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EVALUATION

of Regulation (EU) No 996/2010 on the investigation and prevention of accidents and incidents in civil aviation

{SWD(2019) 178 final}

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Glossary

Term or acronym	*Meaning or definition*
EU	European Union
ENCASIA	European Network of Civil Aviation Safety Investigation Authorities
SIA	Safety Investigation Authority
ICAO	International Civil Aviation Organization
EASA	European Union Aviation Safety Agency
EC	European Commission
MS	Member State
CAA	Civil Aviation Authority
ESASI	European Society of Air Safety Investigators
ECCAIRS	European Coordination Centre for Accident and Incident Reporting System
SRIS	European Central Repository for Safety Recommendations
JRC	Joint Research Centre
NAA	National Aviation Authority
TFEU	Treaty on the Functioning of the European Union
TEU	Treaty on European Union
EMSS	ENCASIA Mutual Support System
SARPs	Standards and Recommended Practices
FTE	Full Time Equivalent
KPI	Key Performance Indicator
GDP	Gross Domestic Product
REFIT	Regulatory Fitness and Performance

1 INTRODUCTION

1.1 Purpose and scope

1.1.1 Purpose of the evaluation

This Commission Staff Working Document presents the ex-post evaluation of Regulation (EU) No 996/2010 on the investigation and prevention of accidents and incidents in civil aviation[1]. The evaluation assesses whether the main objectives of this Regulation have been achieved, in particular to further improve aviation safety through prevention of civil aviation accidents in the Member States.

In its Communication "An Aviation Strategy for Europe"[2] , the Commission highlighted the need to pursue high worldwide safety standards to ensure that the rules on accident investigation deliver the EU objectives in the best possible way. It therefore recommended carrying out an Evaluation of Regulation (EU) No 996/2010.

Previously, in line with the requirement in the Regulation[3], the Commission had assessed the rules on accident investigation using, among other means, a wide consultation of stakeholders. The resulting findings[4] included a detailed description of the difficulties and achievements linked to the Regulation and identified a limited number of actions aiming at supporting its primary objectives within the existing legal framework. The document also recommended carrying out a robust evaluation to identify possible areas for improvement.

This evaluation will consider the objectives of the Regulation and its performance by comparing the initial expectations against the current situation as regards civil aviation accident and incident investigation. The following criteria will be taken into account: relevance, effectiveness, efficiency, and the added value of the EU intervention. The evaluation will also review the coherence of the Regulation internally amongst its provisions and externally with other EU aviation safety instruments. Finally, it will determine whether or not there are overlaps or possible gaps with other safety regulatory instruments[5], as well as Member States' obligations under the applicable international rules.

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1 https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32010R0996&qid=1527837428118&from=EN.

2 Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of Regions - An Aviation Strategy for Europe; COM/2015/0598 final.

3 Regulation (EU) No 996/2010, Art 24; "This Regulation shall be subject to a review no later than 3 December 2014".

4 Commission Staff Working Document on the implementation of Regulation (EU) No 996/2010 on the investigation and prevention of accidents and incidents in civil aviation Brussels, SWD(2016) 151 final of 27 April.2016.

5 In particular Regulation (EU) No 2018/1139 of the European Parliament and of the Council of 4 July 2018 on common rules in the field of civil aviation and establishing a European Union Aviation Safety

The main driver for this evaluation is to determine whether the Regulation has had the expected effect. The overall goal is to confirm that any accident and, where relevant, incident would be taken care of in terms of accident investigation, emergency response, and handling of information, regardless of whether it occurred within the EU or in a third country involving European registered aircraft. The evaluation shall highlight the improvements made in these areas since the entering into force of the Regulation and identify deficiencies and possible gaps. Reference will be made, where relevant, to the various policy options described in the Commission's Impact Assessment accompanying the adoption of the Commission proposal in 2009.

Based on the analysis, the evaluation will draw conclusions on whether improvements are needed in the application of the Regulation, to the obligations of the various parties involved and as regards information and assistance to victims and their relatives.

1.1.2 Scope of the evaluation

Eight years after the introduction of Regulation (EU) No 996/2010 on the investigation and prevention of accidents and incidents in civil aviation, this evaluation will assess its impact, and analyse its effectiveness and contribution to the overall improvement of aviation safety.

The evaluation covers the period from December 2010[6] until December 2017 and considers the 28 EU Member States[7]. It assesses the actions taken at national level, in particular how the obligations provided under this Regulation have been met in each of the Member States. This involves, in addition to the rules applicable to accident and incident investigation, the assistance to victims and their relatives as well as national emergency plans. It also assesses the actions taken at the Union level, in particular the activities that have been carried out by the European Network of Safety Investigation Authorities (ENCASIA) with the support of the Commission and the management of safety recommendations[8] through a central repository[9].

It should be noted that there are some cases where the Regulation can be also applicable beyond the Union's external borders, namely where an accident or a serious incident occurring in a third country involves EU citizens or an aircraft registered or manufactured in one of the MS or operated by an EU carrier. In such case the Member

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Agency, and amending Regulations (EC) No 2111/2005, (EC) No 1008/2008, (EU) No 996/2010, (EU) No 376/2014 and Directives 2014/30/EU and 2014/53/EU of the European Parliament and of the Council, and repealing Regulations (EC) No 552/2004 and (EC) No 216/2008 of the European Parliament and of the Council and Council Regulation (EEC) No 3922/91, OJ L 212/1, and Regulation (EU) No 376/2014 of the European Parliament and of the Council of 3 April 2014 on the reporting, analysis and follow-up of occurrences in civil aviation, amending Regulation (EU) No 996/2010 of the European Parliament and of the Council and repealing Directive 2003/42/EC of the European Parliament and of the Council and Commission Regulations (EC) No 1321/2007 and (EC) No 1330/2007, OJ L 122/18.

[6] The Regulation became applicable on 2 December 2010.

[7] Including Croatia since 1 July 2013.

[8] Regulation (EU) No 996/2010, Art 18.

[9] http://eccairsportal.jrc.ec.europa.eu/index.php?id=114&no_cache=1.

States are entitled, in accordance with the international standards and recommended practices, to appoint an accredited representative or an expert to participate in the investigation[10]. Safety recommendations issued by a third country and addressed to a Member State shall be recorded in the central repository established under Commission Regulation (EC) No 1321/2007[11]. When an accident or incident which occurred outside the Union territory involves aircraft registered in a Member State or operated by an undertaking established in a Member State, this Member State may be requested to conduct the investigations when these are not conducted by another State. The Regulation also highlights the need for cooperation with other European countries, which should be allowed to participate as observers, in the work of the ENCASIA. These cases shall be covered as well by the Evaluation.

2 BACKGROUND OF THE INTERVENTION

2.1 Description of trends in civil aviation and developments in safety

EU air passenger traffic has grown at constant rates since the 1970's. In 2017 about 1 billion passengers passed through the EU airports[12], and the trend is expected to continue to grow at a 3.4% annual air traffic growth for the next two decades[13]. The number of available seats scheduled per week in the EU has increased by 220% between 1992 and 2018[14].

In terms of aviation safety, the amount of accidents per year has decreased while the amount of flights performed increased[15]. The rate of fatal accidents per one million departures is consistently lower than 0.5 fatal accidents per million departures when taking into consideration Air Operator Certificate (AOC) holders from all the EU Member States as well as Norway, Iceland, Liechtenstein and Switzerland combined[16]. This trend is also reflected in the figure 1 bellow.

[10] Member States are entitled to appoint accredited representatives to participate in the investigation as a "State of Registry, State of the Operator, State of Design, State of Manufacture or State providing information, facilities or experts at the request of the State conducting the investigation" according with Articles 3(1)(c) and 10 of the Regulation (EU) No 996/2010. States that have a special interest in the investigation "by virtue of fatalities or serious injuries to its citizens" may also be permitted by the State conducting the investigation to appoint an expert according with Article 3(1)(d) of the Regulation (EU) No 996/2010.

[11] See Article 18(5) of Regulation (EU) No 996/2010.

[12] Eurostat.

[13] https://www.airbus.com/aircraft/market/global-market-forecast.html.

[14] OAG – formerly "Official Aviation Guide", OAG is a provider of aviation-related data.

[15] https://ec.europa.eu/transport/sites/transport/files/2016_eu_air_transport_industry_analyses_report.pdf.

[16] Ibid.

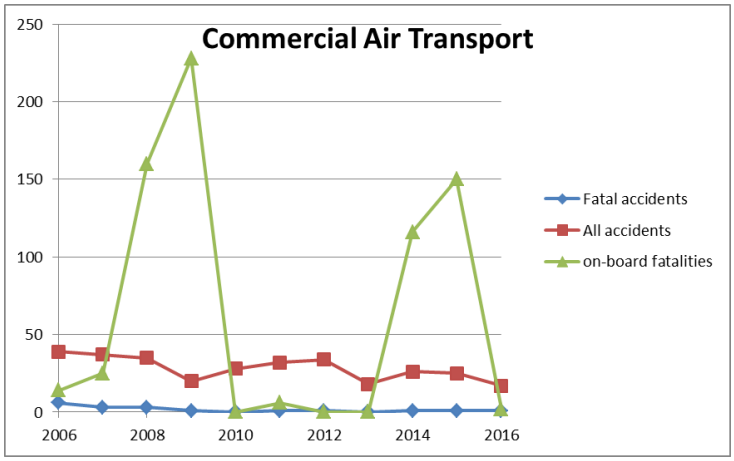

Figure 1: Evolution of accidents and fatalities, period 2006-2016. Source: EASA Annual Safety Reviews 2006-2017

As is show in the Table 1, for commercial air transport as well as for general aviation the annual number of accidents in Europe has on average significantly dropped since 2006.

Average annual number of fatalities	2005-2010	2011-2016
Commercial Air Transport	114	46
General Aviation	119*	91

* This is the average for the period 2006-2010. Figures for 2005 were not published by EASA.

Table 1: Average annual number of aviation fatalities in Europe before and after the introduction of Regulation 996/2010 (Source: EASA).

Despite the decrease in the number of accidents and fatalities, it remains a priority to continue reducing the number of accidents. In this context, the 2017 European Union Aviation Safety Agency (EASA) Annual Safety Review identified six priority key risk areas where further improvements in prevention of accidents and fatalities can be achieved[17]. These included aircraft upset or loss of control, which is the most common cause for fatal accidents; runway excursions[18]; runway and ground collisions and accidents caused by the intention to cause harm or damage which takes into account the human factor.

[17] EASA, 'Annual Safety Review 2017', p 24, https://www.easa.europa.eu/sites/default/files/dfu/209735_EASA_ASR_MAIN_REPORT_3.0.pdf.

[18] "(h)igh and low speed and occurrences where the flight crew had difficulties maintaining the directional control of the aircraft or of the braking action during landing, where the landing occurred long, fast, off-centred or hard, or where the aircraft had technical problems with the landing gear (not locked, not extended or collapsed) during landing." EASA, 'Annual Safety Review 2017', p 24.

The investigation of accidents and incidents and the dissemination of the lessons learned to prevent future accidents has been a central pillar of the aviation safety system since the beginning of the last century. This has been recognised at global level with the Chicago Convention[19], which provides under Article 26 the obligation for contracting States to investigate accidents and to disseminate the lessons learned. The report, analysis and follow-up of occurrences has also become an important source of learning and despite the reduced number of accidents, their investigation remains essential to the management of safety risks.

2.2 Description of the intervention logic and objectives of the initiative

As explained in one of the recitals of Regulation (EU) No 996/2010, "the civil aviation safety system is based on feedback and lessons learned from accidents and incidents"[20]. It follows that thorough and high quality accident investigations are crucial for drawing the lessons learned, which, in turn, form the basis for the measures to be taken in order to prevent similar accidents or incidents from reoccurring.

The Regulation replaces a previous instrument (Directive No 94/56/EC[21]) and was established based on an Impact Assessment[22] carried out in 2009 which considered different policy options. The Impact Assessment took into account the recommendations of a Group of Experts[23], consultations with Member States and stakeholders, studies, reports, and recommendations on the "Action Programme for Reducing Administrative Burdens"[24]. On this basis, the Impact Assessment identified and analysed five shortcomings:

- Lack of uniform investigation capacities

At the time, it had been concluded that smaller Safety Investigation Authorities (SIAs) lacked resources, which caused them to be economically dependent on regulatory bodies. Therefore, one of the goals that led to the adoption of Regulation (EU) 996/2010 was to improve the independence of these authorities, as recommended also by the Chicago Convention (Annex 13). The Regulation emphasised the need to establish a SIA in every Member State. The Regulation provides that these national bodies shall be functionally independent[25], in particular of aviation authorities; shall provide assistance to other Member States, if possible free of charge; and shall participate in the activities of the European Network of SIAs (ENCASIA).

- Tensions between safety investigations and other proceedings

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[19] Convention on International Civil Aviation (7 December 1944, entered into force 4 April 1967) https://www.icao.int/publications/pages/doc7300.aspx.
[20] Regulation (EU) No 996/2010, Recital 22.
[21] https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1532602307417&uri=CELEX:31994L0056.
[22] https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52009SC1477
23 The expert group was established based on Commission Decision EC/425/2003 in order to advise the Commission on a strategy to deal with accidents in the transport sector.
[24] https://ec.europa.eu/info/files/action-programme-reducing-administrative-burdens-eu-final-report_en.
[25] Regulation (EU) No 996/2010, Art 4(2).

Before the adoption of Regulation (EU) 996/2010, in many Member States tensions had arisen between SIAs and judicial authorities, pertaining to the treatment of evidence or access to sensitive information. While the aim of the former is the prevention of future accidents and incidents without apportioning blame or liability, the aim of the latter is in fact to find the liable party. The Regulation therefore provided clarifications and guidance on the coordination of the different investigations, the preservation of evidence and the protection of sensitive safety information[26].

- Unclear role of EASA in safety investigations

Tensions were also arising between EASA and SIAs regarding EASA's role in safety investigations. On the one hand, EASA, given its considerable role within Europe in *inter alia* certification, sought the possibility to be appointed as an "accredited representative" and to be invited to participate in safety investigations as a State of Design, State of Manufacture or a State of Registry[27]. On the other hand, this request of EASA was opposed by many Member States and their respective SIAs. The Regulation clarified EASA's role in safety investigations, especially in relation to collaboration with SIAs, and data exchange and analysis[28].

- Weakness in implementation of safety recommendations

Before the Regulation, there was no consistent approach in the processing and implementation of safety recommendations. Such lack of harmonised process led to different ways of handling similar safety issues, resulting in an inconsistent implementation of safety recommendations throughout the EU. Consequently, there was the necessity to harmonise rules related to safety recommendations and actions taken as a response to those recommendations, and to impose clear timeline for the different steps of the process.

- Insufficient assistance to the victims of air accidents

Prior to the entry into force of the Regulation, there was no legal requirement for assistance to victims and their relatives. The Regulation introduces obligations in that regard and notably requires quickness in making available the lists of all people aboard of an aircraft in case of an accident[29]. It is crucial to plan beforehand in order to ensure that all the necessary resources are available in case an accident occurs.

These five shortcomings identified in the 2009 Impact Assessment justified the adoption of the Regulation.

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[26] Regulation (EU) No 996/2010, Art 12, 13 and 14.

[27] EASA is, under Article 77 of the Regulation (EU) 2018/1139, vested with the responsibility "where applicable and as specified in Chicago Convention or the Annexes thereto" to "carry out on behalf of Member States the functions and tasks of the state of design, manufacture or registry, when those functions and tasks are related to design certification and mandatory continuing airworthiness information".

[28] Regulation (EU) No 996/2010, Art 8.

[29] Regulation (EU) No 996/2010, Articles 15(4) and (5), and 20(1)(a) and (2).

As shown in figure 2 below, the intervention logic of Regulation (EU) 996/2010 addresses in a first instance the two high level objectives which are derived from the obligations of States under the Chicago Convention, namely: (1) aiming at improving civil aviation safety and (2) reacting in an appropriate manner to major civil aviation accidents.

The Regulation provides the following specific obligations for Member States and respective organisations covered by the Regulation:

- establishing a high level investigation capability in each Member State
- improving the cooperation among SIAs and with other authorities involved in the follow-up action of accidents
- protecting sensitive information collected during an investigation
- establishing accident emergency plans
- improving the assistance to victims of air accidents and their families

When it comes to the purpose of an accident investigation legislation, two general objectives can be identified: overall improvement of aviation safety, and appropriate and timely reaction to major civil aviation accidents. To achieve these general objectives, some specific objectives need to be met. These are in particular: a high-level accident investigation capacity, good relations between SIAs and other authorities, including EASA, national aviation authorities or judicial authorities in the Member States, and, finally, a high degree of protection of sensitive information related to accident investigation. On the operational level, the achievement of these specific objectives is possible through meeting a set of the following operational objectives: expeditious holding of independent investigation; accurate reporting by SIAs on the investigation findings; evidence based analyses of accidents; timely issuing of safety recommendations; cooperation and assistance among Member States; establishment of emergency plans. In order, for instance, to achieve the expeditious holding of unbiased safety investigations certain measures need to be taken. These include the obligation to establish an independent and well-resourced SIA, the obligation to actually investigate an accident or serious incident, the obligation to establish arrangements with other authorities, as well as ensuring that accurate information on passengers on board is always available. Only then, an output in form of investigations that are conducted in an unbiased manner can be accomplished, eventually resulting in the prevention of future accidents and an improvement of aviation safety. Detailed inputs and outputs of the intervention logic and the expected results are provided in the following figure.

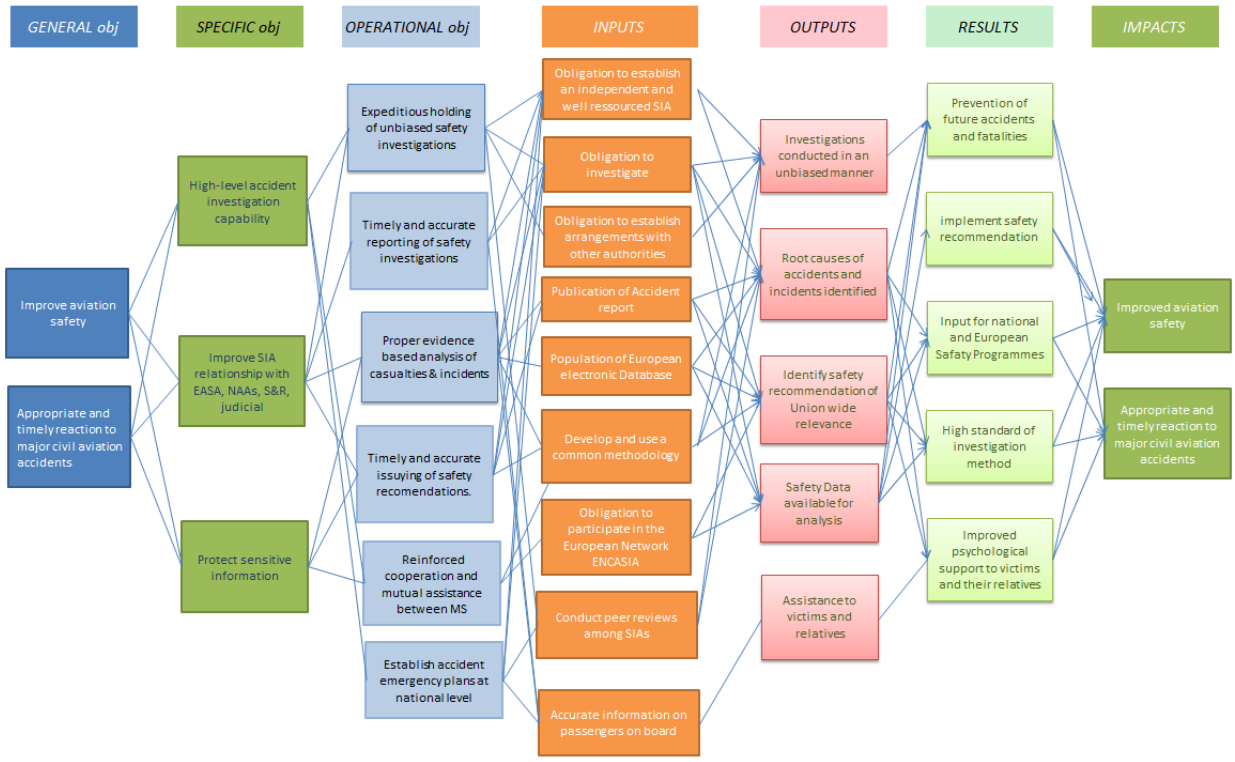

Figure 2: Intervention logic of Regulation (EU) 996/2010

2.3 Baseline and points of comparison

In a counterfactual scenario,[30] if the Regulation had not been adopted, ENCASIA would not exist and European coordination would be confined to previously existing bodies such as the European Society of Air Safety Investigators (ESASI) and the Air Accident and Incident Investigation Group of Experts of the European Civil Aviation Conference (ECAC-ACC). In such case, while some form of limited international cooperation between SIAs would take place in a less structured manner, for the SIAs to share best practices, the detailed common approach to accident investigation promoted by ENCASIA would not exist.

The Regulation requires Member States to adopt advance arrangements for the cooperation between SIAs and other authorities, e.g. the judicial authorities. If the Regulation were not adopted, it is likely that only those few Member States who had arrangements before the Regulation would continue to have such arrangements in place. In addition, in the absence of rules relating to the protection of sensitive information, the availability of information essential to the prevention of accidents might have been

30 'Support study to the evaluation of Regulation (EU) No 996/2010 on the Investigation and Prevention of Accidents and Incidents in Civil Aviation: Final Report' (2018) p. 71, < https://ec.europa.eu/transport/sites/transport/files/studies/2018-support-study-2010r0996.pdf> (Support Study).

impeded and the level of aviation safety might have been lower than the one enjoyed since the adoption of the Regulation.

In the counterfactual scenario, EASA would most likely go through an increase in responsibilities in the context of accidents, in particular as a regulatory or certifying entity, regardless of whether it was formally described in the legislation, but its role in the investigation would not have been clearly defined. This would be likely to cause confusion between EASA and the other parties involved in the investigations, notably where the accident is occurring is a third country and involving European manufactured or certified products for which EASA is the competent authority.

In the counterfactual scenario, the responses to the safety recommendations would still be implemented with a significant delay and highly inconsistently.

In the counterfactual scenario, assistance to victims and their relatives would continue to be unregulated, and the risk of not being able to react fast and efficiently in giving assistance to victims and relatives in case of emergency would be higher.

3 IMPLEMENTATION / STATE OF PLAY

The Commission assessed the achievements of the Regulation since its entry into force, and analysed the difficulties met during the implementation[31]. It highlighted, in particular, the improvements resulting from the work of the European Network of Civil Aviation Safety Authorities (ENCASIA), which it considered as the biggest added value for Europe, allowing to improve the efficiency of accident investigation. Furthermore, the analysis pointed out the improvement in the perception of SIAs as being independent, since the adoption of the Regulation and the improvement of the cooperation between SIAs and EASA. The analysis also noted the success of the Safety Recommendations Information System (SRIS), with 1810 safety recommendations recorded during nearly four years of the system's operation, at the end of 2015. The analysis stated that most of SIAs were positive about the new system.

It also highlighted several weaknesses such as mutual assistance and independence which should be strengthened and suggested to do this without amending the Regulation. While stating that in general most of the MS have adapted their respective national rules to be in line with the Regulation, the analysis pointed out particular problems in implementation of certain provisions of the Regulation. Namely, problems with implementation of Article 14(2) of the Regulation, dealing with the advanced arrangement between SIAs and other authorities, were highlighted. The analysis noted that due to slow implementation of this provision, the Commission initiated eighteen infringements procedures out of which seven led to a letter of formal notice being sent to the non-compliant MS. Finally, the analysis identified several challenges faced by the safety investigations in general and the Regulation in particular. These were, among others, the tensions between the safety and judicial investigations, use of final reports in front of

[31] Commission Staff Working Document SWD (2016) 151 final.

courts, or the questions related to the scope of the Regulation. Consequently, in order to further study the issues identified, the analysis recommended to carry out a comprehensive evaluation of the Regulation.

4 METHOD

4.1 Methodology and sources of information

A support study was carried out by an external contractor to provide input to this evaluation[32].

Relevant stakeholders, falling into six main stakeholder groups[33], were consulted in the context of the study by different means. The following consultation tools were employed:

- Targeted interviews: At the beginning of the study, the contractor held a limited number of interviews with selected stakeholders, representing all six stakeholder groups, for a deeper elaboration of the organisation and selection of issues and persons or organisations to be contacted.
- Online survey, in which respondents from 26 Member States participated, with varied backgrounds ranging from SIAs to victims, and from Member State authorities to EU institutions and industry.
- Focus group: Through an online platform, individual experts from the Commission, SIAs, CAAs, and academia, assisted and advised the consultant throughout the study in framing and defining the problem or reaching a judgement based on their expertise, from the design stage to the interpretation of findings.
- Stakeholder workshop held on the 1st June 2017 where preliminary findings of the independent study were presented to the stakeholders who provided with their feedback and suggestions for improvement.
- Public consultation in form of an online questionnaire held between 16 June and 4 October 2017, which included questions regarding familiarity with the Regulation, the image of the national safety investigation authority, the protection of technical data, the protection of private data, informing relatives of victims, and the emergency and assistance plans at national level.

Furthermore, in order to complement the study with factual information, desk research on several related issues was carried out. It included:

- ICAO Standards and Recommended Practices and supporting documents
- EU Legislation
- ENCASIA documentation

[32] https://ec.europa.eu/transport/sites/transport/files/studies/2018-support-study-2010r0996.pdf

[33] European Union staff (European Parliament, Council, European Commission, JRC, EASA, etc.); safety investigation authorities; Member States (ministries and civil aviation authorities); aviation community; law and criminal investigation; passengers and victims.

- Court cases documentation
- Four accident case studies
- Existing studies and literature.

The data collected was used to respond to the evaluation questions. All the analytical findings constitute the basis for the assessment on how the Regulation has scored on the five evaluation criteria: relevance, effectiveness, efficiency, coherence and EU added value.

Each of these criteria was addressed through evaluation questions (see Annex II). These questions were answered in the support study and reflected in Section 6 of this document, when considered pertinent.

A Commission internal Steering Group provided advice and monitored the progress of the exercise. Being composed of members from different Commission departments and having the necessary mix of knowledge and experience, the Steering Group brought together a range of different perspectives and provided the necessary input, in particular where the evaluation touched different policy areas.

4.2 Limitations and robustness of findings

Certain groups of stakeholders were initially not inclined to participate in the stakeholder consultation and there was a lack of response from some Member States. To mitigate this stakeholder fatigue, a proactive approach was taken by the consultant, supported by the Commission and paired with the extension of deadlines for responses. These solutions ensured that the inputs received, 144 responses from the stakeholders representing each of the six stakeholder groups, met the requirements of being sufficiently robust and, consequently, indicative enough for the purposes of the evaluation.

A further limitation was the difficulty to monetise the benefits of the actions carried out under the provisions of the Regulation. It was not problematic to assess the costs generated at the level of the European Union (e.g. the ENCASIA grant or the cost of organising the meetings). However, it was more difficult to determine those costs that are incurred at the national level (e.g. the costs of establishing advanced arrangements or national emergency plans) as these are largely influenced by the approaches taken by the particular Member States in this regard.

5 ANALYSIS AND ANSWERS TO THE EVALUATION QUESTIONS

This section provides the analysis and the results for the five evaluation criteria based on the detailed evaluation questions (see Annex 3), which were answered in reference to the desk research, the field research, including the Public Consultation and the results from the case studies. Some evaluation questions represented below were merged in order to simplify the presentation of the results. They appear in the text in italics.

5.1 Relevance

The first evaluation criterion is the relevance of the Regulation, which aims at understanding to which extent the measures required by the Regulation are still relevant and appropriate for meeting the initial goals and to face new challenges. This section will assess the Regulation in an ever-evolving European context.

Regarding the specific objective of reinforcing the cooperation between SIAs, almost all SIAs have been involved in the European Network of Safety Investigation Authorities (ENCASIA) which focussed on exchanging information and identifying best practices. The biannual plenary meetings of the heads of SIAs allow to agree on common targets, to identify an annual work programme and to commit on the necessary contributions to implement it. Smaller SIAs, who previously operated in isolation, are offered the possibility to be part of a wider regional process and to rely on the experience of other Member States. Nine responses out of ten received in the targeted survey consider ENCASIA as a success and insist that it needs to be continued in order to keep the efforts ongoing.

The Regulation requires Member States (Article 4(6)) to ensure that its safety investigation authority is given the means required to carry out its responsibilities independently and to obtain sufficient resources to do so. However, when it comes to the objective of ensuring adequate investigation capacity, it remains unclear whether all Member States are able to handle a complex investigation of an aviation accident, e.g. involving a large number of victims, or taking place in an urban area. . At the same time, 10 out of 25 respondent SIAs indicate that the investigation capacity of SIAs remains insufficient.

In addition, Article 6(2) of the Regulation provides the possibility of asking another Member State for mutual assistance. The Commission has no concrete information about such arrangements being put in place by Member States. Therefore, ENCASIA, also acknowledging existing room for improvement, intends to allocate more resources for specific training programmes in this area. While the Regulation provides a tool for facilitating mutual assistance in accident investigation, its advantages do not seem to have been exploited by the Member States.

With regard to the need to coordinate safety investigations and judicial investigations, the requirement for advanced arrangements as provided in Article 12 (3) of the Regulation has been useful for establishing dialogue between the various actors and structuring relations among them. In most cases, clear language regarding procedures and timeframes has helped to address the issue of cooperation. In addition, the rules regarding the preservation of evidence and protection of sensitive safety information have contributed to ensuring that information important for the prevention of accidents is made available. Nonetheless, it appears that tensions between authorities conducting safety investigations and authorities in charge of judicial investigations still persist. Nearly half of the responses received in the survey confirmed this statement. Cooperation and advanced arrangements, being an important vehicle of such cooperation, therefore

continue to play a crucial role in improving such tensions between the various investigation authorities. Consequently, the objective of better cooperation amongst the investigation authorities remains relevant.

The Regulation addressed the role of EASA in supporting the safety investigations, and in acting according to the outcomes of the investigations[34]. The intention of the legislator was to ensure that EASA's responsibilities related to design approval were reflected in its participation in safety investigations. This intention is linked to the objective to clarify the role of EASA in accident investigation while reflecting the experience and knowledge held by EASA. In particular EASA's functions and tasks of State of Design, Manufacture and Registry when related to design approval and its various roles of rulemaking, certification and oversight authority should be used wherever relevant in the investigation process. Nevertheless, the tensions still exist in relation to EASA's participation in safety investigation, as further discussed below in the chapter on efficiency. However, given the specific functions and tasks of EASA and its potential to contribute in safety investigation, as envisaged in Recital 9 of the Regulation, the rules defining the role of EASA in accident investigation remain highly relevant for SIAs to make efficient use of the EASA's expertise while not affecting the independent status of the investigation.

The Regulation also lays down detailed rules on the follow-up to safety recommendations. The safety recommendations suggest specific actions to be taken by the addressees (i.e. by the airline, the manufacturer, the authority or any other involved party). The Regulation aims to put pressure on all parties involved to effectuate the recommendations in order to prevent the type of accident from occurring again. While there is still a lack of follow-up to safety recommendations by the addressees, detailed rules setting up the modalities of such follow up are relevant in improving the situation and achieving a high follow-up rate. |

The Regulation aims to ensure better protection to victims and their relatives. To this end, the Regulation lays down the obligation for airlines to establish the procedures that allow for the production of a list of all passengers on board of an aircraft involved in an accident. Moreover, the Regulation also renders the obligation for the Member States to establish a national civil aviation accident emergency plan and to ensure that the airlines established in their territory have in place the plans for the assistance to victims and their relatives. The answers received in the targeted survey, covering the respondents from all six stakeholder groups, indicate that 64% respondents believe that there is a sufficient assistance to victims and their relatives provided in their respective countries[35]. However, at the same time, 54% respondents are either neutral or disagree with a statement that the national civil aviation accident emergency plans have been sufficiently developed and implemented. On the other hand, the interviews conducted within the framework of the support study suggest that the requirements on having the passenger lists as laid down

[34] Regulation(EU) No 996/2010 article 8.
[35] Support Study, p. 134.

by the Regulation have been fulfilled by the airlines. Consequently, while the rules on the assistance to the victims laid down by the Regulation have not been fully implemented, there are indications that their existence has improved the assistance to the victims by the airlines as well as the Member States. Hence these rules continue to be relevant in the future efforts of further improve such assistance.

A number of issues have recently become relevant: drones, cyber-attacks, social media and increasingly complex aircraft and air traffic management requiring new investigation techniques.

When drafted, the Regulation did not foresee the inclusion of drones under the rules on aviation safety. However, with the entry into force of the new EASA Basic Regulation, Article 5 of the Regulation was amended and it now lays down the obligation to investigate accidents or serious incident involving aircraft to which the Basic Regulation applies.[36] As unmanned aircraft now fall within the scope of the Basic Regulation, the obligation the new Article 5 to investigate also extends to accidents and serious incidents involving drones. It should be noted that the safety investigation authorities may decide to derogate from this obligation, taking into account the expected lessons to be drawn for the improvement of aviation safety, and not initiate investigation of an accident or serious incident involving an unmanned aircraft "for which a certificate or declaration is not required pursuant to Article 56(1) and (5) of Regulation (EU) No 2018/1139". As the new Basic Regulation entered into force after the conclusion of the stakeholder consultation for this evaluation, the Commission has no information on the preparedness of SIAs to investigate such accidents or serious incidents involving drones.

As to the investigation of cyber-attacks, the evaluation support study and workshop highlighted that although this is not a competency of SIAs, but rather of law enforcement, it will be necessary for the SIAs to have an access to the capacity and expertise to determine whether a cyber-attack was at the cause of the accident.

Finally, the evaluation highlighted a new trend in merging SIAs into multimodal organisations, which, at the time of writing is the case in twelve Member States. However, no common pattern exists as to which transport modes (air, rail, sea, or road) are part of such investigation authority[37]. While economy of scale seems to be the key driving factor for deciding on the structure of these organisations, other factors such as the methodology of safety investigation must be considered. Roed-Larsen and Stoop (2012) note that the preferred practice is to liaise only with other SIAs within the same transport mode, and conclude that "a multi-modal or, even better, a holistic cross-sectoral national or international investigation body will benefit in many ways from a broader approach than is common in many countries"[38].

[36] Regulation (EU) 2018/1139, Art. 135.
[37] In some cases, (e.g. Dutch Safety Board) accidents and incidents of military transport are also included.
[38] Modern accident investigation-Four major challenges, Roed-Larsen, Stoop, Safety Science 50 (2012), p. 1396.

In light of the ever-evolving technology posing new potential challenges in accident investigation and requiring further expertise and cooperation, the objectives of the Regulation continue to be relevant in achieving the ultimate goals of appropriate and timely reactions to major civil aviation and, consequently, the overall improvement of aviation safety. Further efforts seem necessary in support of achieving these goals.

5.2 Effectiveness

This subsection assesses whether the Regulation has been effective in achieving the intended objectives and in particular the improvement of aviation safety in Europe. It will in particular assess how the specific objectives and the operational objectives of the intervention have been implemented.

5.2.1 Ensuring high-level accident investigation capacity

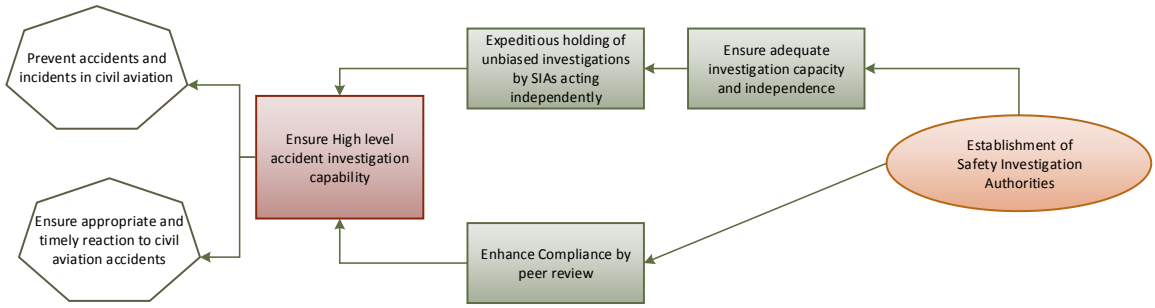

Figure 3: aspects contributing in ensuring high level of accident investigation capacity

Among the operational objectives of the intervention, the Regulation requires the **expeditious holding** of investigations and requires SIAs to issue the final report in the shortest possible time, if possible within one year.

However, out of 104 accidents involving large aircraft in the EU between 2010 and 2016, only about 40% of the reports were released in less than 1 year, while the current average time to complete an investigation is two years. The evaluation support study found that the delays can be attributed to the complexity of investigations, which often cannot be accounted for beforehand.

On the other hand, the average response time to recommendations has been improved, even though it is still beyond the required timeframe of 90 days. The support study has found that the delays can be, to certain extent, explained by the lack of a standard procedure of closing the files in the Safety Repository Information System (SRIS), resulting in the file remaining open beyond the 90 days period.

As to the **investigation capacity** of SIAs, the targeted survey showed that half of the respondents consider the capacity of SIAs as insufficient, especially in terms of personnel

and equipment. Therefore, it appears that there is still a further effort to be deployed by some Member States in order to reach a sufficient investigation capacity.

In terms of financing, the annual budget of 18 out of 22 surveyed SIAs remained the same or has increased since the entering into force of the Regulation (with only one SIA reporting an increase of more than 5%), while four SIAs answered that their budget in fact decreased, reporting a reduction of more than 5 %. Sufficient funding is crucial in ensuring, among other things, that the SIA is well equipped and capable of attracting and further developing qualified personnel. Having sufficient financial resources is directly linked to the ability of the SIAs to adequately perform its tasks.

Nevertheless, according to interviewees, the **quality of investigations** has improved across Europe, with 51 % of the respondents considering the investigations being of sufficient quality. The higher quality of independent safety investigation is mainly reflected through better quality of safety recommendations and reports. Having sufficiently trained personnel is crucial for SIAs in order to conduct high quality safety investigations. The Regulation itself only provides for a relatively broad requirement for SIAs to make "qualified personnel" available, the qualifications referred to are not defined[39].The training of investigators, sharing of best practices and promoting collaboration between SIAs within the ENCASIA network, allowed to reinforce the practical and theoretical knowledge in handling major accident investigations. The results of the field research conducted by the contractor suggest that the activities of ENCASIA regarding the training of investigators, and in particular the joint training activities, had a direct influence on the improvement of safety investigations across Europe.

Furthermore, based on the information received from some SIAs, free access to all relevant documents deemed necessary for the purposes of safety investigations remains an issue that impacts the quality and timeliness of investigations. Some owners of such documents, information and records interpret free access restrictively, not providing the SIAs the possibility to process the documents outside of the owner's premises. Such restrictions in turn limit the ability of the investigators to examine the documents, which often amount to thousands of pages, and can have a negative effect on the quality of the investigation.

It follows that there are a number of aspects affecting the quality and timeliness of safety investigations. These include the free access to documents, the need of sufficient funding, and the requirement of more systematic and organised training. Further improvements in these areas would likely result in high quality of safety investigations conducted in timely manner.

The provisions on **independence of SIAs** were introduced in order to avoid any conflict of interest and external interference in the determination of the causes of the accidents and incidents being investigated. They have been reinforced in the Regulation which stipulates that the SIA shall be functionally independent, in particular of aviation

[39] Article 4(6)(e).

authorities and of any other party or entity the interests or missions of which could conflict with the task entrusted to the safety investigation authority or influence its objectivity. In such way, the Regulation reflects the approach ICAO, which in its Manual of Aircraft Accident and Incident Investigation provides that "the Aviation investigation authority must be strictly objective and totally impartial and must be perceived to be so. It should be established in such a way that it can withstand political or other interference or pressure"[40].

According to the consultation results, 46 stakeholders (representing 74% of the respondents) believe that the investigations are unbiased, with additional 12% having neutral or no opinion on this matter. However, some respondents have mentioned that there seems to be an influence from other parties. However, no specific examples were mentioned. The public consultation showed that more than half of the respondents have a high degree of trust in the SIAs to take appropriate action in case of a major accident and only 11% have low or very low trust in the SIAs.

The Commission services have been occasionally confronted with issues related to the 'functional', 'operational' and 'organisational' independence of SIAs. Most recently, the Court of Justice of the European Union (CJEU) upheld the Commission's concerns in relation to the organisational and decision-making independence of a national investigation body in Poland[41]. When reviewing the implementation of the Regulation,[42] the Commission services concluded that the Regulation had no practical effect on the independence of SIAs. The evaluation support study indicated the potential lack of independence of SIAs in four Member States but provided evidence only in one case[43]. ENCASIA reported that in several smaller Member States the budgetary restrictions which followed the 2008 financial crisis impacted the resources and the autonomy of SIAs[44].

The Commission monitors the implementation of the different obligations of Member States provided under this Regulation. In order to achieve the objective of reaching a high level of investigation capability the Regulation provides for the promotion **of peer reviews between SIAs**.

Peer reviews consist of a visit of at least two peer reviewers from different Member States who visit during three days the peer-reviewed SIA. This process allows familiarising with each other’s processes, identifying deficiencies and remedial action. By today, 20 SIAs have been peer-reviewed. The field research done in the context of the support study concluded that the SIAs that have already participated in the peer review exercise appreciate this process. However, one SIA noted that an official audit could have been more effective. It should however be highlighted that, according to the support

40 ICAO Doc 9756 (Manual of Aircraft Accident and Incident Investigation), Part I (Organizing and Planning), Para 2.1.2.

41 Judgement of 13 June 2018, *European Commission v Republic of Poland,* C-530/16, EU:C:2018:430 .

42 Commission Staff Working Document SWD (2016) 151 final.

43 In the meantime, changes have been made by that Member State to redress the situation.

44 This however did not corroborate with the peer review reports made available to the Commission.

study, despite the fact that peer reviews are to a large extent financed from the EU budget, SIAs avoided to share the results with the Commission. According to answers received in a workshop organised as part of the support study, SIAs kept the peer reviews internal in order to build trust. Member States expressed concerns that sharing the results that identify some shortcomings could potentially trigger infringement action by the Commission.[45] Also, in specific cases of alleged breaches such as of the obligation of "independence", the peer-reviewed reports did not reflect the information received from other sources, while at the same time such findings were emphasised in ICAO Audits. The situation is different in other transport modes insofar as it is a current practice, under the respective Accident Investigation Regulations, that the Commission services and the respective agencies work hand in hand with the SIAs to assess their functioning, which allows to take an appropriate action in case of breaches. The absence of clearly formulated oversight rules and the mostly general nature of the respective provisions of the Regulation make it difficult to monitor their correct application by Member States.

5.2.2 Cooperation and assistance among SIAs and their relationship with EASA and other authorities

5.2.2.1 Cooperation and assistance between SIAs

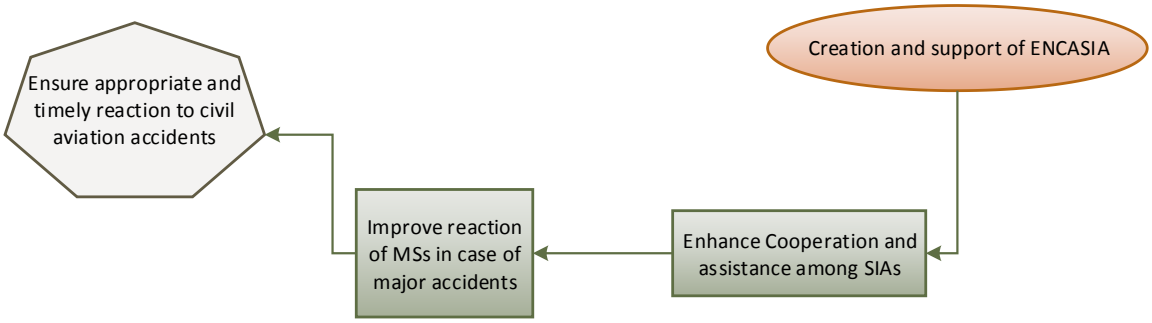

Figure 3: the role of ENCASIA in ensuring appropriate and timely reaction to civil aviation accidents

Functioning assistance mechanisms among SIAs within Europe are essential, particularly for the smaller Member States that do not have at their disposal the necessary funding sources. In some cases, mostly of the smaller SIAs, the research conducted within the context of the support study indicates that resources are insufficient for a more complex investigation in the case of a major accident. In terms of human resources, SIAs vary considerably in the amount full-time investigators they have available, with one SIA employing more than 50 investigators while 5 SIAs having only 1 full-time investigator.

[45] Support Study, p. 125.

As many as 14 SIAs have 5 or less full-time investigators. While it is difficult to determine the optimum number of the investigators SIA should have at its disposal, as this varies based on the size of the investigation in question, it is clear that the more serious aviation accident the more personnel is need to conduct the investigation. It follows that with such limited personnel capacities, handling an investigation of a major accident might be difficult, especially for the smaller SIAs.

The primary responsibility to ensure sufficient resources to the SIA belongs to its Member State, however, the Regulation provides for the possibility to delegate the task of conducting an investigation to another SIA or to request the assistance of another SIA.

The creation of ENCASIA is considered by the interviewees to be one of the most effective elements that were brought by the Regulation. The Network has strengthened cooperation between the SIAs as it provides a platform for SIAs to cooperate and exchange information and experiences according to the majority of the interviewees.

24 out of 31 respondents in the stakeholders' survey consider that the creation of ENCASIA, which encourages SIAs to cooperate with one another and facilitates the exchange information in order to build a common understanding of the role and procedures of the safety investigation, has strengthened the coordination and cooperation between SIAs under the Regulation.

Most recently, ENCASIA started to discuss a model contract on cooperation and mutual assistance. While this is certainly a positive development, such cooperation might still be difficult to put in practice due to the momentary circumstances at the time when assistance is being requested. Questions of budgetary constraints or temporary work overload of an assisting SIA need to be considered when SIAs enter into the cooperation arrangements.

The European Commission **provides support**, mainly through grants, secretarial support, translations as well as assistance during ENCASIA meetings and through a thorough development and maintenance of the ENCASIA website and the SRIS database, where the safety recommendations and their responses are stored and shared among SIAs. This support is quantifiable to EUR 1.9 million for the period 2011-2017[46]. A majority of interviewed stakeholders consider that this amount is sufficient for supporting ENCASIA's activities. However, when referring to the Commission grant specifically, no conclusion can be drawn on whether the amount is sufficient to reach the objectives. Participants in the stakeholder consultation were divided on this issue. However, cooperation between Member States has increased substantially as a result of the activities covered by the grant, including the joint training courses and the peer review programme, and significant benefits, described above, derived from it.

[46] Support Study, p. 141.

Some SIAs suggested an increase of the financial support of the EU, including for setting up and running a permanent office for ENCASIA, and creating a board formalising the ENCASIA Network. However, the evaluation support study finds that such alternatives are not necessarily associated with better support. ENCASIA also indicated that its limited structure would not allow managing further activities and that the grant allocated is not sufficient to cover the planned actions.

5.2.2.2 Clarifying the role of EASA in safety investigations

An identified specific objective of the intervention is that the Regulation improves the relationship between SIAs and other authorities, and particularly with EASA. This includes clarifying the role of EASA in safety investigations. In this regard, the Regulation notably aimed at allowing EASA, as a responsible design authority, to be represented during the investigation and to obtain, without delay, any factual information which may be needed to take immediate safety action in the aftermath of an accident. Article 8 establishes the conditions under which EASA should be invited to participate in safety investigations and defines a number of rights and obligations applicable to it.

Despite the significant progress made on both sides to reinforce the cooperation, it should be noted that some tensions still exist in relation to EASA's participation in an investigation along with the SIA, or in relation to a SIA requiring immediate and unrestricted access to all documents that the SIA deems necessary to collect for the purposes of the safety investigations. Cooperation, while having been improved, is not yet optimal and may, as a consequence, potentially delay the rapid adoption of actions, which might be necessary to ensure the safety of flights. The level of cooperation and EASA's involvement in the investigation may vary considerably from one case to another.

According to EASA, whereas the situation has improved, the Regulation has not been fully effective in enabling it to contribute to safety investigations in a manner proportionate to its role. EASA considers that this reduces the overall opportunity to improve the quality of the investigations and to ensure the safety of aircraft design.

In this context, EASA shared examples of situations where it has not been able fully performing its duties. In most of these cases, EASA pointed to limitations which are not or only partly addressed under Article 8. No firm conclusions can therefore be drawn on whether those limitations are due to a lack of effectiveness of the existing provisions or to the fact that EASA rights under the Regulation are limited and not similar to those of an Accredited Representative of a State.

EASA considers that it should be granted rights and obligations similar to those of the Accredited Representatives of the States in order to be able to efficiently fulfil its duties. It should be noted that Article 2 of Regulation 996/2010 establishes that an "accredited representative designated by a Member State shall be from a safety investigation authority" only.

EASA also notes that improvements could alternatively be achieved via the conclusion of advance arrangements between EASA and SIAs. This possibility is already provided in Article 12(3) of the Regulation, as highlighted in the Relevance section. No use of the possibility to conclude such arrangements between EASA and SIAs has been made to date.

This evaluation did not receive other feedback on the application of this Article and its effectiveness in clarifying EASA's role in the investigation. It therefore cannot draw firm conclusions on the effectiveness of the Regulation to clarify the role of EASA in safety investigations.

5.2.3 Protection of sensitive safety information

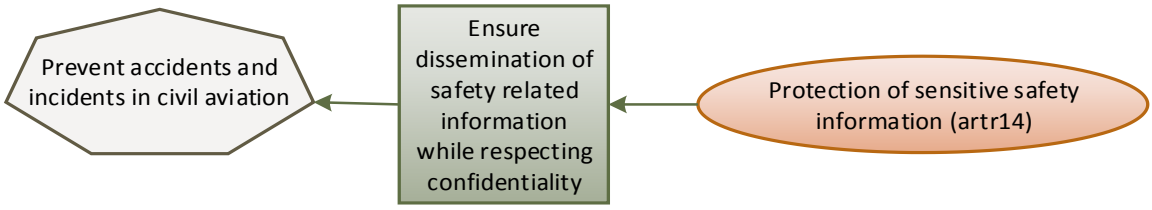

Figure 4: the role of the protection of sensitive safety information in the prevention of accidents and incidents in civil aviation

The protection of sensitive safety information is crucial to the future availability of safety information and therefore to the prevention of accidents (see Figure 4). In the case of civil aviation accident investigations, the aim is to collect all possible information as quickly as possible without however apportioning blame or liability. In order to do so, a high level of trust among all investigation participants must be maintained. The Regulation imposes clear rules on the matter. It notably provides for the conditions under which the information can be shared with others and prevents certain information from being made public. Out of 40 respondents to the targeted survey 29 agreed that the provisions of the Regulation on the protection of sensitive information have positively affected the safety investigations.

The custody of sensitive safety information, including evidence, falls on different parties depending on the Member States. In some cases, the public prosecutor has the custody and the SIA can have access to relevant information. In other cases, the SIA has custody of the evidence and information and the public prosecutor can have access to it. Several national cases from the United Kingdom illustrate how the issue remains present, despite the rules on the protection of sensitive safety information introduced by this Regulation[47]

[47] The Regulation, in its Article 14, provides a list of records that "shall not be made available or used for purposes other than safety investigation". These, among others, include statements taken from persons

and by the Regulation (EU) 376/2014 on the reporting, analysis and follow-up of occurrences in civil aviation[48]. The SIA in the UK challenged the freedom of courts to use safety reports and related investigation material in judicial proceedings that aim at establishing the responsibility for the accident, but the claim has been rejected by the High Court[49]. At the same time, it should be noted that Article 14(3) of the Regulation allows for national exceptions from the sensitive information protection rules to be applied. In some Member States, courts can organise their own investigations when compensation or liability claims are involved. There are differences across Europe regarding the use of such information in judicial proceedings. As the safety investigation is independent from other proceedings, it should not be affected by parallel investigations. However, pressure comes from the public and media to share technical details with people performing parallel proceedings, particularly in judicial proceedings.

Tensions can arise from the fact that the safety investigation and the judicial investigation follows different and sometimes divergent objectives. Indeed, the safety investigation aims at preventing the accident from reoccurring and cannot apportion blame and liability whereas the judicial investigation aims at identifying the party liable and possibly compensate the prejudice suffered by the victims and relatives.

Therefore, while bringing substantial improvements on the matter, the Regulation has not removed all existing tensions between the various investigations.

5.2.4 Assistance to victims and emergency plans

by the safety investigators, documents revealing the identity of the witnesses, drafts of preliminary or final reports, transcripts from the cockpit voice records, etc. At the same time, the Regulation introduces a balancing test based on which a national authority can decide to disclose the records listed in Article 14, if it determines that the benefits of the disclosure "outweigh the adverse domestic and international impact that such action may have on that or any future safety investigation".

[48] Regulation 376/2014 lays down detailed rules on reporting, analysis and follow-up of occurrences in civil aviation. The Regulation also lays down rules on management of the information contained in the European Central Repository, where all occurrence records are stored. Direct access to the ECR is limited to the Commission, EASA, SIAs and national civil aviation authorities In its Article 10, the Regulation identifies a limited number of "interested parties" which can, under clearly defined circumstances, request the information stored in the ECR. However, in order to protect the sensitive information, especially those related to an ongoing investigation, Article 10(3) restricts the access even further, providing that such information "shall not be disclosed to interested parties".

[49] https://www.icao.int/safety/airnavigation/AIG/Database2Docs/Rogers%20v%20Hoyle%202013.pdf.

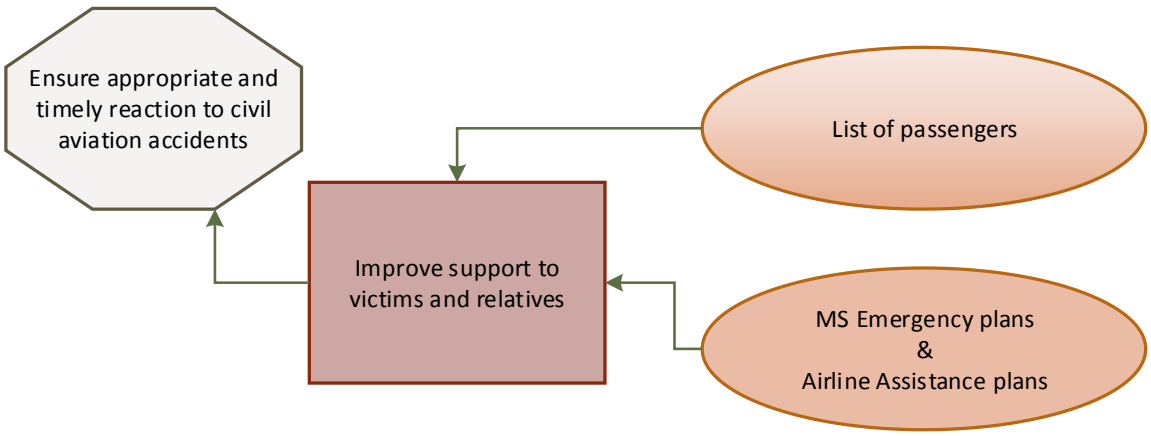

Figure 5: aspects contributing in improving support to victims and relatives

Major accidents have shown that the information that airlines have regarding the presence of passengers on board may not always be accurate. Consequently, the relatives of victims or the States of origin of the passengers have not always been contacted on time. To remedy this situation, the Regulation requires the airlines to offer passengers the possibility to give the name and contact details of a person to be contacted and notified in the event of an accident. This is an improvement, compared to the situation before the Regulation 996/2010, as an increasing number of airlines collect the emergency contact information from their passengers.

Concerns were raised by stakeholders (SIAs, CAAs and representatives of the aviation community) when it comes to the interpretation of these provisions. Although Articles 20 and 21 clearly address the airlines (as regards the obligation to provide information on persons and dangerous goods on board) and the Member States (as regards the obligation to ensure that relevant procedure for the assistance to the victims are put in place by airlines), they are frequently misinterpreted. They are understood as if it was for the SIAs to provide information on persons and dangerous goods on board and to assist to the victims of air accidents and their relatives and not the Member States.

In addition, the Regulation imposes on the Member States an obligation to establish a civil aviation accident emergency plan at national level that shall cover assistance to the victims of civil aviation accidents and their relatives. When it comes to the emergency plans at national level, the field research conducted in the context of the support study underlines that not all Member States have established such plans. Less than half of the respondents to the targeted survey consider that accident emergency plans have been implemented. To remedy this situation, the Commission has taken an initiative to establish common emergency plan guidelines.

Geographical location and language also become issues when authorities have to deal with victims and relatives from different countries and backgrounds. Progress has been made by the Regulation in addressing issues and challenges related to the assistance of victims and their relatives, with a focus on informing victims and relatives during the initial phases of the investigation. ENCASIA published a leaflet to inform victims and

their relatives about the safety investigation. A benefit of the Regulation is the appointment of a national contact responsible for the communication with relatives.

5.2.5 Conclusion on effectiveness

Overall, most of the identified shortcomings that hamper the achievement of objectives relate to an improper or incomplete implementation of the rules. While the quality of safety investigation has generally improved since the entry into force of the Regulation, the lack of sufficient resources remains present especially for smaller SIAs. The Regulation has helped to provide better investigations and to improve the follow up of safety investigations. No firm conclusions can be drawn on the effectiveness of the Regulation to clarify the role of EASA in safety investigations. In the sphere of the protection of confidential information collected during the investigation the practice remains inconsistent as to the use of such information in the various domestic court proceedings. Such situation is a result of the national exceptions made possible by the Regulation.

5.3 Efficiency

The third evaluation criterion is efficiency, aiming at assessing to what extent the resources and costs incurred are proportional to the results achieved; to what extent the distribution of the costs over the different stakeholders is proportionate; and to what extent additional administrative tasks that have been generated by the Regulation are proportional to the objectives.

It is generally considered that the benefits arising from the Regulation go together with the decreased level of risk in the occurrence of aviation accidents

The European Commission, EU Member States, Eurocontrol, EASA and industry have numerous (coordinated) activities to further improve safety. Although the average annual number of accidents has significantly dropped (see Table 1) demonstrating continuous safety improvements, it is not possible to conclude to what extent the Regulation contributed to these improvements.

On the compliance costs side, the support of European Commission, as presented above, has amounted to EUR 1.9 million over the period from 2011 to 2017. In the same period, according to the data provided in the support study, the Member States have spent EUR 1.4 million to comply with the Regulation. SIAs assumed additional administrative tasks, namely the preparation of advance arrangements, the development of procedures of recording and implementing responses to the safety recommendations, development of plans for the assistance of victims and relatives, ENCASIA meetings logistics, peer reviews and training. All these tasks have added up to a total estimated cost for SIAs amounting to EUR 3.3-4.7 million between 2011 and 2017.

In total, the costs for the Regulation are estimated as EUR 6.3-7.7 million for the period 2011-2017 as summarised in Table 2, i.e. an average of EUR 1.1 million per year.

European Commission	1.9 million
Member States	1.4 million
SIAs	3.2 million – 4.7 million
Airlines	Negligible[50]
Total	**6.3 – 7.7 million**

Table 2: Overview of the estimated costs per stakeholder category for the period 2011-2017 Stakeholder category Costs (EUR) (Source: Support Study)

On the benefits side, the support study assumed an average value for life of EUR 2.1 million[51] and an overall value of saved accidents between 2010 and 2017 that amounts to a total of EUR 202 million per year for commercial air transport and general aviation combined.

Considering that costs of the Regulation are estimated to be on average of EUR 1.1 million a year, it can be argued that the benefits of the Regulation i.e. EUR 202 million per year, would exceed its costs even if only 0,6% of the prevented fatalities were attributed to the Regulation.

5.4 Coherence

The fourth assessment criterion is coherence, which assesses whether the Regulation is internally coherent and consistent with, complementary to, and non-contradictory to the EU Aviation Safety Policy and regulations, as well as other EU instruments and rules such as human rights and data protection rules. This subsection aims at understanding how well the different provisions work together and whether there are conflicts between the Regulation and other types of legislation.

The Regulation, while including provisions related to the protection of sensitive safety information and the conditions under which it can be shared with those who ask for it, ultimately leaves to the Member State the final decision on the possibility to disclose safety sensitive information. The decision to disclose sensitive safety information protected by the Regulation therefore depends on a balance test to be made on a case-by-case basis in each Member State. ENCASIA repeatedly insisted on the need to do an inventory of existing national practices on the use of sensitive information collected in the context of an accident investigation by Courts. SIAs recalled that the strict application of rules on confidentiality is a prerequisite for ensuring that valuable sources of information are made available in future investigations.

On aviation safety policy and relevant EU regulations, SIAs have noted that both Regulation (EU) No 996/2010 and Regulation (EU) No 376/2014 on occurrence

[50] Airlines representatives have indicated in a separate interview that the main 'cost category' for them – providing information to victims and families – was already an obligation under the ICAO guidelines and thus does not represent an additional cost as such.

[51] Based on a Value of a Statistical Life (VOSL).

reporting in civil aviation provide an obligation to report accidents and serious incidents. In some cases double reporting could be required if the same occurrence is subject to the mandatory reporting obligation under Article 4(6) of Regulation 376/2014. SIAs perceive a lack of harmonisation and ask to clarify who should report what to whom. The consultation also highlighted that reporters might not have the capacity to determine whether an occurrence is a serious incident or an accident. Only the SIA will be able, upon initial investigation, to classify the occurrence.

It should be noted that reporting in the context of Regulation 996/2010 and Regulation 376/2014 follows different purposes. The former intends to inform the SIA so that the investigation can start without delay and necessary safety lessons are to be drawn. The latter usually aims at informing the organisation of the reporter (e.g. the airline, the ANSP, the airport) so that it can feed its safety management system and necessary actions can be taken without delay within the organisation.

In 2016, the EU has adopted the General Data Protection Regulation (GDPR)[52]. The objective of this new set of rules is to give citizens back control over their personal data, and to simplify the regulatory environment for business. The EU also adopted the Passenger Name Record (PNR) Directive.

The respect of the right to personal data protection in the context of the transfer of PNR data is, amongst others, the subject of Opinion (1/15) of the Court of Justice. The opinion concerns the agreement between the Union and Canada on the transfer of PNR data from European air carriers to Canadian authorities in order to prevent and detect terrorist offences and other serious transnational criminal offences. The opinion was requested by the European Parliament, which requested the Court to consider the compatibility of said agreement with the provisions of the Treaties (Article 16 TFEU) and the Charter of Fundamental Rights of the European Union (Articles 7, 8 and Article 52(1)) as regards the right of individuals to the protection of personal data. In its Opinion, delivered on 26 July 2017, the Court of Justice noted the objective of the agreement, which was to ensure public security in the context of the fight against terrorist offences and serious transnational crime. The Court noted, on one hand, that such objective is an objective of general interest. On the other hand, the Court concluded that the transfer of PNR data constitutes interferences with the right to private life guaranteed in Article 7 of the Charter and the right to the protection of personal data guaranteed in Article 8 of the Charter. While the interferences are capable of being justified by an objective of general interest of the European Union, this is only in so far that such interference are limited to what is strictly necessary and proportionate in line with the criteria set out in Article 52 of the Charter. The Court concluded that several provisions of the agreement were not limited to what was strictly necessary and they did not lay down sufficiently clear and precise rules, contrary to the requirements of the Charter. The Court reached that

[52] Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, OJ L 119, 4.5.2016, p. 1–88.

conclusion, amongst others, on account of processing of sensitive data under the agreement. According to the Court, having regard to the risks of processing, a transfer of sensitive data to Canada requires a precise and particularly solid justification, based on grounds other than the protection of public security against terrorism and serious transnational crime. Such justification was – according to the Court – lacking.

Applied to the accident investigation Regulation, this would mean that while investigations into the causes of the accident could be considered an important objective of general interest of the European Union, any interference with the rights to privacy and data protection may only take place insofar as this is strictly necessary and proportionate. The survey however highlighted that a majority of stakeholders considers that no decision has been taken at the national level to protect sensitive information and persons. This complements the statement made under point 5.2.4 on effectiveness. Finally, during the workshop participants highlighted the difficulty and need to provide further guidance on how to ensure compliance with protection of personal data while fulfilling the obligation to provide a report. No incoherence with data protection rules and human rights was found during the evaluation.

In 2018, the EU has adopted Regulation (EU) 2018/1139 of the European Parliament and of the Council on common rules in the field of civil aviation and establishing a European Union Aviation Safety Agency. According to EASA, there is a gap between the role and responsibilities it is assigned in Regulation 2018/1139 and the rights and obligations it is given in Regulation 996/2010.

In conclusion, the Regulation is considered overall coherent with other EU instruments. It would be useful to review the guidance material on Regulation 376/2014 with a view to ensure that it is consistent with the classification of occurrences in Regulation 996/2010. On the investigation of accidents and incidents involving drones it could be useful to follow the trend and to invite ENCASIA to issue further guidance.

5.5 EU added value

This subsection aims at understanding what is the additional value brought by the intervention in comparison to what would have been achieved without it - i.e. that would have otherwise been created by Member State action alone or within the context of the State obligations under ICAO.

Before 2010 Member States had to meet their obligations on accident investigations as provided in Council Directive 94/56/EC establishing the fundamental principles governing the investigation of civil aviation accidents and incidents, and under ICAO Annex 13. Regulation 996/2010 has been adopted to strengthen certain provisions of the EU rules as described above and to transpose international obligations resulting from Annex 13 into EU law. It also added the obligation of SIAs to cooperate within a network for which the Regulation identifies a limited list of activities, while the Commission supports this network.

Stakeholders confirmed that overall the introduction of additional or new requirements has led to better coordination, knowledge and resource sharing, as well as a consequent increased effectiveness of the actors, the procedures and the safety recommendations. It also allowed to clarify the requirements and in particular the roles of the Commission and EASA, and the cooperation with judicial authorities.

The reported added value of the Regulation is more noticeable in Member States that before the Regulation had fewer resources, no cooperation procedures in place, questionable independence of investigation bodies and faulty investigation processes.

All stakeholders converge on the added value created by ENCASIA, which reinforced the coordination among SIAs through its biannual plenary meetings and through peer reviews, training activities and knowledge sharing. This enhances the investigation capabilities throughout the Union.

Stricter requirements on following up the safety recommendations are provided for by the Regulation, which adds clarity and accountability. The SRIS database for safety recommendations, including those of Union-wide relevance has progressively been populated by information from SIAs and is generally considered by all stakeholders as a powerful tool to improve aviation safety. Many third countries as well as ICAO requested access to this database.

Moreover, the assistance to victims and their families is not addressed by the ICAO regime, and before the adoption of the Regulation it was not regulated at the EU level either.

Overall, the clarification of EASA's role in accident investigation, who can participate in the investigations and advise investigators is generally seen as a positive outcome. The stakeholders have suggested that EASA's involvement could be further strengthened. The feedback from the stakeholders demonstrates that the involvement of the Agency in its role as a State of Design and the State of Manufacture, as required under Article 10, had a positive impact on the quality of the investigations due to the technical expertise provided by the Agency. However, when it comes to the CAAs the majority of the Member States considers that there have not been significant changes as regards their involvement and therefore that the Regulation had no impact. It should be noted however that the Regulation does not primarily address the CAAs but the SIAs or the Member States in general.

It is therefore generally considered that EU intervention has added value and has brought benefits to aviation safety compared to a situation where the issue would be regulated by Member State action alone.

6 CONCLUSIONS

Overall, the Regulation has met the evaluation’s criteria. All stakeholders converge and insist that the objective of exchanging best practices and developing common

investigation methods and related procedures is still relevant. It contributes to improving civil aviation safety and is expected to continue doing so in the future.

Safety investigations keep a predominant role in establishing and improving aviation safety. The increasingly complex aviation systems and the expected growth in air traffic require a continued adaptation of the safety investigation process and the respective resources. As major aircraft accidents have become less frequent, an incentive to maintain an adequate level of human, technical and budgetary resources at a national level, needed for expeditious safety investigations, has become less apparent. In this context, the legal requirements in the area of the reporting, analysis and follow up of safety occurrences resulting from Regulation 376/2014, as well as the work launched at EU level, under EASA coordination, on anticipatory safety analysis based on occurrences and big data, will play an important role in the future. It is thus important to ensure that in the future the SIAs can make use of this data while contributing their experience to the analytical process. EASA and the SIAs should work more closely together in this respect.

No firm conclusions can be drawn on the effectiveness of the Regulation to clarify the role of EASA in safety investigations. The experience and knowledge held by EASA in its various roles of rulemaking, certification and oversight authority should be used wherever relevant in the investigation process taking part in or contributing to safety investigations. Misunderstandings and tensions still exist between SIAs and EASA but no clear conclusions can be drawn on whether this should be credited to a lack of effectiveness of the Regulation. Improvements could be achieved via the conclusion of advance arrangements between EASA and the SIAs, a possibility offered by the Regulation that has not been used to date.

Since the adoption of the Regulation in 2010, considerable improvements in the quality of investigation have been made in Europe. In particular, the close cooperation within the network of SIAs allowed most Member States to be better prepared for handling investigations of aircraft accidents and incidents. For most SIAs the amount of resources is considered to be sufficient for their normal activities. At the same time, it has been confirmed that in some cases, mostly in smaller Member States, the allocated resources are insufficient to handle a major accident. Solutions such as training on mutual assistance should be further explored. Therefore, the mechanisms of support as envisaged by Article 6 of the Regulation 996 should be further promoted and facilitated in order to ensure efficient and high-quality investigation of all major accidents in the future.

The quality of the safety investigations has improved across Europe through the work of ENCASIA. The improved safety investigation reports and safety recommendations have a positive impact on safety. Better safety recommendations lead to a higher probability that they are actually being implemented. While the average response time to safety recommendations is still longer than the required 90 days, there have nonetheless been tangible improvements in this area.

Independence of safety investigators remains a prerequisite of every investigation. Biased action under pressures from political or economic interests can easily hamper the

required safety improvements. During the evaluation, evidence was found that at least in one Member State such independence has not been achieved. This is why the independence criterion keeps its central role in the effective implementation of the Regulation.

ENCASIA has a large influence by strengthening the coordination between the SIAs and by introducing common practices. This has been achieved through ENCASIA's plenary discussions, various working groups, forming of opinions, sharing of experiences and lessons learned, issuing guidelines, performing peer reviews and training of air safety investigators.

ENCASIA's activities are supported through a grant from the EU which is provided on an annual basis. The annual decision to allocate the requested grant, however, does not guarantee a long term financial basis. While this grant is generally considered as an excellent return on investment, it may however be impacted by the future budgetary constraints of the EU. Therefore, it is recommended to discuss alternative funding resources. Possible synergies with other actions, such as the annual exercises for civil protection in the Member States, may be envisaged.

Advance arrangements are a pragmatic way to facilitate the cooperation between SIAs and other involved authorities, such as the judicial authorities, so that a safety investigation is not impeded by administrative or judicial proceedings. The advance arrangements enable Member States to accommodate the different national law systems. Its benefits have been recognised globally and similar requirements have been introduced in Annex 13 to the Chicago Convention. In several Member States, the advance arrangements have never been practically applied because there has not been a major accident since the arrangement came into force. Where it has been practically applied, it is considered to be an effective way of coordinating the various investigations, albeit that there have been examples where the judicial authorities were insufficiently aware of the existence or content of the advance arrangement or arrangements were established at the last moment.

The provisions on the protection of sensitive safety information helped to improve the safety investigation and support future availability of safety information, thus contributing to a higher level of aviation safety. Nevertheless, tensions remain between the need to protect such sensitive information and the demand of the public or of involved authorities, such as judiciary, to have access to protected information. In some cases, parts of sensitive safety information were made available to the public after a careful application of the balancing test contained in Article 15 of the Regulation. Given the open-ended nature of this provision, more guidance on how to carry out the balancing test would be useful.

There are differences across Europe regarding the use of safety investigation reports in judicial investigations and the subpoenaing of air safety investigators. The Regulation provides the framework for the collection and analyses of information, but it does not

prevent such information, when appearing in public, from being used in Courts. In several Member States this remains an ongoing challenge.

SIAs are regularly audited by ICAO regarding the application of Annex 13 to the 1944 Chicago Convention. To date, no oversight process exists at the Union level, and it is the Commission's responsibility to monitor the proper application of the Regulation and take the appropriate measures in case of infringement. The absence of clearly formulated oversight rules makes such monitoring difficult. The results of the peer review process and the ICAO audits have a potential of being better exploited in order to also identify deficiencies and gaps in the application of the Regulation.

Finally, in some Member States, emergency plans still need to be put in place and tested before a major investigation takes place, responsibilities of each stakeholder community need to be clearly established and known to all persons involved. In this respect, more action at national level will still be needed and a coordination with crisis management cells at Union level should be supported.

Lastly, the evaluation support study highlights the positive effects on aviation safety, which result from the combination of legally binding rules and voluntary cooperation measures promoted by the Regulation, while it also indicates the limitations of this framework, in particular as regards the expected evolution in civil aviation (traffic growth, increasing complexity of the aviation systems, etc.).

ANNEX 1: PROCEDURAL INFORMATION

1. Lead DG, Decide Planning

Lead DG: DG MOVE

Planning reference: 2016/MOVE/066

2. Organisation and timing

In 2015, the Commission, in its Communication titled "An Aviation Strategy for Europe"53, committed itself to launch an in-depth evaluation of the existing legislation on rules on aviation accident investigation.

The evaluation exercise was launched in June 2016 by establishing an inter-service steering group (ISSG). The first meeting of the ISSG took place on 8 April 2016 and discussed the detailed planning of the evaluation exercise as well as the content of a draft roadmap outlining the procedural and methodological steps to be taken. The roadmap was published for feedback for a period of four weeks. The roadmap was finalised on 9 June 2016.

Based on the roadmap and the specific requirements expressed therein, the Commission launched a call for tenders for a support study on "Evaluation of Regulation 996/2010 on investigation and prevention of accidents and incidents in civil aviation". A specific contract No MOVE/E4/SER/2016-440/SI2.743158 was signed with an external consultant ECORYS Nederland BV, COWI A/S, Stichting National Lucht-en Ruimtevaartlaboratorium (NLR) on 31 December 2016 under the framework contract No MOVE/A3/119-2013 - LOT No. 1 "AIR". The external consultant delivered the first draft of the support study on 21 July 2017. Given that the open public consultation (OPC), launched by the Commission on 5 July 2017, only ended on 4 October 2017, the results of the OPC were incorporated into the consultant's final report at a later stage. The ISSG subsequently approved the final report and it was published by the Commission54.

The evaluation study is based on the assessment of the effectiveness, efficiency, coherence, relevance and EU added value of Regulation 996/2010, and reviews the objectives of the original regulatory intervention and the performance of the intervention as compared to the initial expectations and the current situation. The study also determines whether there are overlaps with other safety-related regulatory tools.

Based on the answers received in the OPC and based on the support study produced by the external consultant, the Commission proceeded with drafting this Commission Staff Working Document (CSWD). The ISSG was consulted on the draft CSWD on 3 September 2018.

[53] https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=COM:2015:598:FIN .
[54] https://ec.europa.eu/transport/sites/transport/files/studies/2018-support-study-2010r0996.pdf .

3. Exceptions to the better regulation guidelines

No exceptions to the Better Regulation Guidelines

4. Consultation of the RSB (if applicable)

N/A

5. Evidence, sources and quality

The evaluation of Regulation 996/2010 was based on the intervention logic of Regulation (EU) No 996/2010 and a comprehensive analytical framework comprising the evaluation questions and their respective judgement criteria, indicators and information sources.

The data collection tools used to gather the relevant information consisted of a document review, stakeholder interviews, targeted survey, case studies, a workshop and an open public consultation.

The documents reviewed consisted of the EU legislation, reports and other communications, ENCASIA reports , ICAO documents, advanced arrangements concluded between the SIAs and national judicial authorities, safety recommendations, documents and reports by the national investigation authorities, national emergency plans and assistance plans to victims, and other sources, including academic articles and publications.

Interviews were conducted with the Commission (DG MOVE, JRC, JUST) officials, representatives of the following organisations: national safety investigation authorities, EASA, national civil aviation authorities, IATA, ECAC, GAMA, European Passenger' Federation,, Airbus, A4E, ECA, EBAA, ASD, IFPA and Eurocontrol Just Culture Task Force, law firm Stephenson Hardwood London, as well as the members of ENCASIA .

The targeted survey covered a representative selection of stakeholders involved in the or affected by the accident investigation in civil aviation including the civil aviation authorities, representatives of the airlines, manufacturers, accident investigation authorities, passenger' rights organisations, victims' rights organisations and air transport organisations. In total 62 respondents completed the targeted survey.

In addition, the views of stakeholders were assessed by analysing the results of an open public consultation as well as position papers of external stakeholders uploaded in the context of the open public consultation.

Furthermore, a workshop was held on 1 June 2017 with participation from SIAs, EASA, representatives from airlines and manufacturers and policy officers from the Commission. There were 41 participants in total. The purpose if the workshop was to present the preliminary findings of the support study and to obtain feedback from the participants as well as to obtain the views from the participants on the potential improvements of the Regulation 996/2010.

Four case studies were conducted on the application of the Regulation 996/2010. The case studies were selected based on the criteria of the relevance vis-à-vis the evaluation questions, falling within the scope of the Regulation, being related to Member States compliance and based on the availability of sufficient amount of details/information.

ANNEX 2: STAKEHOLDER CONSULTATION

Introduction

The objective of this synopsis is to provide an overview of the results of the stakeholder consultation carried out in order to evaluate the Regulation 996/2010 on the investigation and prevention of accidents and incidents in civil aviation. It includes a general analysis of the several methods used to reach the stakeholders, which were:

- An online survey launched on the 10th March 2017 and extended until the 14th April 2017;
- Exploratory interviews;
- Targeted interviews;
- A focus group which met on the 4th and 25th April and on the 17th May, 2017;
- A stakeholder workshop held on the 1st June 2017;
- An open public consultation launched on the 16th June 2017 until the 4th October 2017.

The goal was to assess to what extent the aim of the Regulation was achieved, through an independent and evidence-based investigation. It also gave the possibility to stakeholders to express themselves and share their opinion on the progress made in accident investigation in civil aviation since the Regulation entered into force.

Consultation activities

Online survey

Launched on the 10th March 2017, the survey aimed at reaching as many stakeholders as possible, thus 175 people were invited to participate. In order to make it simple for the stakeholders, the survey was modelled according to each stakeholder group. Six stakeholder groups were identified and broken down in Figure 1. However, stakeholders were often unresponsive to the launch of the survey and consequently the deadline had to be extended and reminders sent. There were 62 respondents to the survey (Table 1), from 26 Member States (Belgium, Bulgaria, Croatia, Cyprus, Czechia, Denmark, Estonia, Finland, France, Germany, Greece, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, and United Kingdom).

Figure 1: Distribution of the respondents to the targeted survey over the six stakeholder groups (N=62).

Stakeholder group	Survey
1.European Institutions	3
2. SIAs	25
3. Member States	10
4.Aviation Community	21
5. Law & Criminal inv.	1
6. Passengers and victims	2
Total	**62**

Table 1: participants in the survey

The participants were asked whether they agreed or disagreed that the 5 specific problems which the Regulation aimed at addressing were still present at the time of the survey. The five problems mentioned were the lack of high quality investigation capability, the tensions between safety investigations and other proceedings, the lack of clarity in the role of the CAAs and EASA in safety investigations, the weak implementation of safety recommendations, and the insufficient assistance to the victims of air accidents and their families. The overall aim of the survey was to assess to what extent the stakeholders believe that the regulation is fulfilling its original goal.

Exploratory interviews

Four experts were interviewed in consultation with the Commission. The goal was to polish the understanding of the regulation and its enforcement, as well as refine the methodology. Table 2 shows which stakeholder groups the interviewed experts were from. The interviewees were asked to assess the impact of Regulation 996/2010 and to what extent it addresses the 5 specific problems mentioned in the online survey, which the Regulation aimed at addressing.

Stakeholder group	Exploratory interviews
1.European Institutions	2
2. SIAs	1
3. Member States	
4.Aviation Community	1
5. Law & Criminal inv.	
6. Passengers and victims	
Total	**4**

Table 2: interviewed key experts

Targeted interviews

A total of 31 interviews were carried out with stakeholders, and served the purpose of obtaining detailed feedback on the Regulation (EU) 996/2010. This was made possible by keeping the responses anonymous in order to make sure stakeholders were unbiased in their answers.

Participants were selected taking into account the differences between Member States with regard to their legal framework and administrative culture, as well as the significant variation of the size of SIAs.

Stakeholder group	Targeted interviews
1.European Institutions	4
2. SIAs	10
3. Member States	4
4.Aviation Community	4
5. Law & Criminal inv.	6
6. Passengers and victims	1
Total	**31**

Table 3: participants for the targeted interviews

Focus group

A Focus group consisting of 11 experts was established in order to study stakeholders point of view and guide the study team during this evaluation. Its members provided initial specialist expertise and steering on the methodology. Three meetings were held through telephone conference during which the participants were informed about the preparations and developments of the Support Study. At the first meeting the agenda and evaluation framework for the Study were presented, as well as the four case studies for the desk research. Stakeholders considered the list of the case studies balanced.

During the second meeting on the 25th of April, the participants were asked to review the intermediate report and give feedback on the Study based on a summary of the survey and the interviews. The focus group agreed with the issues mentioned such as the independence of the SIAs, lack of resources, and vagueness over who decided to disclose information. However, the issue they were most concerned with was incoherence in the Regulation over the distinction between incident and serious incident. Timeliness of accident reports and follow-ups was also mentioned.

The third meeting served the purpose of preparing a workshop and to agree on various roles of the focus group members during the workshop. The workshop is described in the next section.

Stakeholder group	Focus group
1.European Institutions	2
2. SIAs	5
3. Member States	
4.Aviation Community	2
5. Law & Criminal inv.	2
6. Passengers and victims	
Total	**11**

Table 4: focus group participants

Stakeholder workshop

The workshop was organised by the European Commission and has as aim to present the first findings to the stakeholders and collect their views on the results of the Study, as well as feedback on how to improve the Regulation. It took place in Brussels and included 41 participants. During the break-out sessions, the participants were divided into four groups and each had to debate certain topics. The first findings were presented to the participants, and the following topics were discussed in accordance with the findings:

1. Quality of safety investigation;
2. Coherence with Regulation (EU) No 376/2014;
3. Implementation of safety recommendations;
4. EU added value;
5. Coordination with other investigations;
6. Use of sensitive information and reports;
7. Emergency plans and assistance to victims and families.

The groups were led by a focus group member and accompanied by a member of the ECORYS/NLR study team. For each topic discussed, the group had to reply to the questions presented below. Afterwards the spokesperson for each group presented the results to the other groups so as to be discussed among everyone.

1. What are the problems that need to be resolved (if any)?
2. What are the possible solutions?
3. How can the solution be achieved?

Stakeholder group	Workshop
1.European Institutions	6
2. SIAs	19
3. Member States	2
4.Aviation Community	7
5. Law & Criminal inv.	2
6. Passengers and victims	
Total	**36**

Table 5: workshop participants

Afterwards, a plenary meeting was held in order to present the conclusions of each group to the other participants. It was concluded that:

- Adding a reference to article 12(3) on "timely" would be counterproductive to the regulation;
- Cyber security is a problem which needs to be covered by the regulation;
- The way Articles 14, 15 and 16 are formulated is a good compromise with national laws and does not need to be clarified;
- Safety recommendations need to be formulated with consultancy of the addressee, which does not always happen;
- Airlines need to add the nationalities to the list of passengers.

Public Consultation

An Open Public Consultation was also launched on the 16th of June and stayed open for 16 weeks. The goal was to have further information to complete the Study solidly. In total there were 76 respondents, from 18 Member States and 4 non EU countries (see table 6). Respondents were divided between those answering in their professional capacity and those answering in their personal capacity. Out of the ones answering in their professional capacity, 11 different types of organisations were represented among them. Please see table 7 for a for a break out of the groups.

Country	Personal capacity	Professional capacity	Total
Austria	2	2	4
Belgium	1	1	2
Cyprus	1		1
Finland	1		1
France	1	2	3
Germany	2	1	3
Greece	2	1	3
Ireland	1	12	13
Italy	12	1	13
Latvia		1	1
Lithuania	1	1	2
Netherlands		2	2
Poland	1	1	2
Portugal	1		1
Romania	1	4	5
Spain	3	1	4
Sweden	1	1	2
United Kingdom	6	4	10
Switzerland		1	1
United Arab Emirates		1	1
Morocco	1		1
Iceland	1		1
Total	39	37	76

Table 6: participants by country

Type of Organisation	Number of respondents
Private Enterprise	4
Professional Consultancy, law firm, self-employed consultant	3
Trade, business or professional association	4
Non-governmental organisation, platform, or network	2
Research and academia	1
International or national public authority	5
Training academy	1
Airport	4
Airline and Aeroclub linked to airline	13
Ground handling organisation	1
Training academy	1
Total	39

Table 7: type of organisation

When asked how familiar the respondents were with the Regulation 996/2010, the majority of those replying in their professional capacity responded that they are very familiar, while those responding in their personal capacity responded that they are somewhat familiar. However, the majority believes that citizens should be better informed about the domain of investigation and prevention of accidents and incidents in civil aviation.

Respondents generally seem to trust their national authorities, even if a hypothetical major accident happened in a different country. According to their replies, this is mainly based on their perception of the national authorities' degree of expertise. The majority also replied that they do not know if the national authorities are sufficiently equipped to inform relatives of the victims.

Answer	Personal capacity	Professional capacity	Total
Very low	1	1	2
Low	3	3	6
Average	8	11	19
High	19	6	25
Very high	8	16	24
Total	39	37	76

Table 8

The majority of respondents replying in their professional capacity believes that SIAs safety recommendations are used in an efficient manner. Nonetheless, most people replying in their personal capacity either do not know, or considered that these recommendations are not used efficiently and justified their answer by referring to the lack of quality and conclusiveness of the reports (and consequent recommendations), as well as the addressees willingness to apply them.

Answer	Personal capacity	Professional capacity	Total
Yes	17	24	41
No	11	10	21
Don’t know	10	2	12
No opinion	1	1	2
Total	39	37	76

Table 9: Are SIA safety recommendation used efficiently?

Respondents were divided when it comes to the protection of data. Half of the respondents replied either that too much or too little information on technical data goes public during investigations, while the remaining respondents replied that the accurate amount of information goes public or that they have no opinion.

The same trend seems to affect the release of private information: half the respondents replied that it depends on the type of information and the circumstances, while the other half replied either that the benefits of releasing personal data never outweigh the costs, or the opposite. However, the majority of the respondents consider that airlines should request additional information from the passengers.

Answer	Personal capacity	Professional capacity	Total
Too little information goes public	10	9	19
The accurate amount of information goes public	13	15	28
Too much information goes public	11	8	19
No opinion	5	5	10
Total	39	37	76

Table 10: opinion on the amount of information going public during investigations

Answer	Personal capacity	Professional capacity	Total
Are always more significant to me	7	8	15
Are sometimes more significant to me. It depends on the type of information and the circumstances	24	16	40
Are never more significant than the protection of private data	6	9	15
No opinion	2	4	6
Total	39	37	76

Table 11: opinion on the cost-benefit of disclosing private data during investigations

An overwhelming majority is aware of the existence of emergency and assistance plans. Respondents seem to trust both their national authorities and airlines to deploy such plans. However, they expressed concern over smaller airlines not being ready to fully deploy an emergency plan.

Answer	Personal capacity	Professional capacity	Total
No I never heard about civil aviation accident emergency plans	7	5	12
Yes, I am aware of such plans	32	32	64
Total	39	37	76

Table 12: awareness of emergency and assistance plans

In sum, the participants considered that although there were improvements, there are still shortcomings to be addressed. Namely, it was mentioned that the process for accident investigation and report is too slow due to an excess of bureaucratic procedures. Respondents were also concerned with the accident investigations being, sometimes, politically and/or economically driven, and consequently not entirely independent. Furthermore, it was pointed out that there is a lack of resources for the smaller SIAs, and that smaller airlines might face difficulties in implementing emergency plans in case of an accident.

Overall conclusions and limitations

Stakeholders were hard to engage with in order to obtain answers to the survey. Some groups were not interested in participating and some Member States were unresponsive. Consequently the number of participating stakeholders was limited, although enough to reach the minimum desired number of participants. Therefore, it can be considered that the consultation gathered enough data to fulfil its aim.

Results of consultation activities

Stakeholders have provided feedback which has helped evaluate the Regulation, identify the issues and have also provided with some suggestions for improvement. These suggestions came mainly through the workshop, the focus groups and the open public consultation. In general, participants have considered that although there have been improvements, there are still shortcomings to be addressed.

Independence

The issue most frequently mentioned, especially in the open public consultation, was the independence of the SIAs, which is considered to be not always guaranteed. Respondents from SIAs and industry have noted that accident reports are often politically and/or economically driven, which affects the SIAs ability to act independently. However, at the workshop it was pointed out that full independence is not possible, as it would mean that private companies should provide for the investigations.

Quality of safety investigations

A lack of resources, mostly for smaller Member States, as well as the lack of ability of smaller and foreign airline companies to deploy the national emergency plans has been mentioned among the criteria hindering the quality of the investigations. It was suggested that more specific guidelines need to be provided in order to address these issues, as well

as formalising cooperation and resources sharing at a national and EU level. Another problem that was identified in relation to the lack of resources was the obligation of the SIAs to own a hangar, and it was proposed that the regulation be rephrased, that this obligation is removed, or that the Commission issues a guidance document to clarify that having a hangar is not an obligation. The problem of different types of training throughout EU for SIA investigators was also a concern, given that standardisation of training could become a burden for smaller SIAs.

Incoherence with Regulation 376/2014

At the workshop preoccupation was shown with incoherence with regulation 376/2014, on the distinction between incident and serious incident. Stakeholders pointed out that it is hard to understand to whom and what to report, depending on the distinction between incident and serious incident. However, it is the SIAs responsibility to decide on the type of accident. Though it could happen that an accident is reclassified as a serious accident, due to new discoveries during the investigation. The solutions proposed for this issue were mainly to improve coordination between NAAs, EASA and SIAs

Implementation of safety recommendations

It was suggested that a reference to "timely" should be added in article 12(3), in order to indicate when a response is expected. However, it is already paraphrased in the regulation and changing the text could cause confusion. On the same article, the definition of unlawful interferences was discussed, without reaching a conclusion. When it comes to the safety recommendations, it was noted that addressees are rarely consulted before they are formulated. This needs to be changed, as addressees can indicate whether the safety recommendation is identifying the right issue. However, there have been late improvements on this issue.

Added value of ENCASIA

ENCASIA is deemed to be the biggest success brought by the Regulation. It was however concluded that there is still room for improvements, especially when it comes to the role of ENCASIA and to implementation of the Regulation in the Member States. Particularly, the fact that the current financing of ENCASIA, which is brought about through grants from the Commission, is simply not sustainable, and the limited finances hinder the possibility to arrange mutual assistance when needed.

Coordination with other investigations

Advance arrangements among different authorities are not in place in every state. However, this is an issue of national competence, specifying it at an EU level could cause conflict between national authorities. Therefore, the current wording in the regulation is already a good compromise. It was suggested that ENCASIA encourages a review and signature of advanced agreements to be done frequently.

Use of sensitive information and reports

A conflict between article 14, 15 and 16 was pointed out when it comes to the requirement to protect information and the obligation to inform families of factual information. Article 16 also mentions that information can be included in the report if it is relevant to the conclusions. It is also not explicitly forbidden to call investigators to testify. As a solution it was suggested to issue a clarifying guidance, as changes in the legislation would most likely create more doubts. Furthermore, national legislation might forbid sensitive information from being disclosed in judicial proceedings. However, it was concluded that the current wording of the articles is a good compromise.

Emergency plans and assistance to victims and families

SIAs suggested that, because Member States are responsible for making sure that airlines establish emergency and assistance plans, the issue might be misplaced in the Regulation. It was also considered important for SIAs to know the nationality of the victims, which should be in the passengers list. However, this point had already been addressed in the evaluation report conducted by the Commission. Another issue that was raised was a question over what information can be disclosed to families, as there is a conflict between providing families with information while at the same time insuring the protection of sensitive information.

Use of consultation results

These consultation activities served as field research in order to provide the Commission with the stakeholders view on the achievements of the Regulation 996/2010, and to determine if the aims of the regulation have been accomplished. It collected relevant data on the stakeholders opinions, which provide insight on the shortcomings of the Regulation.

It was concluded that the Regulation requirements have brought about better safety investigations, and a consequent improvements in aviation safety. Nonetheless, further improvement is possible. The stakeholders consultation and the OPC provided valuable feedback from the stakeholders which is helpful in finding where the shortcomings are and possible solutions for how to tackle them. Although there were some issues with participation, the final results are a rich source of material to understand the achievements of the Regulation 996/2010.

ANNEX 3: METHODS AND ANALYTICAL MODELS

The methodology used during the evaluation followed respects the principles of objectivity, reliability and evidence based assessment, and complies with the requirements of the Better Regulation Guidelines . Where relevant, tools proposed in the Better Regulation "Toolbox" have been taken into account and made use of.

The following five criteria have been applied throughout the evaluation of Regulation (EU) No 996/2010 on the investigation and prevention of accidents and incidents in civil aviation and shall allow to determine to what extent the original objectives of this Regulation have been met:

The following evaluation questions have been used to carry out the tasks done in the context of the evaluation and reflection each criterion used:

Relevance

1) To what extent are the measures required by the Regulation still relevant and appropriate?

Effectiveness

2) How far did the Regulation contribute to improve aviation safety in Europe?

Efficiency

3) Have resources and costs incurred been proportional to the results achieved?

4) Have the attributable costs to different stakeholders been proportionate?

5) Which additional administrative tasks have been generated by the Regulation?

Coherence

6) To what extent is the intervention coherent with EU aviation safety policy and regulations? Are there any gaps, overlaps or inconsistencies?

EU Added Value

7) What does the Regulation add to the work on accident investigation being done by the Member States either individually or within the context of Member States' ICAO obligations?

8) What is the relevance of this Regulation for the EU safety environment, in particular as regards to the role of EASA and the aviation industry?

The intervention logic present below is a visual representation of the main objectives and the causal chain of the intervention behind the Regulation 996/2010. The intervention logic links the following main elements:

General objectives ▸ Specific Objectives ▸ Operational Objectives ▸ Inputs ▸ Outputs ▸ Results ▸ Impacts