfilled or covered by the entirety of all procedures for managing changes to functional systems. The compliance matrix must meet the following requirements:

1. It shall demonstrate which part of a procedure addresses which part of the Regulation (i.e. the requirement of the implementing rule); and
2. it must provide the rationale explaining how the procedures demonstrate compliance with the Regulation.



A possible example of such a compliance matrix is given in *GM1 to AMC1 ATM/ANS.OR.B.010(a)*. **The compliance matrix shall be provided in an updated form with each application for approval of a new or modified change management procedures.** In this context, particular attention shall be paid to a clear definition of roles and responsibilities in the change management process and the respective procedures. It must also be clearly stated that no procedures will be used to manage changes prior to their approval by the BAF, nor will a change that has not yet been notified to the BAF or that is selected for review be implemented prior to approval by the BAF. Exceptions to this rule shall be permitted only where urgent and unforeseen circumstances require immediate action, as otherwise immediate danger would be imminent. For further details regarding demands on the entirety of the change management procedures, see *point ATM/ANS.AR.C.030* and *ATM/ANS.OR.B.010 letter (a)* and the associated AMC and GM.

The BAF will draw on the compliance matrix as a central instrument in its examination and decision for approval of the submitted change management procedures. If an exceptional deviation from approved change management procedures is to be made for a specific change, this must also be requested from the BAF in accordance with *point ATM/ANS.AR.C.030* in conjunction with *point ATM/ANS.OR.B.010 letter (c)* with an explanation of the deviation and its justification; this must be approved by the BAF before it is used by the service provider.

The BAF is required by *AMC1 ATM/ANS.AR.B.015(a)(8)* to maintain records of the above procedures for managing changes to functional systems of all service providers, including their approval status. Any deviations and special regulations shall also be documented by the BAF.

6. Notification of Changes

6.1. Notification of planned changes to BAF

Commission Implementing Regulation (EU) 2017/373 requires in *point ATM/ANS.OR.A.045 letter (a) paragraph (1)* that a service provider who intends to change his functional system shall inform the competent authority of the change. As *point ATM/ANS.OR.A.040 letter (a) paragraph (2)* also requires a notification of changes that do not affect the functional system, it makes sense to communicate both types of changes through a common medium. This Directive therefore specifies that the notification of both types of changes should be made using form **C.1.1 "Notification of a planned change"**. This process is called "notification of a change" or, in short, "notification". The purpose of providing a notification form is to ensure equal treatment of all supervised service providers and to minimise the likelihood that the BAF will have to request missing information about the planned change from the service provider in accordance with *point ATM/ANS.OR.A.045 letter (a) paragraph (2)*. Ultimately, the primary objective of the notification is to enable the competent authority to make a proper assessment of the proposed change, to take a balanced decision for or against a review of the argument and to initiate any necessary coordination measures with other (supervisory) authorities.

In (i), *GM1 ATM/ANS.OR.A.045(a)* also provides for the possibility that routine or repetitive changes to the functional system can be notified in a simpler way. The BAF has not issued any binding provisions in this regard; instead, appropriate solutions must be suggested and justified



by the service provider. If consensus is reached with the BAF on the basis of bilateral agreements that routine or repetitive changes are subject to a simplified notification process, this shall be described by the service provider as part of his change management procedures to be approved by the BAF.

The above form C.1.1 for the notification of planned changes is available in electronic form, therefore notifications of planned changes should also be sent to the BAF in electronic form. The form has to be completed carefully and in German. If there is a change which is not limited to Germany, the description of the proposed change must at least also be provided in English. The information accompanying the notification must be complete, comprehensible and meaningful enough to enable the BAF to obtain a realistic picture of the planned change. If abbreviations are used and if it must be assumed that these abbreviations are not generally known, they must be explained. The form is accompanied by detailed "Instructions for the notification of a planned change" (document C.1.1a).

The completed electronic form is to be sent by email to the BAF, preferably as a machine-readable²² PDF file²³. The notification form shall be accompanied, if available, by a project plan or safety plan showing relevant milestones (workshops, simulation dates, etc.) for the change project. If such a plan is not available, pertinent information shall be provided in the appropriate field of the notification form. This important information enables the BAF to be involved at an early stage in the compliance demonstration process for a change within the framework of a review.

In order to enable the timely processing of a case by the BAF in compliance with all deadlines, even in the event of a review of the safety (support) case, a **notification of a change to the functional system** should be submitted at least **60 days**^{24, 25} before the planned implementation date of the change. Longer lead times may also be required for special types of changes. This applies, for example, to changes which contain deviations from ICAO requirements²⁶ or for which special publication dates prior to the actual implementation date must be taken into account. Any lead times/deadlines deviating from the rules mentioned above must be agreed individually between the service providers concerned and the BAF and recorded. In case of uncertainties regarding the lead time to be chosen for special changes, it is recommended to contact BAF/CHANGE in time to coordinate the modalities.

For a2-changes, the notification deadlines to be complied with result from the provisions regarding the processing times to be adhered to by the competent authority according to the

²² No scan or pdf-image

²³ Unless other procedures have been agreed on bilaterally.

²⁴ The 60-day period is made up of the processing times required to build an opinion on the notification (cf. chapter 6.2) and to review the safety case or safety support case (cf. chapter 8).

²⁵ But see the notes on routine changes on page 34.

²⁶ In the case of deviations from ICAO provisions, the BMVI must generally be involved by the BAF, which requires longer lead times that must be considered by the service provider planning the change



AMCs to point *ATM/ANS.AR.C.025*. Accordingly, a distinction must be made between a2-changes that require individual approval and a2-changes that only require a notification on the basis of a procedure approved by the BAF. For **a2-changes subject to approval** a notification deadline of at least **60 days**²⁷ before planned implementation applies according to *AMC1 ATM/ANS.AR.C.025(b)* – which is the same as for a1-changes. The documents and evidence requested for approval must be submitted at least **42 days**²⁸ before the planned implementation date of the change.

For **a2-changes not subject to approval**, the notification should be submitted **14 days**²⁹ before implementation at the latest. Reasoned requests for deviations from these deadlines must be addressed to BAF/ZERTIFIZIERUNG.

Attention: In case of a multi-actor change that is not limited to the territory of the Federal Republic of Germany, other lead times may apply, which must also be taken into account³⁰. These can be found in the national provisions for the service providers involved in the change. They shall be identified in the course of the necessary coordination among the service providers involved in the change according to *point ATM/ANS.OR.A.045* and shall be taken into account when preparing the required documentation!

It is important and also explicitly required by *point ATM/ANS.OR.A.045 letter (a) paragraph 3* that, in the case of multi-actor changes, the notifying service provider informs the other service providers and, if possible, aviation undertakings who may be affected by the intended change or coordinates the planning of the project with them, if necessary. In particular, this shall include those service providers and aviation undertakings whose service provision is or may be affected by the change/project. According to *GM1 ATM/ANS.OR.A.045(e)*, this is the case if

- a) the proposed change may alter the service delivered to other service providers and aviation undertakings as users of that service; or
- b) the proposed change may alter the operational context in which the services of other service providers and aviation undertakings are delivered or in which the aviation undertakings are operating.

For example, a change in the technical infrastructure (e.g. in the CNS area) must be examined for possible operational effects. To this end, the notifying service provider coordinates its activities with the air navigation services organisation responsible for Air Traffic Control in advance of the notification. The notification must take into account all technical and operational aspects.

²⁷ From *AMC1 ATM/ANS.AR.C.025(b) letter (a) paragraphs (1) and (2)* follows: 10 working days for processing and acknowledging receipt of the change notification + 30 working days for the processing the submitted, complete all the evidence supporting the proposed change = 40 working days \triangleq 56 (calendar) days \approx 60 (calendar) days including minimum buffer (e.g. for communication, public holidays, ...)

²⁸ 30 working \triangleq 42 (calendar) days

²⁹ The 14 (calendar) days result from *AMC1 ATM/ANS.AR.C.025(c) letter (b)*, which requires 10 working days \triangleq 14 (calendar) days (without consideration of public holidays) for processing and formal acknowledgment of receipt by the BAF

³⁰ Further information on multi-actor changes in the FABEC area can be found in the "Manual for the common activities of the FABEC NSAs - Procedure 04".



In addition, *point ATM/ANS.OR.A.045 letter (e)* requires that both the notifying service provider(s) and the other service providers affected by the change shall jointly determine the following:

1. The dependencies with each other and, where feasible, with the affected aviation undertakings;
2. the assumptions that relate to more than one service provider or aviation undertaking and
3. the risk mitigations that relate to more than one service provider or aviation undertaking.

These important points shall be taken into account when preparing the argument for the change and, in accordance with *point ATM/ANS.OR.A.045 letter (f)*, only the assumptions and risk mitigation measures agreed on and adapted with the other service providers and, where appropriate, the aviation undertakings shall be used in the argument.

6.2. Processing of the notification by BAF

Each notification is checked by the BAF for completeness and conformity with the regulations and provisions described here. As described above, a further distinction is made between changes to the functional system under *point ATM/ANS.OR.A.040 letter (a) paragraph (1)* and a2-changes under *point ATM/ANS.OR.A.040 letter (a) paragraph (2)*. The further processing of a2-changes takes place outside the CHANGE area within ZERTIFIZIERUNG in the SOP Division of the BAF, which will acknowledge the receipt of the notification in writing within 10 working days as described in Section 2. For changes to the functional system according to *point ATM/ANS.OR.A.040 letter (a) paragraph (1)*, the further procedure is shown below.

An opinion on the notification of a change to the functional system is communicated to the notifying service provider using form C.2.1 **”Stellungnahme zur Anmeldung einer geplanten Änderung”** (Opinion on the notification of a planned change). The opinion also includes the unique case number (file number), which will be used to identify the notified change from now on. This case number must be used in all subsequent documents.

Based on the requirements of *point ATM/ANS.AR.C.035*, the BAF examines whether a review³¹ of the argument for a notified change is sought and informs the notifying service provider of its decision. In this context, *point ATM/ANS.AR.C.035 letter (b)* specifies that a review should be carried out at least whenever the combination of the likelihood of the argument being complex or unfamiliar to the service provider and the severity of the possible consequences of the change is significant. In addition, the BAF may use other concrete, viable and documented decision criteria.

³¹ See chapter 8.



In the event that the safety (support) case is reviewed by the BAF and a change is thus required to be approved by the BAF, implementation by the service provider may not take place before approval is granted.

The opinion on the notification will normally be made available to the notifying service provider no later than **30 calendar days** after receipt of the notification.

6.3. Provisions governing the implementation of the change project

A notified change may be implemented by the service provider in accordance with *point ATM/ANS.OR.A.045 letter (c)* if all necessary steps have been taken in accordance with the change management procedures approved by the BAF as described in chapter 5. This includes in particular the completion of the argument underpinning the change (see chapter 7). If the BAF has announced a review of the argument for the change or is in the process of carrying out such a review, the change may not be implemented until the BAF has given its approval, possibly subject to conditions.

If the arguments for certain parts/aspects of the proposed change can be separated from each other, *point ATM/ANS.OR.A.045 letter (c)* also allows partial implementations of the change. This applies to those parts/aspects of the change for which the change management procedures described above have already been fully carried out. According to *point ATM/ANS.OR.A.045 letter (d)*, this also applies if the argument for a change is reviewed by the BAF. If it is possible for the BAF to review the argument in relation to parts/aspects of the change in isolation, approval may also be granted for part of the change, even if full approval of the change cannot yet be granted for certain reasons. In this way, however, the service provider can already implement part of the planned change, if desired.

6.4. Amendments to changes already notified

Point ATM/ANS.OR.A.045 letter (b) requires a service provider to inform the competent authority, after notification of a change has already been made, if information relating to the change is substantially changed. The same obligation applies as regards informing affected service providers and aviation undertakings. This may concern both the content and/or scope of the change and the assessment of the change in terms of the argument to be provided, for example by a changed risk level.

Whenever a change notification already submitted is updated, the amended or supplemented information shall be highlighted by the service provider in an appropriate form (e.g. in colour). On the basis of the new/amended information, the BAF may also make a different decision to review, both for and against the requirement of a review, regardless of the previous decision to review or not. Furthermore, according to *point ATM/ANS.OR.A.045 letter (a) paragraph (2)*, it is always possible for the BAF to request further information on the planned change at any time. If, however, the notifying service provider fills in the notification form C.1.1 carefully, this should only be necessary in exceptional cases.



6.4.1. Postponement of dates

Postponements of planned implementation dates of projects already notified must be reported to the BAF by e-mail. For this purpose, it is sufficient to simply state the name of the project together with the file number assigned by the BAF and the new implementation date. On principle, there will be no official comment or feedback on this from the BAF.

6.4.2. Withdrawal of change projects

If a change project that has already been notified should not be implemented, the BAF shall be informed of this by email in accordance with *AMC1 ATM/ANS.OR.A.045(b)* with a brief justification. The affected service providers and aviation undertakings shall also be informed accordingly.

6.5. Ad-hoc procedure for changes required at short notice

If a service provider has to assume that certain changes will have to be implemented at short notice and without the standard planning phases and deadlines normally prescribed, the service provider must describe a procedure for this purpose which will become part of the change management procedures to be approved by the BAF. This may be necessary, for example, for changes which have to be implemented at short notice to maintain or restore safe operations or services according to specifications, e.g. as a result of a safety-relevant event or as an ad-hoc reaction to errors which have occurred. In any case, the service provider must clearly describe the types of changes for which this ad-hoc procedure can be used, the reporting channels to the BAF and how and in what form the argument for such a short-term change is prepared in terms of the demands made on it. A justification for the application of the ad-hoc procedure in the specific case of application must on principle be provided or submitted subsequently.

Note: The top priority in this case is the implementation of necessary steps by the service provider to ensure the (safe) provision of services. The aforementioned interaction with the BAF is therefore explicitly not to be regarded as a precondition or prerequisite for initiating these steps.

7. Safety (Support) Assessment and Assurance for Changes to a Functional System

According to *Commission Implementing Regulation (EU) 2017/373 point ATM/ANS.OR.C.005 letter (a)* or *ATS.OR.205 letter (a)*, a service provider shall perform a safety assessment or safety support case of the full scope of the change for each change to its functional system. The nature and



form of these assessments shall be based on the above two points, making a clear distinction between Air Traffic Services providers³² and other service providers. The former argue in the form of a safety argument based on a safety assessment with regard to the safe provision of their service, the latter in the form of a safety support argument based on a safety support assessment with regard to the provision of the service as specified.

However, *GM2 ATM/ANS.ORS.C.005(a)(1) letter (c)* allows, by way of derogation from the basic rule, service providers providing both Air Traffic Services and other services subject to regulation by *Commission Implementing Regulation (EU) 2017/373* to carry out a safety assessment and to prepare a safety argument instead of a safety support argument for a change not attributable to Air Traffic Services, provided that the change relates solely to the internal affairs of the service provider and does not cross the organisation's boundary. An essential prerequisite for such a procedure is a clear description of the ATS functional system and a differentiation from the non-ATS functional system (regarding all other certified services offered). If this is not possible in individual cases, *GM2 ATM/ANS.ORS.C.005(a)(1) letter (c)* cannot be used either.

Both types of arguments are described in more detail in the following sections. For the sake of simplicity in language use, the documented arguments that compile and structure the results of the safety (support) assessment and assurance are also referred to below simply as safety case/documentation and safety support case.

Where a change affects other service providers, several changes may need to be made to functional systems at these service providers. In this case, *AMC1 ATM/ANS.ORA.045(e)* requires coordination of these changes and the creation of an overarching safety (support) argument (OASA), if applicable.

Safety (support) cases must on principle be written by the notifying service provider himself and in German. With the consent of the BAF, this rule may be deviated from in exceptional cases in favour of using the English language if there are compelling reasons for doing so. Such reasons may be, for example, cooperation with foreign ANSPs in preparing the arguments or the need to exchange arguments in case of multi-actor changes. If the service provider enlists the help of third parties in preparing the argument and its documentation, the full responsibility for ensuring that the argument meets all regulatory requirements remains with the service provider. This applies in particular to the service provider's full compliance with the service provider's change management procedures approved by the BAF. In addition, the service provider remains the official contact for the BAF regarding the change, irrespective of any delegation of tasks to third parties. In exceptional cases, other or further legitimate contact persons can be designated for a defined change after prior consultation between the service provider and the BAF. Details are not regulated in general terms but on an ad-hoc basis.

If the opinion (see chapter 6.2) required the submission of the argument - in the form of one (or more, if applicable) safety (support) case(s), it shall be submitted in its final form to the BAF at

³² Providers of AFIS may be subject to a reduced set of regulatory requirements under certain circumstances. This may result in simplifications with respect to the demonstration of compliance of changes.



least 30 calendar days³³ before the planned implementation date of the change. However, it is recommended that complex arguments where an increased review and possibly coordination/interaction effort is to be expected be sent well before this date in order not to jeopardise a planned implementation date.

Each safety documentation or safety support case should contain a compliance matrix, in which evidence of compliance with all relevant requirements including associated AMC (or AltMoC, as appropriate) from *points ATM/ANS.OR.C.005* or *ATS.OR.205* and *ATS.OR.210* is provided in tabular form by reference to the relevant chapters/pages of the safety (support) documentation. This may be waived if binding templates are prepared for safety (support) documentations, if these templates become part of the change management procedures to be approved by the BAF and have been approved by the BAF and if it can be shown that the structure of the templates ensures that all demands on the documented argument are met, provided that the template is properly used and filled in the specific application.

7.1. Safety support assessment and assurance of changes to the functional system

Point ATM/ANS.OR.C.005 specifies the following for service providers other than Air Traffic Services providers:

- a) For any change notified in accordance with point ATM/ANS.OR.A.045 letter (a) paragraph (1), the service provider shall
 1. ensure that a safety support assessment is carried out covering the scope of the change which is:
 - i) The equipment, procedural and human elements being changed,
 - ii) interfaces and interactions between the elements being changed and the remainder of the functional system,
 - iii) interfaces and interactions between the elements being changed and the context in which it is intended to operate,
 - iv) the life cycle of the change from definition to operations including transition into service,
 - v) planned degraded modes,
 2. provide assurance, with sufficient confidence, via a complete, documented and valid argument that the service will behave and will continue to behave only as specified in the specified context.

³³ However, in case of multi-state multi-actor changes, it is recommended to submit it early, as in individual cases the coordination between the supervisory authorities may result in an increased processing workload.



- b) The service provider shall ensure that the safety support assessment referred to in *letter (a)* comprises:
1. The verification that
 - i) the assessment corresponds to the scope of the change as defined in *letter (a) paragraph (1)*,
 - ii) the service behaves only as specified in the specified context
 - iii) the way the service behaves complies with and does not contradict any applicable requirements of this Regulation placed on the services provided by the changed functional system, and
 2. specification of the monitoring criteria necessary to demonstrate that the service delivered by the changed functional system will continue to behave only as specified in the specified context.

With regard to the life cycle of the change referred to in *letter (a) paragraph (1) (iv)*, it should be explicitly noted that it ends when the change is put into service. The safety support assessment, however, extends beyond the date of actual entry into service of the change and shall thus include the subsequent operations after entry into service. For this period until a change is decommissioned, monitoring criteria shall be identified and documented as part of the safety support case referred to in *letter (b) paragraph (2)*. *AMC1 ATM/ANS.ORS.C.005(b)(2)* further states that the purpose of the monitoring criteria is to demonstrate that the safety support case remains valid during the operation of the changed functional system, i.e. that the service continues to be provided according to the specification, as amended where appropriate. The monitoring criteria shall hence show that

- the assumptions made in the safety support case remain valid after implementation of the change and
- the service behaves or is provided as specified, provided that the monitored properties are within the limits defined by the monitoring criteria.

As regards *letter (a) paragraph (2)*, *AMC2 ATM/ANS.OR.C.005(a)(2)* makes further detailed demands on the required argument. This argument must be regarded as complete when it shows that

- a) the safety support assessment of *ATM/ANS.OR.C.005(b)* has produced a service specification and context specification where
1. the service has been defined in terms of functionality, performance and the form of the interfaces;
 2. the specification of context correctly and completely records the conditions under which the specification of the service is true;
 3. the interaction of components, under failure conditions or failures in services delivered to the components, have been assessed for their impact on the service and, where necessary, degraded modes of service have been defined; and



4. the specification encompasses the interaction with the environment;
- b) safety support requirements have been placed on the elements changed and on those elements affected by the change;
- c) the behaviour necessitated by the safety support requirements is the complete behaviour expressed by the service specification;
- d) all safety support requirements have been traced from the service specification to the level of the architecture at which they have been satisfied;
- e) each component satisfies its safety support requirements; and
- f) the evidence is derived from known versions of the components and the architecture and known sets of products, data and descriptions that have been used in the production or verification of those versions.

Further details and detailed requirements to be considered when conducting the safety support assessment and preparing the documentation can be found in the comprehensive AMC and GM on point ATM/ANS.OR.C.005.

7.2. Safety assessment and assurance of changes to the functional system

For Air Traffic Services providers, point *ATS.OR.205* specifies the following:

- a) For any change notified in accordance with point *ATM/ANS.OR.A.045 letter (a) paragraph (1)*, the Air Traffic Services provider shall
 1. ensure that a safety assessment is carried out covering the scope of the change, which is:
 - i) The equipment, procedural and human elements being changed,
 - ii) interfaces and interactions between the elements being changed and the remainder of the functional system,
 - iii) interfaces and interactions between the elements being changed and the context in which it is intended to operate,
 - iv) the life cycle of the change from definition to operations including transition into service,
 - v) planned degraded modes of operation of the functional system, and
 2. provide assurance, with sufficient confidence, via a complete, documented and valid argument that the safety criteria identified via the application of point *ATS.OR.210* are valid, will be satisfied and will remain satisfied.
- b) An Air Traffic Services provider shall ensure that the safety assessment referred to in *letter (a)* comprises:
 1. The identification of hazards,



2. the determination and justification of the safety criteria applicable to the change in accordance with point ATS.OR.210,
3. the risk analysis of the effects related to the change,
4. the risk evaluation and, if required, risk mitigation for the change such that it can meet the applicable safety criteria,
5. the verification that:
 - i) the assessment corresponds to the scope of the change as defined in *letter (a) paragraph (1)*,
 - ii) the change meets the safety criteria,
6. the specification of the monitoring criteria necessary to demonstrate that the service delivered by the changed functional system will continue to meet the safety criteria.

With regard to the life cycle of the change referred to in *letter (a) paragraph (1) (iv)*, it should be explicitly noted that it ends when the change is put into service. The safety assessment, however, extends beyond the date of actual entry into service of the change and shall thus include the subsequent operations after entry into service. For this period until a change is decommissioned, monitoring criteria shall be identified and documented as part of the safety case referred to in *letter (b) paragraph (6)*. *AMC1 ATS.OR.205(b)(6)* further states that the purpose of the monitoring criteria is to demonstrate that

- the assumptions made in the argument remain valid,
- critical proxies remain as predicted in the safety case and are no more uncertain, and
- other properties that may be affected by the change remain within the bounds predicted by the safety case.

As regards *letter (a) paragraph (2)*, *AMC2 ATS.OR.205(a)(2)* makes further detailed demands on the required argument. This argument shall be considered complete when it shows, as appropriate, that

- a) the safety assessment in *ATS.OR.205(b)* has produced a sufficient set of non-contradictory valid safety criteria,
- b) safety requirements have been placed on the elements changed and on those elements affected by the change,
- c) the safety requirements as implemented meet the safety criteria,
- d) all safety requirements have been traced from the safety criteria to the level of the architecture at which they have been satisfied,
- e) each component satisfies its safety requirements,
- f) each component operates as intended, without adversely affecting the safety, and



- g) the evidence is derived from known versions of the components and the architecture and known sets of products, data and descriptions that have been used in the production or verification of those versions.

7.2.1. Demands with regard to safety criteria

Point *ATS.OR.210* contains the demands on safety criteria to be met, which are to be specified within the framework of a safety assessment as described in chapter 7.2:

- a) An Air Traffic Services provider shall determine the safety acceptability of a change to a functional system, based on the analysis of the risks posed by the introduction of the change, differentiated on basis of types of operations and stakeholder classes, as appropriate.
- b) The safety acceptability of a change shall be assessed by using specific and verifiable safety criteria, where each criterion is expressed in terms of an explicit, quantitative level of safety risk or another measure that relates to safety risk. According to *AMC1 ATS.OR.210(a)*, these other forms may be:
 - 1. Proxies,
 - 2. recognised standards and/or codes of practice, or
 - 3. the safety performance of the existing functional system or a similar system elsewhere.
- c) An Air Traffic Services provider shall ensure that the safety criteria
 - 1. are justified for the specific change, taking into account the type of change,
 - 2. when fulfilled, predict that the functional system after the change will be as safe as it was before the change or the Air Traffic Services provider shall provide an argument justifying that
 - i) any temporary reduction in safety will be offset by future improvement in safety, or
 - ii) any permanent reduction in safety has other beneficial consequences,
 - 3. when taken collectively, ensure that the change does not create an unacceptable risk to the safety of the service,
 - 4. support the improvement of safety whenever reasonably practicable.

Further details and detailed requirements to be taken into account when conducting the safety assessment and its documentation can be found in the comprehensive AMC and GM on points *ATS.OR.205* and *ATS.OR.210*.



7.3. Supplementary regulation regarding (supporting) safety requirements

The provisions for safety (support) assessments presented in chapters 7.1 and 7.2 contained the specification of safety support requirements (in the case of a safety support assessment) and safety requirements (in the case of a safety assessment). A frequently observed subset are those safety (support) requirements that deal with the necessary training of technical and operational personnel. When determining the (training/education) measures required to adapt to an operational change, a distinction should be made between:

- Measures carried out according to the requirements of *Commission Regulation (EU) 2015/340 ATCO.D.085* (\cong conversion training³⁴)
- Measures not carried out according to the requirements of *Commission Regulation (EU) 2015/340 ATCO.D.085*. This also includes measures for other operational Air Traffic Services personnel in accordance with §1 No. 2 and technical Air Traffic Services personnel in accordance with § 1 No. 3 *FSPersAV*.

Different training methods are conceivable for both types of measures, which should be clearly identified in a safety (support) assessment. These can be:

- Briefing
 - Frontal briefing / instruction
 - Self-briefing
 - Electronic briefing
- CBT
- LMS
- Simulation (passive)
- Simulator training (active)
- Academy training
- Manufacturer training
- On-site training

Further measures can be added to the list but should be coordinated with the Section BAF/COMPETENCE in advance.

³⁴ If the safety assessment shows that conversion training is necessary to provide knowledge and/or skills for a change in the operational environment, this conversion training must be agreed in advance with competence@baf.bund.de.



8. Review and Approval

In *point ATM/ANS.AR.C.040, Commission Implementing Regulation (EU) 2017/373* makes demands on the competent authority with regard to the review of a notified change to the functional system. According to this, the BAF must

1. assess the validity of the argument presented with respect to *point ATM/ANS.OR.C.005 letter (a), paragraph (2), or point ATS.OR.205 letter (a), paragraph (2)*
2. and coordinate its activities with other competent authorities whenever necessary.

According to bullet point 1, the BAF must therefore verify in its review that

- an Air Traffic Services provider provides assurance, with sufficient confidence, via a complete, documented and valid argument that the safety criteria identified via the application of *point ATS.OR.210* are valid, will be satisfied and will remain satisfied,
- a service provider other than the Air Traffic Services provider provides assurance, with sufficient confidence, via a complete, documented and valid argument that the service will behave and will continue to behave only as specified in the specified context

More detailed AMC or GM for the review do not exist. In summary, it follows that the BAF has to verify within the scope of its review that the demands on the safety (support) assessment and assurance of changes to the functional system - in short: the argument - as described in chapter 7 are fulfilled. For this purpose, the BAF has the possibility to closely accompany the demonstration of compliance process for a change within the scope of its review. In this context, the BAF reserves the right to take part in certain events, e.g. workshops, on the basis of the information provided with the notification on a random or event-related basis. Corresponding participation requests must be coordinated with the service provider in advance and the general conditions must be defined.

The requirement set out in bullet point 2 of the above enumeration shall be met by the BAF in accordance with the existing agreements between the supervisory authorities within the FABEC and the bilateral agreements between the supervisory authorities outside the FABEC. These agreements specify when and in what form an exchange of information between the supervisory authorities is required and which rules apply if joint reviews are conducted.

The BAF decides, if necessary with the involvement of other supervisory authorities concerned, on the basis of the above-mentioned review of the argument presented whether an approval is granted. According to *point ATM/ANS.AR.C.040* there are two options:

- a) The argument is approved, possibly subject to conditions, when it is shown to be valid.
- b) The argument is rejected when it is not valid or if one or more of the requirements set out in *point ATM/ANS.OR.C.005* or *ATS.OR.205* in conjunction with *ATS.OR.210* are not met.

Case a) is equivalent to an approval of the change - possibly subject to conditions, case b) is equivalent to a non-approval, which is accompanied by a rationale/justification.

Since it is not always appropriate to reject the argument in cases where documents/evidence relevant to the validity of the argument have to be requested subsequently or where there are



questions requiring clarification, the BAF uses the "open review result" as an optional intermediate step in addition to the two options described above. This instrument is used to communicate missing elements or queries. The planned change cannot be implemented for the time being. After subsequent delivery or clarification, a final review result will be provided.

In any case, the service provider must be informed of the decision taken by the BAF and in case of b) a justification for the rejection must also be provided.

Note: An approval granted in this sense is not to be understood as an integral or implicit overall approval for a change/project, since further conditions or prerequisites may have to be fulfilled before its implementation (e.g. according to the FSAV (ATC Equipment Regulation), implementing regulations on interoperability, Regulation (EU) 2015/340, etc.), the fulfilment of which is not in the focus of the review and approval presented here.

The result of a review will normally be communicated to the notifying service provider no later than **30 calendar days** after receipt of the full argument using the form C.3.1 "Result of the Review of the Argument" and, as a general rule, a detailed "Examination Report" (form C.3.2a "Report on the review of a safety assessment and assurance" or C.3.2b "Report on the review of a safety support assessment and assurance").

If the argument is found to be valid, an approval is granted by the BAF and the change can be implemented. If there are shortcomings and/or conditions are imposed, this can be seen from the result of the review, usually supplemented by further explanations in the examination report. The following cases are then possible:

- a) An approval is not granted and the argument has to be resubmitted after revision, provided that the implementation of the change is still intended. If not, the project must be formally withdrawn. The change cannot be implemented before the BAF gives its approval.
- b) An approval is granted with conditions/obligations and the argument is to be resubmitted after revision - if necessary with the setting of a deadline. The change can be implemented as soon as the conditions/obligations are met, if necessary within the set deadlines.
- c) An approval is granted with conditions/obligations. The argument has to be revised - if necessary with the setting of a deadline - but not re-submitted. The change can be implemented as soon as the conditions/obligations are met, if necessary within the set deadlines.
- d) An approval is granted with conditions/obligations. However, the argument does not need to be revised as there are no shortcomings in this respect. The project can be implemented as soon as the conditions/obligations are met, if necessary within the set deadlines.

The review procedure for notified changes ends as soon as the BAF has issued a final review result and - if applicable - all conditions to be demonstrated to the BAF have been fulfilled.



Annex A: Related Documents

- [a] Manual for the common activities of the FABEC NSAs, Procedure 04
- [b] C.1.1 “Anmeldung einer geplanten Änderung“ (Notification of a planned change)
- [c] C1.1a “Anleitung zur Anmeldung einer geplanten Änderung“ (Instructions for the notification of a planned change)
- [d] C2.1 “Stellungnahme zur Anmeldung einer geplanten Änderung“ (Opinion on the notification of a planned change)
- [e] C3.1 “Ergebnis der Begutachtung des Arguments“ (Result of the review of the argument)
- [f] C3.2a “Prüfbericht zur Begutachtung einer Sicherheitsbeurteilung und -gewährleistung“ (Report on the review of a safety assessment and assurance)
C3.2b “Prüfbericht zur Begutachtung einer unterstützenden Sicherheitsbeurteilung und -gewährleistung“ (Report on the review of a safety support assessment and assurance)
- [g] C4.1 “Bearbeitungsprotokoll (ANMELDUNG) einschließlich des Nachweises für die Begutachtungsentscheidung gemäß ATM/ANS.AR.C.035“ (Processing protocol (NOTIFICATION) including evidence of the decision to review according to ATM/ANS.AR.C.035), (relates solely to the internal affairs of the BAF)
- [h] C4.2 “Bearbeitungsprotokoll (BEGUTACHTUNG)“ (Processing protocol (REVIEW) according to ATM/ANS.AR.C.040), (relates solely to the internal affairs of the BAF)
- [i] C.5.1 “Bearbeitungsprotokoll GENEHMIGUNG CHANGE MANAGEMENT VERFAHREN gemäß AMC1 ATM/ANS.AR.C.030(b)“ (Processing protocol APPROVAL OF CHANGE MANAGEMENT PROCEDURES according to AMC1 ATM/ANS.AR.C.030(b)), (relates solely to the internal affairs of the BAF)