European Action Plan for Airspace Infringement Risk Reduction

AIM and MET services providers

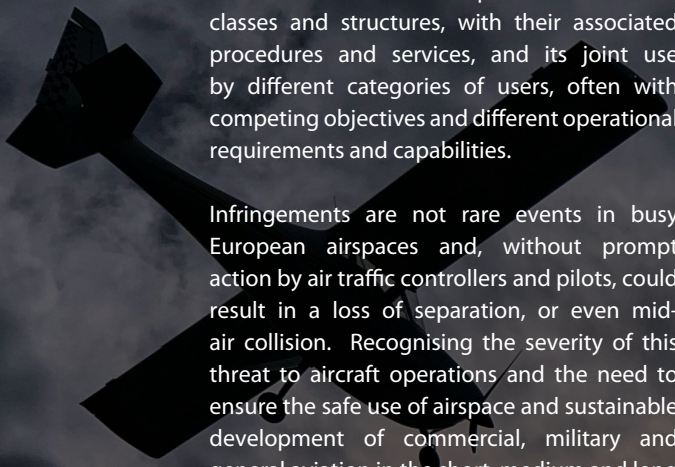
CANSO

EUROCONTROL

EAPAIRR

European Action Plan for Airspace Infringement Risk Reduction

Introduction



Airspace infringement, also known as "unauthorised penetration of airspace" is a major operational hazard that can result from the division of airspace into different classes and structures, with their associated procedures and services, and its joint use by different categories of users, often with competing objectives and different operational requirements and capabilities.

Infringements are not rare events in busy European airspaces and, without prompt action by air traffic controllers and pilots, could result in a loss of separation, or even mid-air collision. Recognising the severity of this threat to aircraft operations and the need to ensure the safe use of airspace and sustainable development of commercial, military and general aviation in the short, medium and long term, the major aviation stakeholder groups in Europe agreed that coordinated actions should be taken to control this aviation risk. The launch of the Airspace Infringement Safety Improvement Initiative in 2006 provided the vehicle for achieving this goal.

The first Action Plan was initiated in 2006, and was the key deliverable of the European Airspace Infringement Initiative. This initiative delivered an action plan in 2009, presenting a set of safety improvement measures and provides guidance on how they can best be implemented.

This action was partially adopted throughout the European Aviation Industry.

The plan was developed with the support of, and active contributions from, organisations representing the airspace users, service providers, regulatory and military authorities. Notable contributions were made by the International Council of Aircraft Owner and Pilot Associations (European region), Europe Air Sports, Association of European Airlines, International Air Transport Association, the European Commission and EUROCONTROL.

Ten years after that publication the issue of Airspace Infringements is still present, as is the associated risk. Many local and regional initiatives have been running for a number of years. These have resulted in the sharing of many best practices and have gone some way to reducing the risk slightly: but they have come nowhere near to eliminating it. With a further developed aviation industry which has seen increased traffic in both General Aviation and Commercial Aviation and flexible use of Airspace by the military, the environment has changed as well. Other developments like the evolution of Flight Information Service, 8.33khz implementation, development of surveillance and detection equipment, changes in airspace structure and activations and last but not least the rapidly increasing professional and recreational drone activities may have an impact on the risk as well.

All the aforementioned elements and the open ends to the questions, demand a renewed European Airspace Initiative. Again the ultimate goal is to develop a risk reduction actionplan and support airspace users, civil and military service providers and national authorities in implementing the recommended safety improvement measures for the timeframe 2020-2030. CANSO and EUROCONTROL chair the initiative which draws on the expertise and close support of a working group of stakeholders.

The recommendations have been divided in 5 domains: Airspace Design (AD), ANSPs (ANSP), Airspace Users (AU), AIM & Meteorology (AIM) and Regulators (REG). The document is available in a full version and in booklets per domain, and is complemented by a list of implemented best practices by the contributing stakeholders.

This document refers to the recommendations and best practices for AIM and MET services providers. The information on the other domains, as well as the complete introduction and context can be found in the full version on https://skybrary.aero/articles/european-airspace-infringement-action-plan.

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Recommendations

AIM and MET
services providers

REF	Recommendation	Rationale
AIM1	Examine ways of making AIS available to pilots, with real-time information, in a format that is suitable for handheld devices.	Real-time AIS information increases the situational awareness of the pilot. By providing ways to have this information available in the cockpit, activation of various types of special airspace and other NOTAMs can be pushed by the software. Careful and thorough flight preparation is still key to a safe flight execution, tools like this will help to reduce the risk of airspace infringements.
AIM2	Standardise (harmonise) VFR en-route charts.	Improved VFR publications will contribute to better IFR traffic protection. Standardisation of VFR en-route charts is considered the highest priority. The products provided by commercial sources (different from the State AIS organisations) should be considered within the scope of this standardisation effort. There must be a standard representation of airspace to prevent confusion in cross-border flights. Compliance with and common interpretation of ICAO Annex 4 requirements needs to be achieved. This includes common map layout conventions, consistent use of colour coding, symbols etc. High priority should be assigned to the standardisation of the most commonly used ICAO VFR chart (1:500 000). The action aims to improve the readability and simplify VFR en-route charts as much as possible. Only information relevant to VFR flights should be printed. There are instances of VFR en-route charts saturated by the volume of printed information. It takes the pilot too long to consult during flight and may lead to distraction. However, simplification should not lead to loss of important features. The clarity of frequency information should be improved. Frequencies should be indicated clearly on electronic and paper maps, allowing easy reference by pilots during flights. Harmonisation may include a review of needs and an agreement to publish charts with more appropriate scales (e.g., 1:250 000) for local flights. Harmonisation of VFR AIPs (manuals) should also be considered. The involvement of GA representatives in such reviews and in the process of VFR publications' standardisation is essential. The EUROCONTROL Agency should support and coordinate AIS providers' chart harmonisation efforts through the existing working arrangements.

REF	Recommendation	Rationale
AIM3	Investigate the feasibility of providing aeronautical information free of charge for GA.	The action aims to make aeronautical and MET information, that is relevant to airspace and airports/airfields open to VFR flights, freely available to the GA VFR flying community. This would reduce the probability of inadequate pre-flight preparation. For example, VFR en-route charts should be freely accessible and downloadable via internet from the service provider sites. There is a need for a dedicated study to identify what kind of information will bring the highest benefit to the users of the concerned airspace. EUROCONTROL, national authorities and AIS service providers should support GA establishments in their efforts to improve the briefing facilities on airfields (for example feeding them with the relevant aeronautical data, making necessary HW/SW available, etc.). A variety of solutions and business models (or combinations thereof) could be considered in this context. For instance, the service provision cost could be recovered through license fees or public (state or European Community) funds. The development of the SES2 package offers an opportunity to support the implementation of a high quality and «publicly accessible» AIS portal.
AIM4	Provide and enhance on-line (web-based) accessibility of aeronautical information services	NOTAMs, maps, charts, and current weather information should be made easily accessible at the service provider websites. Dedicated pages for GA VFR flights that provide access to all information needed for a flight could be designed. Visualisation of information should be improved: it should be user-friendly and intuitively comprehensible. The mechanisms, processes and means for delivery of the actual airspace structures' status to users (in particular GA) should be reviewed and optimised. Online AIS provision should not totally replace the traditional methods. Pilots should be provided with the option to obtain pre-flight briefing materials in hard copy or to contact the appropriate briefing office whichever is the preferred method of preparing for the flight.
AIM5	Harmonise, enhance, and classify AIS provision to VFR flights and promote classification rules and usage of keywords.	The implementation of this action should include: Provision of dedicated VFR sections in the AIPs or VFR AIPs (manuals); Provision of up-to-date VFR charts; Implementation of a user-friendly NOTAM system for VFR flights. The NOTAM briefing facilities should provide for: Graphical visualisation of information about changes to airspace structures and activation/deactivation of restricted airspaces; Narrow route briefing for (long distance) route flights; NOTAM selection and prioritisation tool; Grouping NOTAMs by topic. Enabling the generation of briefing packages tailored to the needs of the various user types may be considered (e.g., a glider pilot would need different information to a pilot planning a cross country flight). In case of generation of NOTAM update packages, the type of users the update is intended for should be taken into account (e.g., GA VFR flight). It would be desirable to include a short summary outlining the changes in traffic schemes and airspace. The readability of NOTAMs and other publications (AIC) of potential interest to VFR flights should be improved using plain language rather than encoded text where possible.

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		The names of towns, villages and other well-known geographic notions should be used instead of coordinates, which most of pilots cannot use in-flight. In the case of military ATS providers, the airspace status information should be made available to the units providing services to the VFR flights. Military controllers should pass this information to concerned flights which maintain radio contact. In cases where FIS is provided by a civil entity, the airspace status information should be made available according to the implemented FUA procedures. Concerned FIC(s) may be informed directly or through the responsible FUA structures.
AIM6	Improve availability of and access to VFR en-route charts and dissemination of updates to pilots.	Both electronic and hard copy (paper) versions of maps/charts should be maintained in order to provide the preferred means of flight briefing to the different generations of GA pilots. Enabling downloads of current charts or sections thereof is an improved service requested by pilots. Further improvement could be achieved by alerting subscribers (users) to implemented changes/updates, for example by means of e-mail notification messages. In addition, site visits and seminars should be considered in the case of major airspace changes.
AIM7	Include geographical coordinates in information items containing position details wherever possible.	Geographical coordinates are a major issue in GPS systems. Most GPS systems provide an extensive data file including all kinds of way points, navigational aids etc. The availability of LAT/LONG information on VFR maps would support the crosscheck and input of correct data in the GPS set. However, increasing clutter on VFR en-route charts must be avoided. Therefore, more appropriate vehicle appears to be ENR and/or AD part of the AIP, rather than charts. This information can also be provided on-line (on the service provider or CAA website) and can be picked up by commercial data providers.
AIM8	Implement MET products tailored to low level VFR flights in line with ICAO requirements.	The recommendation concerns the implementation of weather reports and forecasts in line with ICAO Annex 3 requirements, e.g., GAMET and AIRMET. Where possible, integrated on-line provision of aeronautical and meteorological information should be ensured, for example on the AIS/ATS providers websites.
AIM9	Promote standard and free maps on GPS. Promote standards to describe maps and add-ons.	GPS moving maps on portable devices provide the pilot with real time information on position and airspace. When used correctly, the increase in situational awareness is a benefit to the safety of air traffic. By providing free maps, according to set standards, the number of users is likely to increase.

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Best Practices

AIM and MET services providers

Section Reference	Best Practice	Source
AIM1	ACG runs an integrated system service, which enables its customers to plan a flight, coordinate an inner-European flight regarding air traffic (NMOC) to complete the necessary pilot pre-flight briefing including the MET briefing, either directly at the airport or via internet. www.homebriefing.com	ACG
AIM2	ACG provides two chart types for VFR flights where the lower airspace is depicted. 1) Aeronautical Chart – ICAO 1 : 500.000 and 2) Chart for VFR flights having scale 1 : 250.000 or 1 : 50.000 based on the VFR procedure. The design of these two chart types is already harmonized and it is based on the standards and recommendations of ICAO Annex 4. The additional local information presented by symbols, lines and areas within the charts for VFR flights is designed by ACG and stated in AIP Austria GEN 2.3 (Chart symbols).	ACG
AIM3	ENAIRE has implemented an online service called Insignia (https://insignia.enaire.es) which offers, free of charge, all the relevant aeronautical information to general aviation users updated daily to include NOTAMS, dynamic areas and all the relevant information for the day´s operations.	ENAIRE
	ACGs integrated briefing service www.homebriefing.com is free of charge for customers departing from or flying within Austria. ACG provides online charts, which are freely available to the GA VFR community via https://maps.austrocontrol.at. The "VFR online chart Austria" provides all static information relevant for VFR flights within Austria and gives additional information when clicking on specific items, as well as a direct link to the relevant AIP chapter for most features. Geo services used for the online chart are freely available as WMS and WFS services and can therefore be easily included in external systems as well.	ACG
AIM4	ENAIRE has implemented an online service called Insignia (https://insignia.enaire.es) which offers, free of charge, all the relevant aeronautical information to general aviation users updated daily to include NOTAMS, dynamic areas and all the relevant information for the day´s operations.	ENAIRE
	ACGs www.homebriefing.com and https://eaip.austrocontrol.at are fully compliant with all requirements mentioned here. Additionally, there is a 24/7 helpdesk, where all the information can be obtained verbally or in hard copy.	ACG
AIM5	ACG provides up-to-date Charts for VFR flights where the graphical representation is based on the standards and recommendations of ICAO Annex 4.	ACG
AIM6	Online charts at https://maps.austrocontrol.at allow printing/exporting a previously defined map extend into pdf files including user customized information. Additionally it is easily possible to download specific data via UI in different formats (e.g. KML).	ACG

Section Reference	Best Practice	Source
AIM7	Online charts at https://maps.austrocontrol.at allow the user to search for a specific navaid or any other feature or to directly select it in the chart and provide information about e.g. the exact coordinates as well as a direct link to the respective AIP chapter.	ACG
AIM8	Online charts at https://maps.austrocontrol.at are available on mobile devices and provide a 'locate me' function, which allows the user to receive information at the current position. www.homebriefing.com	ACG
AIM9	Develop a free to use navigation and airspace app for smartphones/tablets with support from the government, service providers and General Aviation. NLD: https://itunes.apple.com/au/app/PocketFMS/id956761709?mt=8https://play.google.com/store/apps/details?id=com.pocketfms.airspaceavoidnl UK: https://itunes.apple.com/au/app/PocketFMS/id669457168?mt=8https://play.google.com/store/apps/details?id=com.pocketfms.airspaceavoiduk www.homebriefing.com	UK & The Netherlands

Contributors

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