Attachment 2 to EASA Opinion 3/2007

REGULATORY IMPACT ASSESSMENT

ON THE EXTENSION OF THE SCOPE OF THE BASIC EASA REGULATION TO THE SAFETY AND INTEROPERABILITY REGULATION OF AERODROMES

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List of acronyms

AEA	Association of European Airlines
AIB	Accident Investigation Body
AIP	Aeronautical Information Publication
AIS	Aeronautical Information Service
AMC	Acceptable Means of Compliance
ANS	Air Navigation Services
ANSP	Air Navigation Service Provider
ATM	Air Traffic Management
ATS	Air Traffic Services
CFIT	Controlled Flight Into Terrain
CRD	Comment Response Document
CS	Certification Specification
DOA	Design Organisation Approval
EASA	European Aviation Safety Agency
EC	European Commission
ECAC	European Civil Aviation Conference
ERs	Essential Requirements
ESARR	EUROCONTROL Safety Regulatory requirements
ESO	European Standard Organisations
ETSO	European Technical Standard Order
EU	European Union
FAA	Federal Aviation Administration
FSF	Flight Safety Foundation
FTE	Full Time Equivalent
GAP	Ground Accident Prevention programme
GASR	Group of Aerodrome Safety Regulators
IATA	International Air Transport Association
ICAO	International Civil Aviation Organisation
ICB	Industry Consultation Body
IFR	Instrument Flight Rules
ILS	Instrument Landing System
IRs	Implementing Rules

IS-SG	Inter-Service Steering Group
JAA	Joint Aviation Authorities
JAR	Joint Aviation Requirements
MS	Member State
MTOM	Maximum Take Off Mass
NAA	National (or Civil) Aviation Authority
NPA	Notice for Proposed Amendment
NPV	Net Present Value
OPS	Operations
POA	Production Organisation Approval
QMS	Quality Management System
RFFS	Rescue & Fire Fighting Services
RIA	Regulatory Impact Assessment
SAFA	Safety of Foreign Aircraft
SARPs	Standards And Recommended Practices
SES	Single European Sky
SESAR	Single European Sky ATM Research
SMS	Safety Management System

Executive Summary

The purpose of this Regulatory Impact Assessment (RIA) is to evaluate, from a European perspective, the potential consequences of extending the Basic EASA Regulation 1592/2002 to the safety and interoperability of aerodromes.

The present RIA builds upon the preliminary impact assessment performed in 2005 per initiative of the Commission services and upon the assessment of administrative costs carried out by the Commission services in 2006. This RIA was conducted by the Agency, according to the methodology approved by the Executive Director of the Agency, on the basis of points 3.4 and 5.3 of the Agency's Rulemaking procedure approved by its Management Board.

The present RIA estimates only the substantial (not administrative) costs. In addition it presents only very summary information on stakeholders' positions, since the latter were presented in CRD 06/2006 published by the Agency on 05 May 2007.

The RIA supports the Agency's Opinion on the matter, which in turn addresses the identified problems:

- Cost of aviation safety accidents or incidents at or near aerodromes and due to aerodrome factors, within the EU 27 + 4, is estimated in the range of 1164 Million € (2006)/year;
- In recent years ECAC recorded around 400 accidents per year, during the take off or landing phase for aircraft below 2250 Kg, often using minor aerodromes open to public use;
- The global ICAO regulatory framework is not sufficient to provide European citizens the level of protection they expect;
- The European aviation safety regulatory framework is fragmented;
- Separation of regulatory functions from aerodrome operations is not 100% clear in all EU 27 + 4 States;
- Rulemaking carried out 27 + 4 times in parallel leads to non rational use of resources.

General, specific and operational objectives, to ease the identified problems in the context of the general EU policies have been identified. Result indicators correlated to the specific objectives have been used in the present RIA.

In relation to the questions included in NPA 06/2006, five sets composed each by three alternative options have been identified and assessed in detail:

- For Question 2 on RFFS staff: option 2A (no specific regulation for RFFS staff employed in aviation), option 2B (competence scheme and medical requirements under responsibility of the aerodrome operator) and option 2C (RFFS staff licensed by competent Authority);
- For Question 3 on the scope of the future EU legislation: option 3A (only airports serving commercial air services), option 3B (all aerodromes open to public use) and option 3C (all aerodromes even if not open to public use);
- For Questions 4 and 9 on aerodrome equipment: option 4A (no specific regulation for aerodrome equipment at EU level), option 4B (common EU rules for "non standard" equipment and its design and production, plus declaration of verification signed by aerodrome operator) and option 4C (common EU rules for "non standard" equipment

and its design and production, but verification of implemented equipment integral part of the aerodrome certification process);

- For Question 7 on the certification process: option 7A (certification process for both aerodrome and its management at each site), option 7B (compulsory "single" aerodrome operator certificate, for all entities operating more than one aerodrome) and option 7C (single aerodrome operator certificate if requested);
- For Question 8 on the role of assessment bodies: option 8A (accredited assessment bodies empowered to certify simpler aerodromes or operators, on request), option 8B (accredited assessment bodies empowered to certify any aerodrome or operator, on request, even for airports serving regular commercial air traffic under IFR) and option 8C (accredited assessment bodies, not competent Authorities, empowered to certify simpler aerodromes or operators).

The three options in each set have been assessed for their impact in terms of safety, economy, environment, social impact and relationship with other regulations. Subsequently they have been compared using non-dimensional "weighted scores" through a Multi-Criteria Analysis.

Having assessed the impact of each considered option against the specific objectives of the proposed policy, the Agency in its Opinion proposes the following selected options:

- Option 3B for the scope of EU legislation on aerodrome safety and interoperability (i.e. all aerodromes open to public use subject to common EU rules), because it scored twice as better than the alternative options in safety terms; because it is the cheapest and because it could create a significant number of new qualified jobs in the private sector, inside aerodrome operators and ground handlers;
- Option 4C for the regulation of aerodrome equipment (i.e. specific rules and/or ETSOs when necessary for safety reasons; provisions for related design and production organisations; declaration of conformity of produced equipment signed by manufacturer; implementation on the site, operation or use and maintenance under responsibility of the aerodrome operator, verified during the aerodrome certification process: i.e. no separate declaration of verification on site), because it scored much better in safety terms than alternative option 4A; because selected option 4C could lay the foundations for better environmental management at aerodromes and because it could improve the quality and quantity of jobs in the design and production organisations of aerodrome equipment, while being cheaper than option 4B;
- Option 7C for the certification process of aerodrome operators (i.e. possibility of requesting, if so wished, a "single" Aerodrome Operator Certificate at company level, for operators managing multiple aerodromes and having established central functions for safety management, quality management and internal audit), because it scored twice as better than alternative option 7B, in particular in social terms, since it will neither lead to reduction of jobs, nor force any aerodrome operator to reorganize its company. In addition option 7C will also have a positive economic impact (i.e. leading to some savings);
- Option 8A for the role of assessment bodies (i.e. empowering assessment bodies accredited by the Agency, to certify least complex aerodromes and their operators, but leaving the applicants, in such cases, free to send their request to either the competent Aviation Authority or to an assessment body), because it scored at least twice as better than the alternative options, and because in particular, option 8A outscored alternative option 8C in safety and social terms, while still leading to, albeit minimal, economic savings;

- Option 2B for the RFFS staff (i.e. establishment of specific aviation requirements for their professional competence and medical fitness, to be demonstrated under the responsibility of the aerodrome operator), because it, in addition to positively score in safety terms, also in general scored about three times as better than alternative option 2C. In particular, option 2B outscores 2C in social terms, and in terms of global harmonisation.

The above proposals are also in line with the positions expressed by many Authorities/Administrations and by industry, emerged during the extensive consultations and in particular from the 3010 comments to NPA 06/2006 and the 103 reactions to the related CRD.

In summary none of the selected five options has a detrimental safety impact. On the contrary four of them (i.e. 3B, 4C, 8A and 2B) had the best score in safety terms when compared with the respective alternatives. The only exception is option 7C ("single" certificate), since in that case all the considered options were deemed to have a neutral effect on safety.

The costs associated with the extension of the competences of the Agency to the safety and interoperability regulation of aerodromes had been estimated by the preliminary impact assessment in 2005 in the range of 4.4 to 6.5 M€ (2005)/year (only for labour and overhead costs inside the Agency). In the present RIA the Agency estimated for it a direct additional cost of 3,150 k€/year, which is about 50% of the preliminary estimation mentioned above. Not surprisingly, since the latter included also ATM/ANS. The Commission services had re-estimated these costs in 2006, in about 7.5 M€/year (not only for the direct Agency's costs, but for all stakeholders assuming 1500 aerodromes in the scope of the EU legislation). In this RIA the total is estimated in about 21 M€/year (i.e. 3 M€ for additional yearly Agency's costs + the rest for the other stakeholders), which still confirms that the depth of analysis has been proportionate. It should however be recalled that the estimated cost of aviation accidents and incidents due to aerodrome factors (infrastructure, equipment, operations) in the EU 27 + 4 totals around 1,164,000 k€ (2006)/year: i.e. 125 times as much. So, should the Agency's proposal achieve only a 2% quantitative safety benefit (i.e. 23,280 k€/year) this would be in the same order of magnitude of the estimated total costs of the proposed policy.

In addition the proposed policy will also lay the foundations for possible environmental benefits in the future.

In social terms the proposed policy, besides contributing to the development of the internal market and labour mobility, might create around 530 additional jobs in the EU 27 + 4, of which 21 in the Agency, 67 in the authorities and the rest in the private sector.

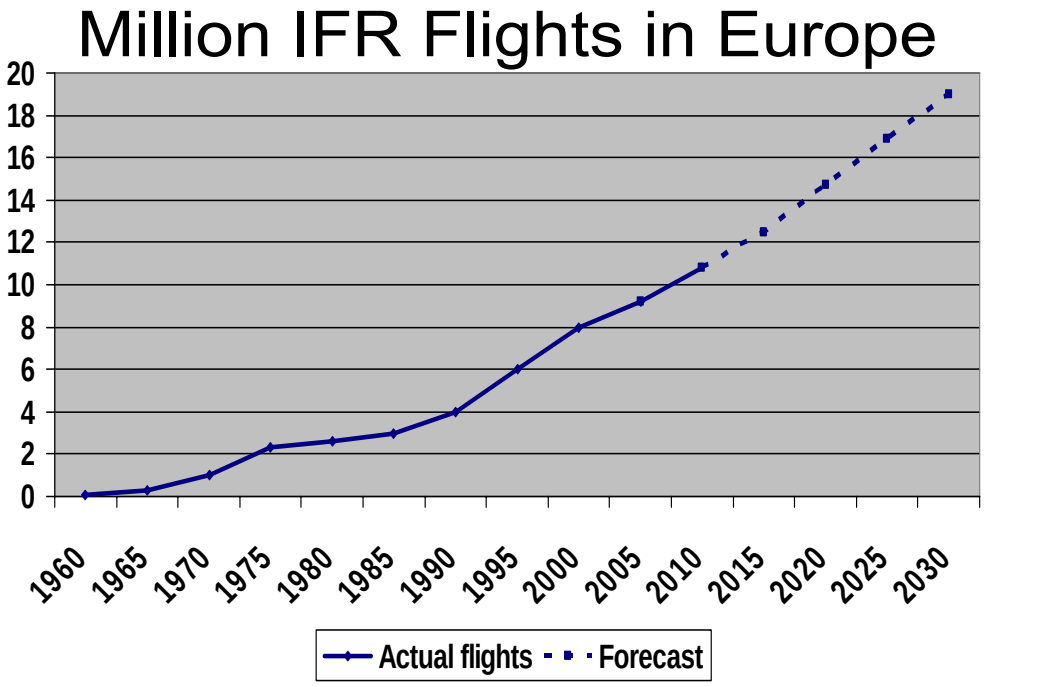
Finally, the proposed policy could also contribute to better align the safety and interoperability regulation of aerodromes, not only with the Basic EASA Regulation 1592/2002, but also with the "new approach" and with the "Single European Sky".

On the basis of this RIA, it is then considered that the extension of the EASA competences to the safety and interoperability of aerodromes is justified, in particular with regard to safety, social and economic benefits. It is, therefore, recommended that the necessary activities be initiated, in order for the Commission to submit a legislative proposal for co-decision by 2008.

1. Introduction & Scope

1.1 Evolution of the EU legislation for aviation safety

Since 1987 to 1992 the European legislator has adopted 3 subsequent «legislative packages » for liberalisation of air transport services within the internal market. This has lead to dramatic increase in the number of flights, from about 3 millions per year in the mid eighties to about 10 million nowadays. According to the EUROCONTROL long term forecast (scenario C, i.e. sustained economic growth but also more stringent environmental rules) the traffic growth is expected to continue in the next decades, as it can be seen in Figure 1:



Source: EUROCONTROL Long Term Forecast 2006-2025

Figure 1: Evolution of air traffic in Europe

This liberalisation process offered citizens more direct routes, more frequencies and lower prices. However, a "de-regulation" extended to the safety aspects, could have been detrimental for the protection of the lives of the citizens themselves. Therefore the legislator, in parallel with the liberalisation of the market, has strengthened the aviation safety regulation at Community level.

Main milestones along this road have been:

- Directive 1991/670/EEC on the mutual recognition of aviation licences;
- Regulation 1991/3922/EEC on the harmonisation of rules and for aviation;
- Directive 1994/56/EC on the establishment of "independent" aviation Accident Investigating Bodies (AIB);
- The EASA Basic Regulation 1592/2002;
- Directive 2003/42 on safety occurrence reporting;
- Directive 2004/36 on the safety of foreign aircraft (SAFA);
- The "package" of 4 Regulations (i.e. 549, 550, 551 and 552) on the "Single European Sky" in 2004, which introduced the principle of separation between providers and safety regulators even in the domains of Air Traffic Management (ATM) and Air Navigation Services (ANS);
- Regulation 2005/2011 on the "black list";
- Regulation 1899/2006 for commercial air operations (so called EU-OPS).

The two processes of liberalisation of the market and more stringent safety regulation have been like two parallel rails. Statistical data show that in average the ratio of fatalities per million IFR flights in Europe decreased from around 100 victims/million flights in the early eighties to around 10 presently, i.e. 20 years later, as depicted in Figure 2:

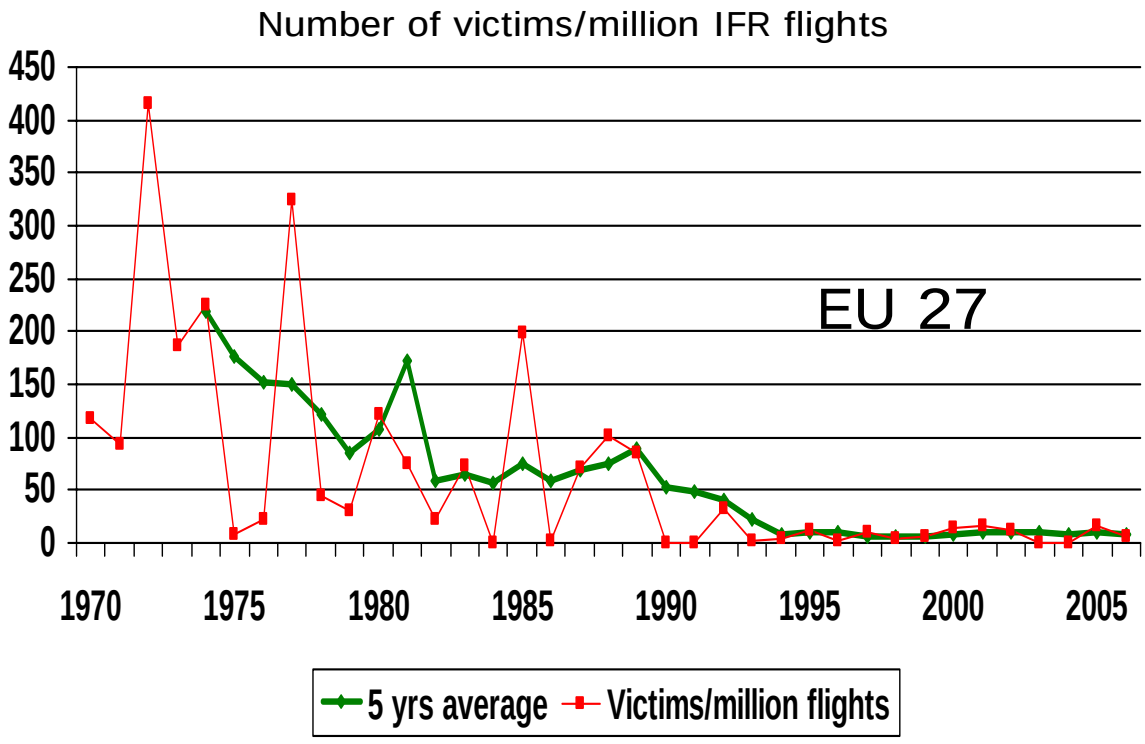


Figure 2: Decrease of the number of victims per million flights

Albeit a strict correlation among the decrease in the ratio of the victims and better safety regulation is difficult to be demonstrated with absolute confidence, still it should be noted that the two parallel processes brought to citizens, in general, significant benefits both in terms of offers available on the market and safety levels.

Then it should be highlighted which aviation domains are already in the scope of common EU rules or in the scope of the Agency, in order to identify potential gaps. Table 1 lists the said domains:

Domain	In the scope of EU rules	In the scope of EASA	
		Basic Regulation in force	1st extension of the Basic Regulation[1]
Airworthiness	X	X	
Commercial Air Operations	X		X
Non commercial Air Operations			X
Flight Crew Licensing			X
Safety of Foreign Aircraft (SAFA)	X		
Safety of foreign operators			X
Black list	X		
Aerodromes	**G A P**		
ATM functions (i.e. Flow Management and Airspace Management)	X		
Air Traffic Services (ATS)	X		
Liberalised Air Navigation Services (COM, NAV, SUR, AIS)	X		
Safety data collection and analysis	X		X
Independent Accident Investigations	X		

Table 1: Aviation safety domains in the scope of EU common rules

From the table above it should be noted that the only aviation domain in which common safety rules are today not established at EU level is the aerodrome domain.

It can also be observed that, within the much reduced number of fatal accidents occurred to commercial aviation within EU in the last decade, indeed some catastrophic ones occurred on the aerodrome (e.g. Linate, 08 October 2001).

1.2 Scope of present Regulatory Impact Assessment

Scope of present paper is then to analyze the impact of possible Community action for the regulation of safety and interoperability of aerodromes. More in particular:

- For the economic impact assessment only the substantial costs are considered, since the administrative ones have been assessed by the Commission services;
- Stakeholder positions/replies are not fully analyzed herein in detail, since they have been summarized in the Comment Response Document (CRD 06/2006) published on the Agency web site on 05 May 2007. So only some summary data stemming from stakeholders' consultation are presented in this RIA, when relevant.

[1] As put forward by EC legislative proposal COM 579 of 16 November 2005 and presently under co-decision process.

1.3 An iterative process for impact assessment

1.3.1 "Better Regulation"

According to the principle of "better regulation" EASA shall carry out a proper Regulatory Impact Assessment whenever producing an Opinion. The same principle mandates the Commission to produce itself an impact assessment when submitting to the legislator any proposal.

Having identified the problem as reflected in sub-paragraph 1.3.2 below, the work has been organised trying to reduce duplication of effort. The Commission has therefore carried out a preliminary impact assessment and an assessment of the administrative costs, while the Agency has produced the present document.

The following sub-paragraphs in this Chapter 1 provide summary information, for ease of reference, on the work already carried out, as well as on the following steps of the impact assessment process.

1.3.2 Identification of the problem

In Europe commercial aviation safety dramatically improved from the early 1970's (i.e. about 200 victims per million IFR flights) to around 1995 (i.e. down to about 10 victims/million IFR flights) as highlighted above. Since then however, despite significant technological improvements, the mentioned sad rate remained almost constant. To further reduce the rate, it is therefore necessary to act not only on technology, but also on other aspects of the "safety chain". In particular the following main problems should be addressed in the aerodrome domain:

- Non uniform application of ICAO Standards within Member States (any difference can be notified; legal texts always differ and enter into force at different dates);
- Non uniform application of ICAO recommendations (non mandatory);
- Non uniform and non synchronized implementation of improvement measures adopted by European intergovernmental aviation entities (e.g. EUROCONTROL);
- Need to ever increase safety levels in the face of continuing air traffic growth foreseen for the next decades (i.e. about +3% per annum);
- Need for a "total system approach" encompassing the airborne and ground segments (i.e. considering the departure and arrival routes, in relation to local obstacles, an integral part of aerodrome safety at the level of essential requirements and the turn-round an integral part of the cycle of aviation operations), as well as people and organisations and their respective organisational interfaces, of particular relevance for aerodrome safety, where different actors (e.g. aerodrome operators and ground handlers) carry out different operational tasks;
- Fragmentation of aviation safety rulemaking at European level (Member States, Group of Aerodrome Safety Regulators – GASR, etc…), which in particular leads to waste of resources for 27 parallel legal transposition processes for rulemaking, while ways and means to consult stakeholders are heterogeneous.

1.3.3 The Preliminary Impact Assessment

A preliminary impact assessment has been carried out in 2005 by a consultant contracted by the Commission. The full report can be consulted on: http://ec.europa.eu/transport/air_portal/traffic_management/studies/doc/finalized/2005_09_15_atm_en.pdf . The study concluded that indeed extending the competences of EASA was the

most logical, effective and efficient option. In particular, according to the opinion of the consultant company, the extension of EASA would produce notable safety benefits, especially when compared with the "do nothing" option.
In addition, the cost of extending the EASA competences to aerodrome safety, Air Traffic Management (ATM) and Air Navigation Services (ANS) was estimated, by the said consultant, in the range of:

- 4.4 to 6.5 million€/year (€ 2005) in the case of extending the Agency's mandate and quantifying only the Agency costs (i.e. for the other stakeholders only qualitative considerations had been provided by the consultant);
- 4.6 to 6.9 million€/year in the case of extending the EUROCONTROL's mandate, which had been one of the alternative options assessed;
- 7.5 to 8.6 million€/year in the case of creating a totally new Community Agency for regulatory tasks in the considered domains.

It is worth to note that the said preliminary assessment used generically the term "airport", as in EC Communication 578 of 15 November 2005, while not even attempting to quantify the number of affected entities. This was appropriate in the frame of a preliminary study. Subsequently the Agency, having noted that "airport" includes typically also the passenger terminal[2], while both ICAO Annex 14 and the Group of Aerodrome Safety Regulators (GASR) use the term "aerodrome", in order to restrict the perspective to aviation safety, has elected indeed to use the term "aerodrome" since the publication of NPA 14/2006. This choice has been supported by stakeholders.

1.3.4 Evaluation of the administrative costs

Administrative costs, also known as overhead or indirect costs, are those that are incurred for common objectives and cannot be identified readily and specifically with a particular sponsored project. According to the guidelines issued by the Secretariat General of the Commission, the administrative costs should be assessed on the basis of the average cost of the required action (Price) multiplied by the total number of actions performed per year (Quantity). The average cost per action will be estimated by multiplying a tariff (average labour cost per hour including prorated overheads) and the time required per action. The quantity will be calculated as the frequency of actions multiplied by the number of entities concerned.

Core equation of the cost model

Σ P x Q

where P (for Price) = Tariff x Time

and Q (for Quantity) = Number of entities concerned x Frequency.

The Commission services (DG-TREN in coordination with the established Inter-Service Steering Group for the matter) in 2006 have then carried out some cost calculations following the step-by-step procedure "Assessing Administrative Costs Imposed by Legislation", included in Annex 10 of the updated European Commission's Impact Assessment Guidelines[3]. The said calculations however included not only the administrative costs, but also the direct or substantial costs (e.g. rulemaking to be performed by the Agency and certification costs for aerodromes) stemming from the possible legislative proposal. The chosen option (i.e. extension of EASA to aerodrome safety) was compared by the Commission with the "status quo" (i.e.

[2] Article 2 of Council Directive 96/67/EC of 15 October 1996 on access to ground handling market at Community airports. (*Official Journal L 272, 25.10.1996, pages 0036-0045*).
[3] European Commission, Impact Assessment Guidelines, 15 June 2005 with 15 March 2006 update, Brussels, SEC (2005)791.

"Do Nothing"). For this purpose the Commission has followed a simplified approach to gather data, as justified by the nature of the initiative (aerodrome certification is already an ICAO obligation largely implemented by the States) and by the total estimated cost in the order of magnitude of 10 M€/year for the total EU society. A more complex mechanism for data acquisition would have been disproportionate.

Statistical data available from either EUROSTAT or EUROCONTROL had been used, as well as information from the web (e.g. site of the OAG, a travel information company, also serving world-wide air carriers for their route developments), the working draft (dated August 2006) of the ICAO EUR Air Navigation Plan, volume I, appendix to Part III and the EUROCONTROL AIS data base, containing a list of the public use aerodromes (consulted on the 31st of August 2006). Additional information was also provided by the members of the Group of Aerodrome Safety Regulators (GASR).

In conclusion the Commission services assessed the total (administrative & substantial) costs of extending the competences of EASA to safety and interoperability of aerodromes, for the Agency itself and for the other stakeholders, as presented in the following summary table 2 in € (2006):

€ (2006)/year

WORST CASE (i.e. 1500 aerodromes; 2 rulemaking FTEs/State)	***"Do nothing"***	***Extend the task of EASA to aerodrome safety regulation***
Substantial costs	8,335,043.20	6,539,997,60
Administrative costs	1,081,908.00	925,843,20
TOTAL COST	***9,416,951.20***	***7,465,840.80***
Difference		***- 1,951,110***

Table 2: Cost of EASA extension to aerodromes, according to the Commission services

In other words centralizing the safety regulatory responsibility at EASA will bring, in the opinion of the Commission services, a slight economic benefit to European citizens, thanks to economies of scale and rationalization of the work, in the range of almost 2 M€ (2006)/year.

Finally the Commission services carried also out a sensitivity analysis in order to highlight the economic relevance of the two major parameters driving the total cost, i.e.:

- the number of Full Time Equivalents (FTEs; 1 FTE = 1 man/year);
- the number of aerodromes in the scope of the proposed EU legislation.

The Commission services, having stated that their assessment could be revised once more information from EASA would be available, at that time assumed 12 FTEs in EASA dedicated to rulemaking and standardisation, while assuming that in average 2, 4 or 6 FTEs would continue to be employed for rulemaking at national level in the "Do Nothing" scenario. For the aerodromes, the sensitivity analysis assumed the values of either 500, 1000 or 1500. The results are shown in the following table 3, from which it can be observed that, according to the Commission services, even in the most expensive considered case (i.e. 1500 aerodromes in the scope of the EU legislation and only 2 FTEs/State used today for rulemaking) extending EASA would be cheaper than maintaining the present situation:

M€/year

N. aerodromes in the scope of the legislation	*Option*	*Rulemaking average FTEs/State*		
		2	***4***	***6***
500	DO NOTHING	*5.159*	*8.010*	*11.101*
	EASA EXTENSION	*3.372*		
1000	DO NOTHING	*7.288*	*10.139*	*13.230*
	EASA EXTENSION	*5.524*		
1500	DO NOTHING	***9.416***	*12.268*	*15.300*
	EASA EXTENSION	***7.465***		

Table 3: Sensitivity analysis carried out by the Commission services

The assessment of the administrative (and substantial) costs carried out by the Commission services, was indeed based on a number of assumptions. The study then concluded that some of these assumptions could need to be refined, once the Commission will have received the Agency's Opinion on the matter. It is therefore possible that the Commission services may want to revise their estimations, before putting forward a legislative proposal.

1.3.5 The present RIA

The present Regulatory Impact Assessment (RIA), building upon the two studies summarized in 1.3.3 and 1.3.4 above, is presented in detail in following Chapter 2. Any further assumption or consideration contained in that Chapter is under the responsibility of the Agency. In particular since the number of "aerodromes" is greater than the number of "airports" (the latter serving commercial air transport), particular attention has been devoted to assess the potential impact of the scope of the future legislation.

Such a RIA has been conducted following the methodology approved by the Executive Director of the Agency, on the basis of points 3.4 and 5.3 of the Agency's Rulemaking procedure adopted by its Management Board.

It should be reminded once more that, differently from the Commission study in 1.3.4 immediately above, the present RIA only considers the substantial costs and not the purely administrative costs (e.g. workstations for employees, photocopying, filling forms, mailing, etc).

1.3.6 The final Impact Assessment

It will be responsibility of the Commission services to summarise the preliminary assessment mentioned in 1.3.3 above, their assessment of the administrative costs and the present RIA, when proposing to adopt the legislative proposal on the matter.

2. Regulatory Impact Assessment

2.1 Approach to impact assessment

2.1.1 Qualitative and quantitative assessment

A Regulatory Impact Assessment (RIA) is an evaluation of the pros and cons of an envisaged rule or modification to legislation, taking into account various possible options to reach the expected social goal (i.e. more effective and efficient safety regulation of aerodromes), while quantifying as much as feasible their impact on all categories of affected persons.

It shall be proportionate to the likely impact of the proposal. These impacts shall be analysed from different perspectives (items). Therefore this RIA, affecting the aviation sector and in particular the aerodromes, considers in particular the following items for impact assessment:

- safety;
- economy;
- environment;
- social;
- and impact on other aviation requirements outside of the EASA scope.

More in particular the impacts listed above have been assessed qualitatively or quantitatively, as presented in Table 4:

Assessment	IMPACT					
	Safety		Economy	ENV	Social	Impact on other aviation requirements
	Past	Future impact				
Quantitative	X					
Coarse quantitative		X	X		X	
Qualitative		X	X	X	X	X

Table 4: Qualitative and quantitative impact assessment

Each of those 5 items for impact assessment will be reviewed individually in § 2.6 to 2.10 below.

2.1.2 Assessment methodology

The applied methodology for impact assessment is structured in 6 steps:

- Problem analysis described in following paragraph 2.3;
- Definition of objectives (general, specific and operational) and indicators as presented in paragraph 2.4 below;
- Identification of alternative options for the main issues emerged from the consultation (i.e. scope of Community legislation; regulation of aerodrome equipment; certification process; role of assessment bodies and regulation of RFFS staff) in paragraph 2.5;
- Identification and estimation of the size of the target group;
- Identification and assessment of impacts of each possible option for all 6 items listed in 2.1.1 above, in order to determine the most significant ones;
- Conclusive Multi-Criteria Analysis (MCA).

The possible impacts are highly correlated with the general and specific objectives identified in 2.4.2 and 2.4.3 below. Their measurement is based on the monitoring indicators (outcome and result indicators) presented in paragraph 2.4.5 below. However the indicators related to the general objectives, could be influenced very significantly by other policies. Therefore it is not proper to consider them when assessing the impact of the proposed extension of EASA to aerodromes.

So the main use of the general objectives is to support the definition on the specific objectives, for the proposed policy. The result indicators correlated to them will be used in the present RIA as appropriate, while they could also be used in the future for mid term reviews.

Finally the operational indicators in paragraph 2.4.5 below are not utilized for the present RIA. Nevertheless they could be used by the Commission to continuously benchmark the progress of the proposed initiative.

After all impacts for each main issue and each related policy option have been identified, in relation to the said specific objectives, the results are presented in summary in an impact matrix in the conclusive sub-paragraphs in 2.6 to 2.10 below. The procedure to develop such a matrix is the Multi-Criteria Analysis (MCA), carried out through the following detailed steps:

- Identification of the specific objectives, which are applicable for all the proposed alternative options;
- Correlation each option to the potential items of impact which are relevant, in order to allow the comparison of the options;
- Establishment of measurement criteria (through the result indicators) - at least in qualitative terms and where possible in quantitative terms (in the latter case taking into account the size of the target group);
- Scoring how well each option meets the criteria, expressing each impact, whether measured quantitatively or assessed qualitatively, in a non-dimensional ranking ("score"): i.e. -3 for very negative impact, -2 for medium negative, -1 for little negative impact, 0 for neutral impact and up to +3 for positive impacts;
- Assigning "weights" to each impact item to reflect its relative importance: weight 3 has been assigned to safety and environmental impacts; 2 to economic and social impacts and 1 to impact on other aviation requirements;
- Finally compare the options by combining their respective weighted scores.

2.2 Organisation of the process

2.2.1 Inter-Service Steering Group

The report on the preliminary impact assessment mentioned in paragraph 1.3.3 above, was finalised by the consultant in September 2005. Then the Commission announced its intention to progressively proceed towards the extension of the EASA's system[4].

Therefore Unit DG-TREN F3 (Aviation Safety and Environment), in January 2006 formed an Inter-Service Steering Group (IS-SG) for the ex-ante evaluation/final impact assessment on the extension of the competences of the European Aviation Safety Agency (EASA) to Air Navigation Services (ANS), Air Traffic Management (ATM) and aerodromes, with the following tasks:

- Reviewing the preliminary assessment carried out by a contractor and advise whether further more detailed options should be considered along the proposed way forward;
- Facilitating access to information in order to finalise the study;
- Supporting the person in charge of the evaluation, especially for the risk assessment and the cost estimation, once the details of the EASA's opinion will be known;
- Monitoring the work and validating results;
- Taking part in the meetings;
- Taking part in the qualitative appraisal of the evaluation;
- Ensuring dissemination of the conclusions and recommendations.

In addition to other Units of DG-TREN and the Agency, also other Commission services are participating to the said IS-SG, such as: SEC GEN, Service Juridique, DG ENTR, DG ENV and DG BUDG.

The Kick-off meeting took place on 20 March 2006, followed by regular meetings, the 6th of which took place on 21 March 2007. The 7th meeting will be scheduled to present this RIA to the members of the IS-SG by EASA.

So far the members of the IS-SG have provided basic technical and cost information mainly for developing the assessment of the administrative costs carried out by DG-TREN, in which they were fully involved not only through meetings, but also through revision of documents by mail.

It is expected that the IS-SG will not only comment the present RIA and subsequently endorse the final impact assessment compiled by DG-TREN, but that it will continue its activity, also to conclude the impact assessment on the extension of EASA to ATM and ANS.

[4] COM (2005) 578 final of 15 November 2005.

2.2.2 Consultation of stakeholders

A structured and iterative consultation of the stakeholders (in addition to mails and informal exchanges) has been carried out via thirteen mechanisms so far, as summarised in Table 5 below:

N.	Responsible	Consultation period	Target Group	Mechanism	Results
1	ECORYS	Mid 2005	More than 70 selected stakeholders	Questionnaires	56 received. Summary of replies in the ECORYS report
2	ECORYS	Mid 2005	25 key stakeholders	Interviews	Summary of replies in the ECORYS report
3	EASA	Dec 2005	Advisory Group of National Authorities (AGNA)	Consultation on EASA annual rulemaking plan	Task BR 002 approved
4	EASA	Dec 2005	Safety Standards Consultative Committee (SSCC)		Task BR 002 approved
5	EASA	Dec 2005	AGNA	Consultation on ToRs for task BR 002	ToRs published
6	EASA	Dec 2005	SSCC		ToRs published
7	EASA	May to Oct 06	Public through web consultation	NPA 06/2006	3010 comments received by 1850 respondents. CRD published
8	EASA	May to Jul 07	Public through web consultation	CRD 06/2006	103 reactions received by 15 stakeholders. Taken into account for the Opinion
9	EASA	Since early 2006	Aviation Authorities	Presentations to GASR WG	Constant attendance and debate at meetings
10	EASA	Dec 2006	Aerodrome stakeholders	Presentation to ACI Europe "Airport Exchange"	Presentation delivered
11	EASA	June 2007	British aerodrome stakeholders	Presentation to AOA Ops and Safety Conference	Presentation delivered
12	EASA	June 2007	Austrian, German & Swiss aerodrome stakeholders	Presentation to ADV Infrastructure & Technology Committee	Presentation delivered
13	EASA	Sept 2007	Aerodrome stakeholders	Presentation to ACI Technical Committee	Presentation delivered

Table 5: Consultation of stakeholders

In particular the results of both the interviews and the questionnaires under the responsibility of the consultant (i.e. ECORYS) hired by the Commission, had been used to develop and substantiate the analysis done on the various topics during the preliminary impact assessment, such as problem analysis, assessment of impacts and comparison of options. In each of the main chapters of that study, the stakeholders' views have been presented in a separate section. Furthermore, a detailed analysis of the results of the questionnaire was provided in Annex B of said document. Stakeholders had been identified through their membership in the Board of EASA, or as being significant stakeholders in the ICB (Industry Consultation Body), representative of relevant international organisations. In addition also a sample of ANSPs and aerodrome operators had been consulted.

Successively the Agency, as mandated by its rulemaking procedure, has consulted twice AGNA and SSCC respectively on the inclusion of task BR 002 in the rulemaking plan and then on the detailed ToRs for its progress. Since 2005 EASA has also spared no effort for liaising not only with the competent Authorities, but with all aerodrome stakeholders, and in the first place with their representative associations. This constant effort has contributed to the quantity and quality of comments received on the NPA 06/2006. In particular 3010 logged comments came not only from more than 1750 individuals, but also from 91 relevant aviation stakeholders, as presented in Table 6:

Authorities	Aerodromes	Airspace users	ANSPs	Industry
Austria (Christian Marek)	Aberdeen	AEA	DFS	Airbus
Belgium	ACI Europe	AOPA Italy	Bundeswehr ATS Office	British Helicopter Advisory Board
Denmark	ADV (German Airport Ass.)	AOPA Norway	EURO CONTROL	ECA
Czech Republic	Avinor	AOPA UK		Helicopter Museum
Estonia	BAA Central Airside Operations	APAU		IFATCA
Finland	Bickerton's Aerodromes	Air League		International Fire Training Centre
France	Birmingham	Association Aerotourisme		Squirrel Helicopters
Greece	British AOA	Association MosAiles		
Germany	Dublin	Belgian Gliding Federation		
Hessian Ministry of Economics, Transport, & Development	Dutch Airport Association	British Gliding Association		
Iceland	Exeter & Devon	British Hang Gliding & Para Gliding Ass.		
Ireland	Finavia	British International		
Italy	Fraport AG	Centre ULM Européen		
JAA Ops procedure group	Glasgow	Club Aero ULM Berch		
Netherlands	Gloucestershire	Club ULM		
Norway	Guernsey	Danish Ultralight Flying Association		
Romania	Heathrow	Deutscher Ultralightflugverband		
Slovak Republic	Humberside	ECOGAS (BBGA)		
Slovenia	Luton	EGU		
Spain	Lyon	Europe Airsports		
Sweden	Manchester	FSSLA Federation		
Switzerland	Nottingham E.M.	GAAC		
UK	Prague	KLM		
USA (FAA)	Schiphol	Helicopter Club GB		
	Schweizer Flugplatzverain	IAOPA		
	Teuge	Popular Flying Ass.		
	UAF	Reseau Sport de l'Air		
		Swiss Aero club		
		UK Flying Farmers Association		
		UK Offshore Operators Association		
TOTAL 24	**27**	**30**	**3**	**7**
GRAND TOTAL				**91**

Table 6: Public or private organisations having replied to NPA 06/2006

All the said 3010 comments were analysed, as described in CRD 06/2006 published on 05 May 2007. Finally also the CRD received 103 reactions, which again all have been analysed and summarised as appropriate in the Opinion on the extension of the EASA's system to aerodrome safety and interoperability.

In conclusion, and obviously within the limits of the available resources, all stakeholders had multiple opportunities for interacting with the Agency, in the spirit, but often even beyond and never less than the letter, of the applicable rulemaking procedure.

In particular, the analysis of the replies to the CRD allowed concluding that only less than 5% of the original 91 collective stakeholders having replied to the NPA 06/2006, were not fully convinced about the correctness of the process, as shown in Table 7 below:

Organisations having replied to NPA 06/2006							
Competent Authorities			**Aerodrome Operators**			**Total**	
Raising doubts about the correctness of the process		Total original respondents	Raising doubts		Total original respondents	Raising doubts	Total original respondents
BMBVS	3	24	ADV	1	27	4	91
DGAC-FR							
ENAC							
%	**12.5**		**3.7**			**4.4**	

Table 7: Correctness of the process

2.3 Problem analysis

2.3.1 Safety level at EU aerodromes

2.3.1.1 Definitions

On request by the EASA Rulemaking Directorate a brief study was performed in July 2007, by the Safety Analysis and Research Department of the same Agency, on aviation accidents occurred at or in the vicinity of an aerodrome. The ICAO Annex 13 definitions for aviation accidents and incidents were used, as summarized in Table 8:

Extract from definitions in ICAO Annex 13, 9th edition – 2001 including Amendment 11 applicable 23 November 2006	
Accident (Annex 13 also includes some exceptions not copied in present table)	Occurrence associated with aircraft operation which takes place between the time any person boards with the intention of flight, until all persons have disembarked, in which: a) A person is fatally or seriously injured as a result of being in the aircraft, or direct contact with any part of the aircraft, including detached ones, or direct exposure to jet blast. b) The aircraft sustains damage or structural failure which adversely affects the structural strength, performance or flight characteristics of the aircraft, and would normally require major repair or replacement of the affected component. c) The aircraft is missing or is completely inaccessible.
Incident	An occurrence, other than an accident, associated with the operation of an aircraft which affects or could affect the safety of operation.

Table 8: Extract from definitions in ICAO Annex 13

The study was based on data retrieved from the EASA safety database, which covers worldwide data on accidents and serious incidents obtained from ICAO, as well as information on safety occurrences from industry and media sources. All the data contained in present paragraph 2.3.1 were extracted by the said data base and aggregated by the Safety Analysis and Research Department of the Agency, unless otherwise specified in the text.

2.3.1.2 Scope of the study

The scope of this safety study included:

- Accidents, occurred to aircraft with a maximum certificated take-off mass over 2250 kg, since data for smaller airframes are not collected by ICAO;
- Of any category (i.e. fixed wing of rotorcraft), either used for commercial air transport or general aviation.

The analysis covered ten years: i.e. from 1996 to 2005. So, for instance, the recent accident of 17 July 2007 at Congonhas airport (Brazil), which claimed 187 lives from on-board persons, but also 12 from people in the metropolitan area surrounding the said aerodrome, was not included in the study, since official information on the causal factors for the aircraft having overran the wet runway, is not yet available.
A comparison was also made between the regions where the accident occurred: i.e. Europe[5] compared with the rest of the world. For some graphs, because of the non complete availability of data, the scope is however adjusted.

2.3.1.3 Phases of flight

As shown in the graphs in Figure 3 below, around 75% of all accidents, during the considered time frame, occurred at or in the vicinity of an aerodrome. No significant differences emerge between Europe and the rest of the world (not in absolute figures, but in terms of percentage distribution of accidents):

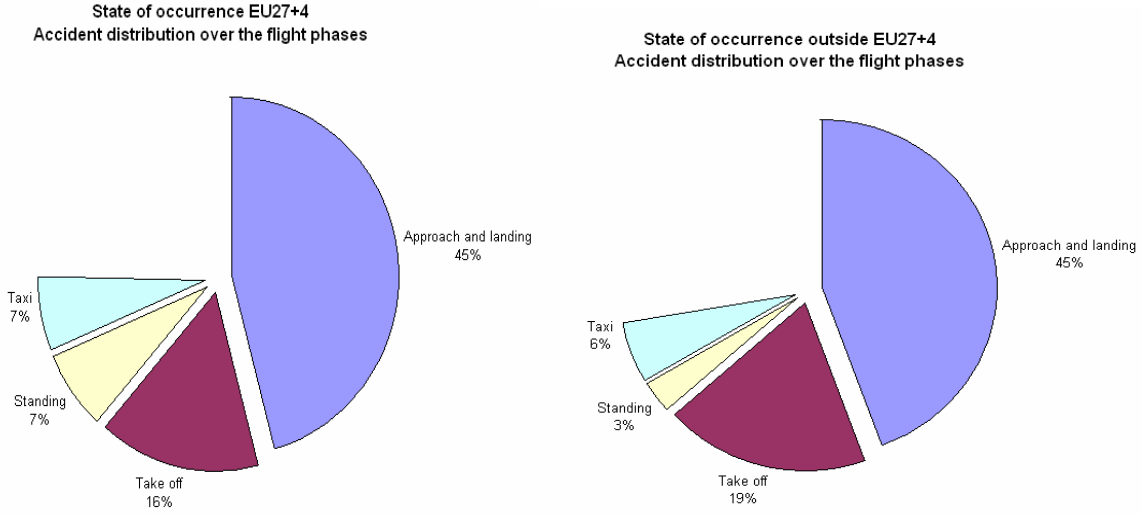


Figure 3: 75% of aviation accidents at or near aerodromes

[5] For this safety review "Europe" is to be considered as the 27 Member States of the European Union plus Iceland, Liechtenstein, Norway and Switzerland (EU27+4), since the latter four participate to the "EASA system". ECAC instead comprises a wider region, including 42 States: i.e. the entire geographical Europe, except Belarus, Liechtenstein, Russian Federation with Kaliningrad FIR, San Marino and the United Nations Mission in Kosovo.

2.3.1.4 Occurrence categories

Occurrence categories provide the first - highest – level of analysis for accidents and incidents. More than one category can be assigned to a given occurrence. The occurrence categories describe what happened in general terms.

The graph in Figure 4 below shows the occurrence categories of the accidents which occurred during the take-off, landing, standing and taxi phase:

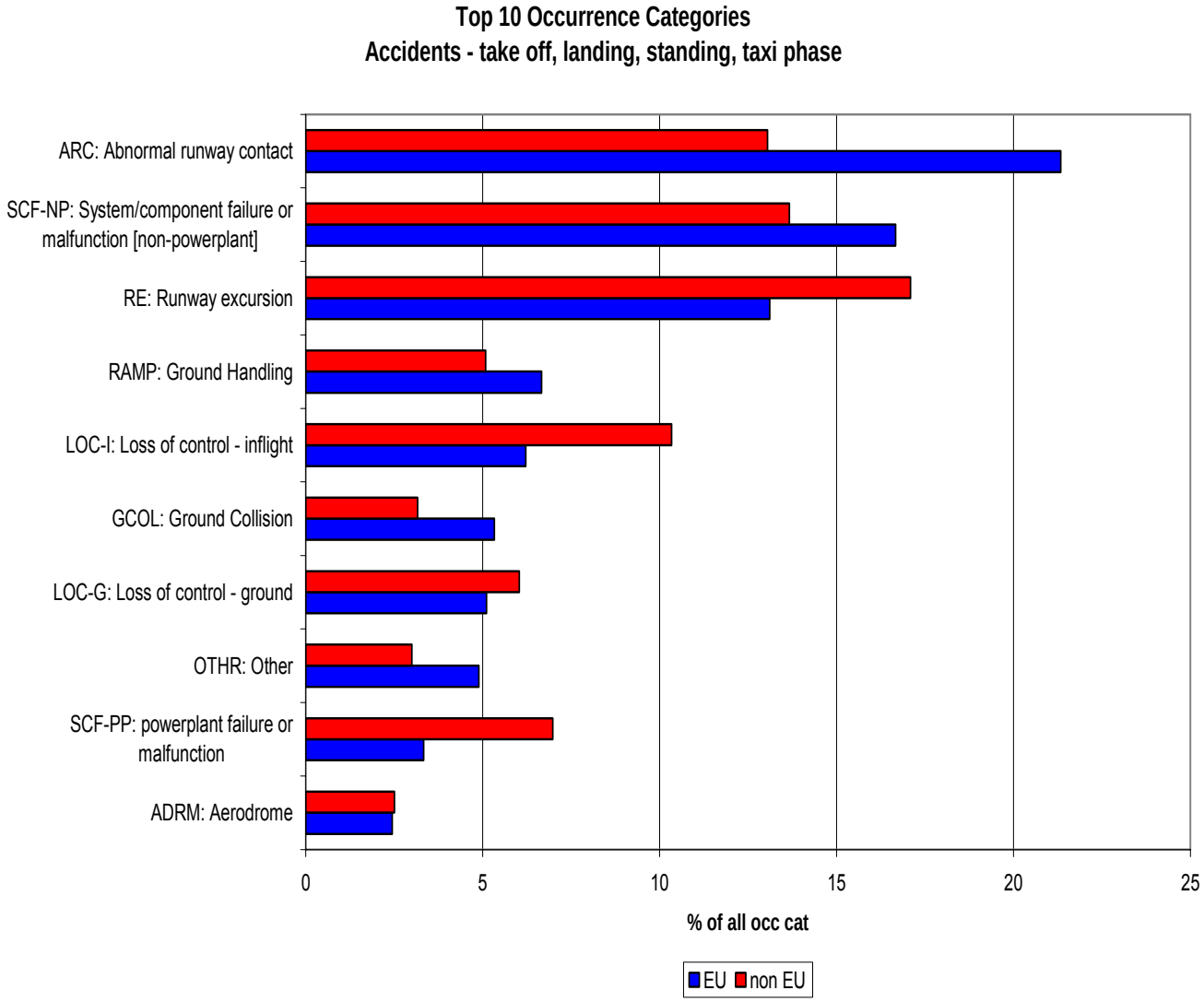


Figure 4: The top 10 categories, aerodrome related

From Figure 4 above it can be observed that 3 out of the most frequent 5 categories in Europe can be aerodrome related (i.e. ARC, RE, RAMP). The taxonomy of the said categories is better described in Table 9 below:

Acronym	Definition
ARC	Abnormal Runway Contact: landing hard, long, fast. Also includes tail-strikes and wheels-up landings. Its causes may be, or partially be, even aerodrome related (e.g. improper runway marking).
SCF-NP	System/ component failure – non engine: To describe that there was a failure / malfunction of one of the aircraft systems other than the engine. In very few cases surface conditions or slopes, may damage the undercarriage. In extremely rare cases (e.g. Concorde accident on 25 July 2000) the sequence of events may be initiated by FOD on the runway and lead to a catastrophic accident.
RE	Runway Excursion: the aircraft left the runway to the side or overran the end of the runway. In a number of cases it can be aerodrome related (e.g. aquaplaning or declared distances not matching safety standards, in order to commercially attract more traffic).
RAMP	**Ground handling: includes aircraft being damaged by ground equipment, vehicles but also includes loading errors. It is covered by the Annex 13 definitions of aviation accident or incident.**
LOC-I	Loss Of Control In flight: the aircraft deviates from the intended flight path. This category is only used in cases where the aircraft is controllable. Cases where technical failures render the aircraft uncontrollable are excluded.
GCOL	Collision of the aircraft with objects / obstacles while moving on the aerodrome but excluding the take-off run and the landing roll. It therefore excludes collisions due to runway incursions. The latter not being in the above list of the 10 top categories in terms of frequency of accidents (frequency of runway incursion incidents is mentioned below; severity of consequences is not frequency related).
LOC-G	Loss of Control on Ground: It could be due to failure of an undercarriage part, but it could also well be due to aerodrome related causes: e.g. sliding on ice, hydroplaning, or weather-cocking of the aircraft.
OTHER	Any other type of accident, which, in relation to occurrences on/near aerodromes includes most notably bird strikes, e.g. collision of aircraft with birds.
SCF-PP	Engine failures of the aircraft. In few cases they may be due to FOD ingestion.
ADRM	**Occurrences related to the layout or the functioning of an aerodrome. This may include accidents related to poor drainage of the runway, poor runway maintenance, poor signage leading to access e.g. to the wrong runway, inadequate vehicle control, snow removal, etc.**
Note: Only two of the categories shown above, i.e. "ADRM" and "RAMP" highlighted in bold, directly and uniquely relate to the aerodrome and its operations. All others are normally more directly related to the operation of the aircraft on the aerodrome, but only the analysis of the specific accident or incident can tell whether there was a contribution by aerodrome related factors. Only LOC-I, whose row is shaded, is never aerodrome related.	

Table 9: Taxonomy for occurrence categories

The relatively high number of abnormal runway contacts/runway excursions in Europe (around 50% more frequent than in the rest of the world) would merit further studies. A possible explanation could be that reporting of such occurrences is more developed in Europe than in other parts of the world. In any case, to prevent catastrophic consequences after a runway

excursion, it is important that defined areas (e.g. strips or runway end safety areas) are established and maintained around the runways.

2.3.1.5 Fatal accidents at aerodromes

A total of 9 fatal accidents world wide, in the time frame 1996-2005, were categorized with the occurrence category "Aerodrome" (ADRM). 2 of them occurred in Europe, as listed in Table 10 below:

EU27+4				
Year	**Class**	**total fatalities**	**fatalities on aircraft**	**number of accidents**
2000	Accident	113	109	1
2001	Accident	118	114	1

Table 10: Fatal accidents in Europe, to which aerodrome causes greatly contributed

A brief summary of the mentioned aerodrome related factors is presented below:

25/07/2000 – France (Gonesse, Lieu patte d'Oie) - Concorde
Aerodrome related factors: **debris on the runway**, runway not kept clear of debris.

08/10/2001 – Italy (Milano-Linate Airport) – MD87 and Cessna Citation
Aerodrome related factors: Aerodrome standard did not comply with ICAO Annex 14; required **markings, lights and signs did either not exist or were in dismal order and were hard to recognize under low visibility conditions. Other markings were unknown to operators. Also no functional Safety Management System was in operation at the aerodrome.**

The 7 other fatal accidents at least partially related to aerodrome causes, which occurred outside Europe in the considered time frame, are listed in table 11 below:

Rest of the world				
Year	**Class**	**total fatalities**	**fatalities on aircraft**	**number of accidents**
1999	Accident	18	16	1
2000	Accident	86	86	2
2001	Accident	1	0	1
2004	Accident	2	2	1
2005	Accident	152	152	2

Table 11: Fatal accidents outside Europe, to which aerodrome causes contributed

A brief summary of the mentioned aerodrome related factors is presented below:

21/12/1999 – Guatemala (Guatemala city) – DC10-30
Aerodrome related factor: houses close to runway (i.e. **insufficient runway end safety area**).

25/03/2000 – Angola (Huambo) - Antonov 32
Aerodrome related factor: **poor runway surface** condition.

31/10/2000 – Taiwan (Chiang Kai-Shek Airport) – Boeing 747-400
Aerodrome related factors: **signs did not comply with international standards, some critical lights on taxiway and runway were missing or not working**, no barriers or markings were put up at the start of the closed runway, no ground radar available for ATC to identify position of aircraft.

05/01/2001 – Angola (Dundo) – Boeing 727-100
Aerodrome related factors: runway lip above field elevation, **persons allowed on area next to runway, probably no fence around airport, length of runway induces specific operational pilot behaviour (land as soon as possible after threshold).**

29/06/2004 – Mozambique (Vilanculos a/p) – Beech 200 King Air
Aerodrome related factors: The aircraft could not build up enough speed because of the **runway's soft soil**.

23/08/2005 – Perù – Boeing 737-200
Aerodrome related factors: **RWY lighting unavailable**.

10/12/2005 – Nigeria – DC-9-30
Factors cited included: the fact the **airfield lightings were not on,** may also have impaired the pilot from sighting the runway. Another contributory factor was the fact that the aircraft had an impact with the exposed drainage concrete culvert which led to its disintegration and subsequent fire outbreak.

2.3.1.6 Lead events

The scenario of an accident is described through the sequence of events that lead to the final outcome. The number of steps described depends on the depth of the investigation and the nature of the accident. For analysis purposes, the first or lead event which initiated the accident sequence is of importance. The graph in Figure 5 provides information on the top lead events for accidents related to the approach/landing and take–off phases of the flight:

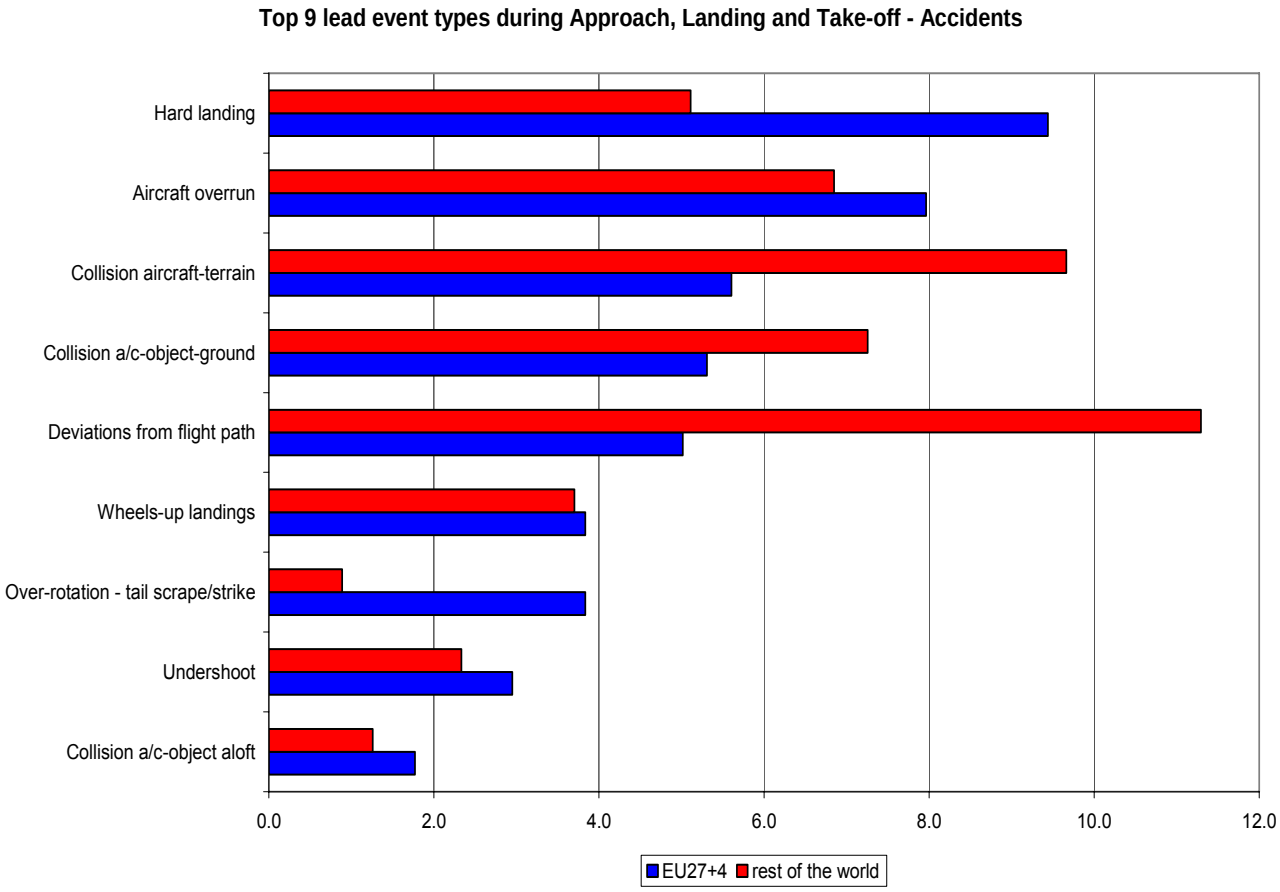


Figure 5: Top 9 lead events at or near aerodromes

The data show that there are a higher percentage of accidents in Europe which involved hard landings, overruns and over-rotations/tail strikes. This is in line with the picture already obtained using the accident categories.

At the same time, the data show that Europe has much lower share of accidents involving loss of control in flight and collisions with terrain/obstacles, for aircraft over 2250 Kg certificated MTOM. However, the Annual Safety Report 2005 published by EUROCONTROL, focused on Air Traffic Management (ATM) and Air Navigation Services (ANS), does not discriminate events according to aircraft mass (indeed irrelevant for Air Traffic Services). Therein EUROCONTROL states that the number of Controlled Flights Into Terrain (CFIT) in ECAC stabilised around 30/year. This type of accident, in extremely rare cases occurs to large aircraft landing at runways equipped with instrument precision radio guidance (e.g. ILS) in the horizontal and vertical planes. It shall therefore be observed that the risk of CFIT is still significantly present for runways and small aircraft, where ILS technology is prohibitively expensive or simply not feasible to implement.

2.3.1.7 Event types during parking or taxing

Figure 6 below provides an overview of the most frequently occurring events during the standing and taxi phase:

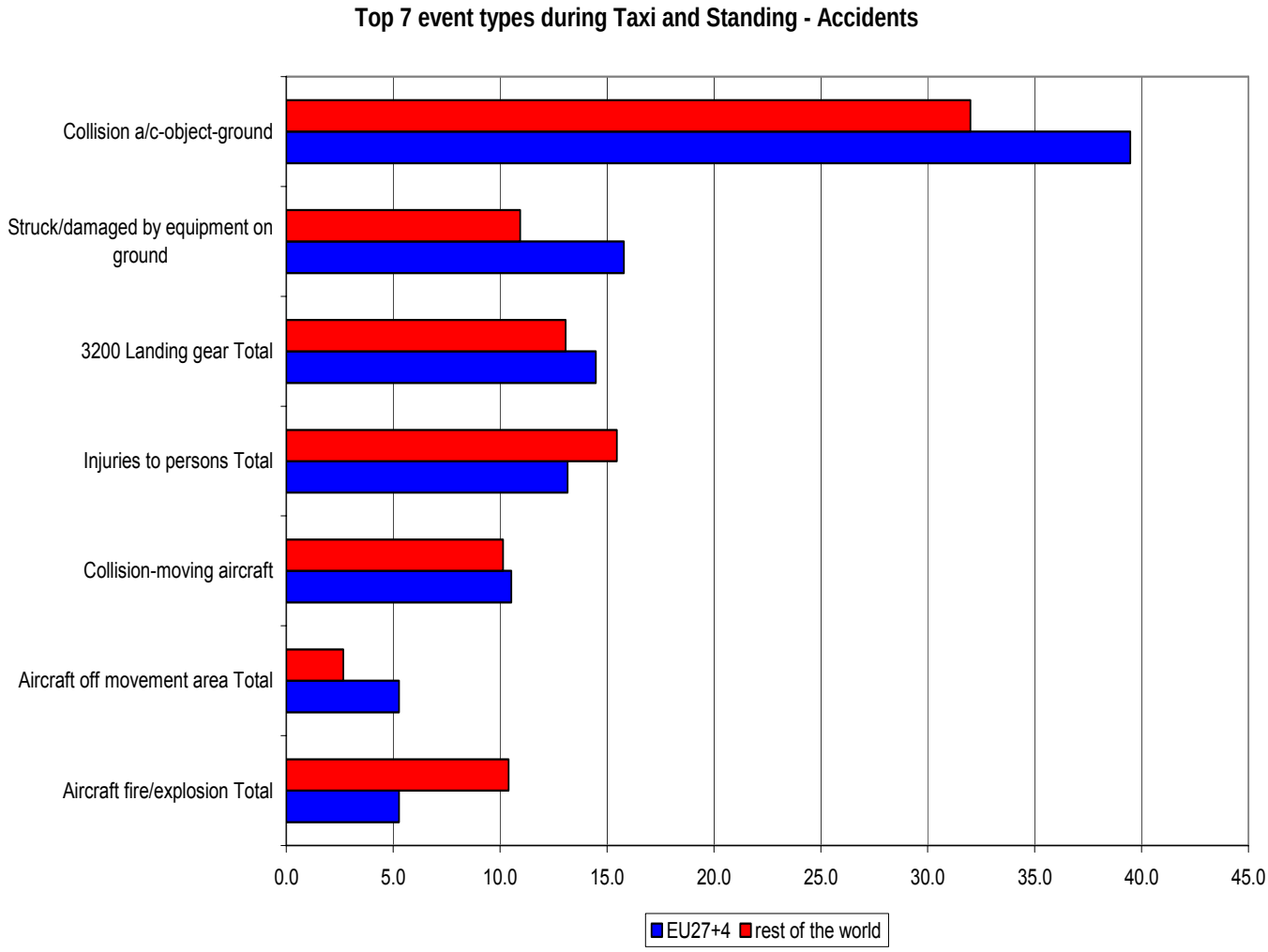


Figure 6: Top 7 events during taxing or standing

It can be observed that in EU 27+4 the most frequent safety events during taxing or parking are collisions with fixed objects or with ground equipment.

Such occurrences at aerodromes also involve significant costs. Estimates provided by the Safety Analysis and Research Department of the Agency are not covering all such costs as not all occurrences involving injuries have been accounted for due to limitations in the reporting requirements to ICAO. The cost related to the damage of the aircraft involved is also significant but it could not be estimated directly by EASA, since such information is not found in the accident reports.

However, in addition to the data contained in the ICAO and EASA data bases, aviation safety data is also available on public web sites. Among them the Flight Safety Foundation[6] (FSF: an independent international non-profit organisation) launched in 2003 the Ground Accident Prevention (GAP) programme, due to the relevance that accidents and incidents, on the ramp or taxiway, had assumed. On 31 July 2007 summary information collected in cooperation with IATA was present on their web site. According to it, FSF estimated around 27,000 safety events (accidents or incidents) per year, world wide, during taxing or standing. This was equal to almost 1 event per 1,000 departures. Since in ECAC there are around 10,000 more departures per year (i.e. 10 millions), it can be estimated that in that area, around 10.000 accidents or incidents occur every year, on the apron or during taxing, which is more or less 1/3 of the world wide total.

FSF also estimated the associated cost of the damages (even a minor incident may result in costly repair to aircraft and even more costly disruption of the schedule and aircraft ground time for repair) in the order of 10,000 million US $/year world wide, which means an average cost of 370,000 US $/accident or incident. Assuming 1€ = 1.35 US $ (in 2006), the average cost of a single of those event, could cost around 270,000 €.

Therefore the total yearly cost within ECAC, based on the figures provided by FSF, can be estimated in the range of:

10.000 accidents or incidents on the apron or during taxing x 270,000 € =
= 2,700,000,000 € = 2700 M€ (2006)

However, the data provided by FSF are not official ones. So it would be prudent to assume that they could even be overestimated. EASA therefore will consider a total yearly cost reduced by 30% in the following: i.e. 2700 – 30% = 1890 M€ (2006)/year.

It is then considered that within ECAC around 75% of the flights take place in the EU 27 + 4; so only 75% of the total cost should be attributed to this geographical area: i.e. 1890 x 75% = 1417.5 M€ (2006)/year.

At least 80% of the above figure can be related to aerodrome (infrastructure, equipment or any operation including ground handling) factors, since the events under consideration are only during taking or standing. So in conclusion in the EU 27 + 4 it can be estimated that the cost of damages due to aviation accidents and incidents during taxi or standing, is in the order of 80% of 1417.5 = **1134 M€** (2006)**/year**.

[6] http://www.flightsafety.org/gap_home

2.3.1.8 Runway related events

Figure 7 below shows the rate (per million departures) of runway related accidents during the take-off and landing phase. Runway related accidents include for example runway incursions, runway excursions, and collision with obstacles on the ground. For this figure, the accident rate for both scheduled and non-scheduled commercial operations that occurred in geographical Europe (which includes the Russian Federation amongst other countries) are compared with the rest of the world for the years 2000 to 2005. This scope was chosen due to availability of exposure data.

The three year moving average for Europe shows a different trend compared to the rest of the world: the accident rate for the world seems to increase, while the Europe rate seems to show a slight downward trend. Possibly this could be due to greater awareness after the sad accident at Linate (08 October 2001) and the following EAPPRI (EUROCONTROL Action Plan for Prevention of Runway Incursions), but no firm data are available to actually substantiate this perception. But it should be noted that, since in Europe (excluding Russia, but including the 42 States of the ECAC) there are almost 10 million IFR flights/year, an accident rate of 1 per million departures, means almost 10 runway related accidents (not necessarily fatal)/year, in turn more or less one per month: there is then still wide scope for improvement, also in face of the expected continuing traffic growth.

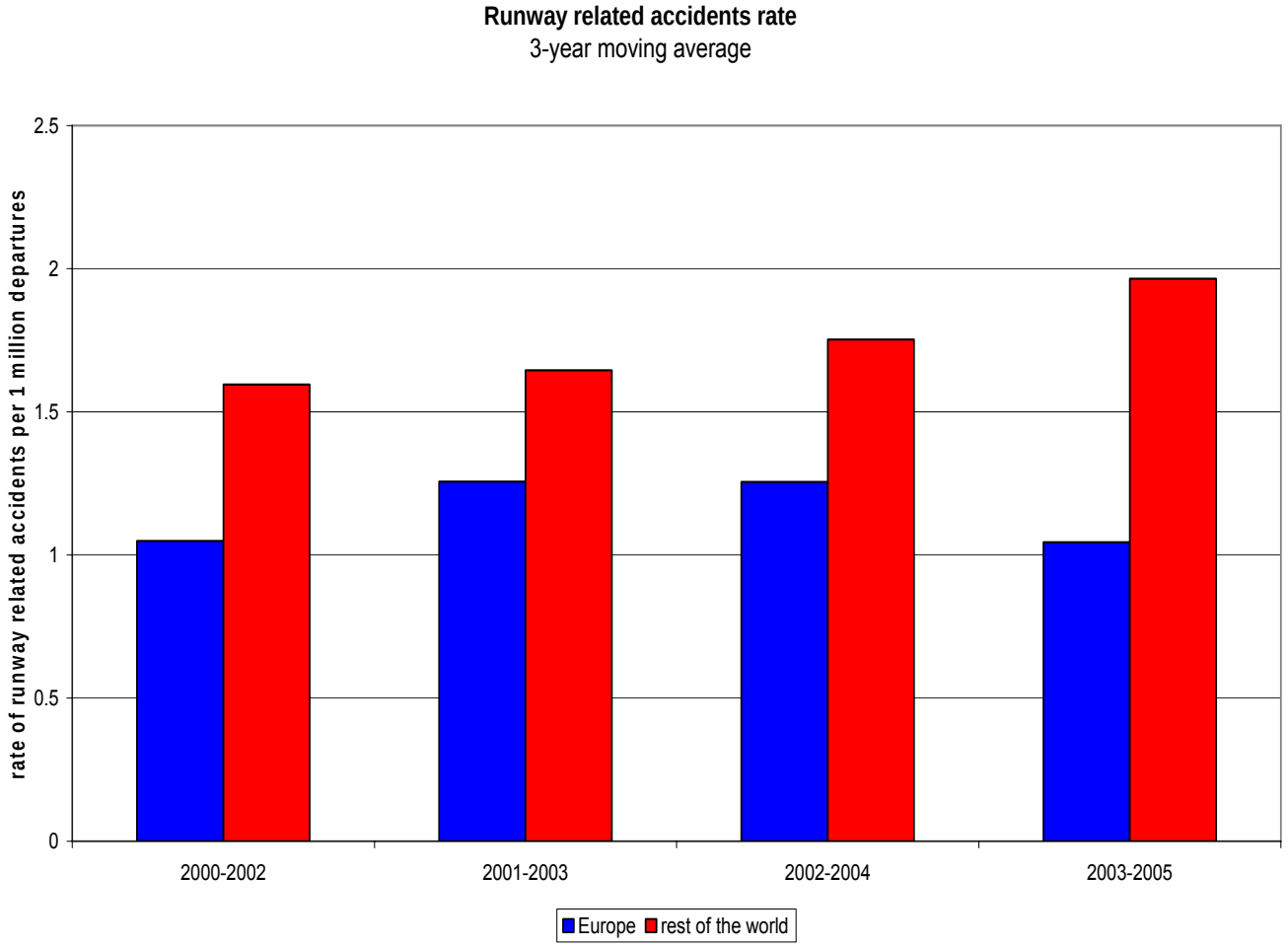


Figure 7: runway related accident rate

2.3.1.9 Aeroplanes and helicopters below 2250 Kg

No data are available from the ICAO safety data repository on aeroplanes or helicopters with a Maximum Take Off Mass (MTOM) not greater than 2,250 Kg. However ECAC collects and assembles data for these light aircraft, as well as for gliders. In the three year period 2004 to 2006, the said ECAC data reveals that 2,034 accidents occurred in about 34 States (i.e. about 680/year) involving "small" motorized aeroplanes or helicopters, such as those typically used by general aviation at minor aerodromes open to public use. Of these 2,034 accidents 138 occurred with the aircraft standing, 387 during Take-Off and 793 during landing. In total such accidents killed 494 people (about 167/year). It should be observed that this number of fatalities is on average even greater than the yearly number of fatalities due to commercial air operations in the EU, even if the former are less visible to the public, since the accidents of small aircraft do not trigger much attention from the media. In the future, the emergence of Very Light Jets is expected to bring relatively complex and fast operations even to minor aerodromes open to public use. These operations, if involving air taxi services, belong to commercial air transport services. In conclusion, the safety of light aviation using minor aerodromes, in face of the aforementioned figures and of the expected developments, cannot be ignored.

2.3.1.10 Summary of the aerodrome safety analysis

In the period from 1 January 1996 to 31 December 2005, there were some **413 accidents** to aircraft over 2250 kg max certificated take-off mass **on or near aerodromes** in Europe. In only three years, from 2004 to 2006, for lighter aircraft the number of accidents at or near aerodromes totalled 1318. They involved some **743 fatalities** (i.e. about 75/year), 125 serious injuries as well as 242 minor injuries for the heavier aircraft. The majority of the around 167 fatalities/year due to smaller aircraft, also occurs at or near aerodromes. Occurrences involving minor injuries only do not constitute reportable accidents and are not covered. The number of minor injuries mentioned above only relates to minor injuries sustained in reportable accidents.

It is estimated by the Safety Analysis and Research Department of the Agency, that the total **cost related to fatalities/injuries** alone over the period 1996-2005 was in the order of 1500 Mill Euro/10 years = **150 M€/year**.
With some 75% of all accidents occurring on or near aerodromes, the message is clear. Regulations should not only include aspects related to the operation of the aircraft but should also include all other aspects of the industry including air traffic and the aerodrome management.

In economical terms however, not all the costs of fatalities/injuries can be attributed to aerodrome factors, since also air operations, Air Traffic Management or aircraft technical causes may contribute. A much deeper analysis would be necessary to assess the percentage of said costs attributable to aerodrome causes, which might well prove disproportionate in the context of the present RIA. It is therefore prudently assumed that only 20% of the total is due to **aerodrome causes: i.e. 30 M€** (2006)**/year.**

This figure, should be **added to the 1134 M€/year** due to damages during taxing or standing, estimated in paragraph 2.3.1.7 above.

In conclusion it can be estimated that the cost of aviation accidents and incidents due to aerodrome factors (infrastructure, equipment, operations) in the EU 27 + 4, for aircraft

with a MTOM of more than 2250 Kg, totals around 1164 M€/year in € 2006. In addition the number of victims deriving from "small" machines, also in the perspective of the spreading of Very Light Jet operations, should not be ignored.

2.3.2 The Regulatory framework

2.3.2.1 The global regulatory framework: ICAO

The global regulatory framework with respect to aviation safety has been established by ICAO, based on the convention signed in Chicago in 1944. All the EU 27 countries are contracting States of ICAO, as well as Iceland, Norway and Switzerland. The set of rules, standards and recommended practices (ICAO SARPs) are contained in the *Annexes* to the said convention, whose Article 44 states that aviation rules and systems shall not be implemented if not standardised by ICAO. Although this principle has sometimes been breached, nevertheless it is the basic foundation for creating global interoperability. It should however be noticed that it emphasizes the technical and operational interoperability and not the regulation of organisations which, in the European legislation for aviation safety, has progressively assumed a paramount importance.

In addition ICAO can not be considered a real "safety regulator" of the aviation system. In fact in the basic EASA legislation, safety regulation includes three main tasks: i.e. rulemaking, certification/oversight/enforcement and standardisation. While the main task of ICAO is limited to rulemaking. The two other mentioned tasks, despite the global audit programme (i.e. USOAP), remain largely uncoordinated national responsibilities in the ICAO framework.

Actual implementation of the ICAO SARPs is then left to State decisions: a State may introduce a standard in its legal order, but it could also "notify" a difference to ICAO if so wished. Deviations from recommended practices do not even require any notification. All regulatory material provided by ICAO is in fact neither really legally binding to the States, nor uniformly interpreted or applied, nor immediately applicable to legal or physical persons.

Within the EU 27 + 4 this leads not only to non uniform protection of citizens for aviation safety matters, but also to non level playing field for the internal market.

In other words, although ICAO Annexes, including Annex 14 on aerodromes, often contain sound operational and technical provisions which have allowed the development of civil aviation at world wide scale during the last six decades, the ICAO framework exhibits the following main shortcomings:

- No rule is really legally binding;
- Rules often specify only the "what", but neither "by whom" (i.e. an organisation), nor "how" (e.g. certification and oversight by competent Authorities);
- Parallel legal transposition processes are required in each contracting State, with inherent dis-homogeneity, difference of timescales and duplication of work.

2.3.2.2 Rulemaking and standardisation in Europe

European States, in addition to belonging to ICAO, are also individually members of other aviation organisations, like ECAC, JAA, EUROCONTROL and GASR

The European Civil Aviation Conference currently consists of 42 Member States comprising all the EU 27. Its objective is to promote the continued development of a safe, efficient and sustainable European air transport system. ECAC issues *resolutions, recommendations and policy statements* which should be brought into effect by its Member States. Differently from ICAO, it is then not even a safety rulemaker.

The JAA was an associated body of the ECAC. It was tasked with rulemaking tasks and indeed it developed the Joint Aviation Requirements (JARs) in the fields of aircraft design and manufacture, aircraft operations and maintenance, and crew licensing. But the JARs, like the ICAO SARPs, were not legally binding, until transposed by States into their respective legal orders. Presently the transfer of functions, formerly carried out by the JAA, to the Agency, is in an advanced state of progress.

EUROCONTROL (comprising today 38 States including Montenegro) is presently mainly devoted to service provision, provision of central functions, training, research, as well as planning and management of joint development programmes. However, before 2004, it also played a rulemaking role (namely it has adopted and published the EUROCONTROL Safety Regulatory Requirements = ESARR), with the same characteristics of ICAO and JAA. In other words, while the formal rulemaking function, i.e. the taking of decisions that should bind EUROCONTROL's Member States is the preserve of EUROCONTROL's Permanent Commission, no actual legal enforcement mechanisms do however exist, due to the intergovernmental nature of such Organisation.

After the adoption of the legislative package on the "Single European Sky" (SES) by the EU legislator, EUROCONTROL assumed the responsibility of supporting the European Commission in the development of implementing rules for the domains of ANS and ATM, based on "mandates" issued by the Commission itself.

In addition EUROCONTROL never had the authority to certify systems or approve organisations (including in particular their safety management systems).

In 1996 a number of European States established the Group of Aerodrome Safety Regulators (GASR), a voluntary organisation with no formal institutional identity, which, through mutual co-operation, aims for harmonisation of the safety regulation of aerodromes encompassing both the airport infrastructure and the airport operations. The objectives, legal status and deliverable by the GASR, which presently totals 28 Member States, are similar to those of ICAO, JAA and EUROCONTROL, in the field of safety regulation.

In conclusion any rule, standard or requirement adopted and published by any of the intergovernmental organisations mentioned above, is not immediately applicable unless legally transposed at national level.

In addition none of them ever had the authority of issuing certificates or approvals, nor enforcement powers following standardisation inspections.

On the contrary EASA has three main tasks on the basis of the Basic Regulation 1592/2002:

a) Rulemaking, including development of "Opinions" addressed to the Commission, which will lead to implementing rules immediately applicable and legally binding within the territory of the EU 27 + 4, without the need of transposition at national level;

b) Issuing certificates and approvals directly (for the cases specified in the Basic Regulation) or through the competent Aviation Authorities nominated at national level;

c) and quality and standardisation, through inspections of the competent Authorities and reporting to the Commission, having the latter enforcement powers.

The Agency took responsibility, in 2003, for airworthiness and environmental compatibility of aeronautical products. Presently the proposal[7] for extending its competences to air operations, flight crews and safety of 3rd country operators, is under the co-decision process.

Assuming a positive conclusion of such a process, in the EU 27+4:

- the safety regulation of a number of aviation domains will be part of the EU legal order (i.e. no need for national transposition of regulations; executive tasks distributed at central, national and local level as appropriate);
- ATM and ANS will remain regulated through the SES, whose features however do not perfectly match the Basic Regulation of EASA;
- but legal safety regulation of aerodromes, will still remain a national task, albeit based on international standards and requirements developed by a number of organisations (e.g. ICAO, GASR).

2.3.2.3 The fragmented regulatory framework

The majority of stakeholders consulted by ECORYS during the preliminary impact assessment, in general agreed or partially agreed with the problems identified in 2.3.2.1 and 2.3.2.2 above. Although not all parties agreed that ICAO rules would not be binding in all cases, they did agree that there is significant room for differences in interpretation and slow implementation in national law.

A related issue is that some ICAO rules (especially in the airport domain) were judged rather outdated by a number of stakeholders, since the focus therein is mainly on hardware (lightings, stripes on runway, etc.), while these rules fail to address the "softer" issues like operations, procedures and oversight processes, which are becoming increasingly important.

The perception by stakeholders, as observed by ECORYS in 2005, has also been shared by the SESAR project, which, in paragraph 5.2.4.1 in its "Deliverable 3" (DLM-0612-001-01-00) released in July 2007, stated that the European civil aviation legislation requires a pan-European safety regulatory framework for change management that sets up stable procedures and participative processes. To support the development of this framework, and also to ensure a successful implementation of changes, three principal recommendations have been identified by SESAR:

- The European Union and the EU Member States should designate a safety regulatory authority at European level acting also as the regulatory interface for change management and interacting with the SESAR JU to be established at the latest by the end of the SESAR Definition Phase;
- The designated European safety regulatory authority should develop a (review) procedure for change management and where appropriate propose amendments to European Civil Aviation legislation and existing safety regulatory requirements and arrangements;
- The EUROCONTROL Agency should develop advisory material in a harmonised manner to support the effective implementation of change management. This should be in compliance with existing European civil aviation legislation and safety regulatory requirements, which ensures commonality.

[7] COM (2005) 579 final of 16 November 2005 adopted by the European Commission.

The Agency hence observes that from the above recommendations developed by SESAR, the existing regulatory fragmentation is acknowledged. In addition it is clear that the proposed regulatory Authority should be unique, while no regulatory role is envisaged for EUROCONTROL.

In the same direction the High Level Group (HLG) established by Transport Commissioner Messier Jacques Barrot at the end of 2006, in Recommendation 1 contained in its final report delivered in July 2007 suggested that fragmentation is a major bottleneck in improving the performance of the European aviation system. As this can only be addressed at the European level, the HLG recommended strengthening the role of the European Community and the Community method as the sole vehicle to set the regulation agenda for European aviation. This should also eliminate overlaps between EU and other regulatory processes, ensuring independent structures for regulation and service provision, and ensuring that safety regulatory activities are conducted independently from other forms of regulation (e.g. economic or financial).Even more explicitly, in its Recommendation 6, the HLG suggested to focus EUROCONTROL on necessary pan European functions, ATM network design, and support to regulation as requested by the European Commission and Member States, while transferring the responsibility for safety regulatory activities to EASA. Finally, in its Recommendation 8, the HLG requested the Commission to empower EASA as the single EU instrument for aviation safety regulation, including airports and ATM. **In conclusion the problems stemming by the presently fragmented safety regulatory framework and the legal shortcomings of the intergovernmental approach, are identified not only by the Agency, but also by the stakeholders, by SESAR and by the HLG.**

2.3.3 Organisations and processes at national level

2.3.3.1 Separation of safety oversight

28 States belong today to the Group of Aerodrome Safety Regulators (GASR) as depicted in Figure 8 below:

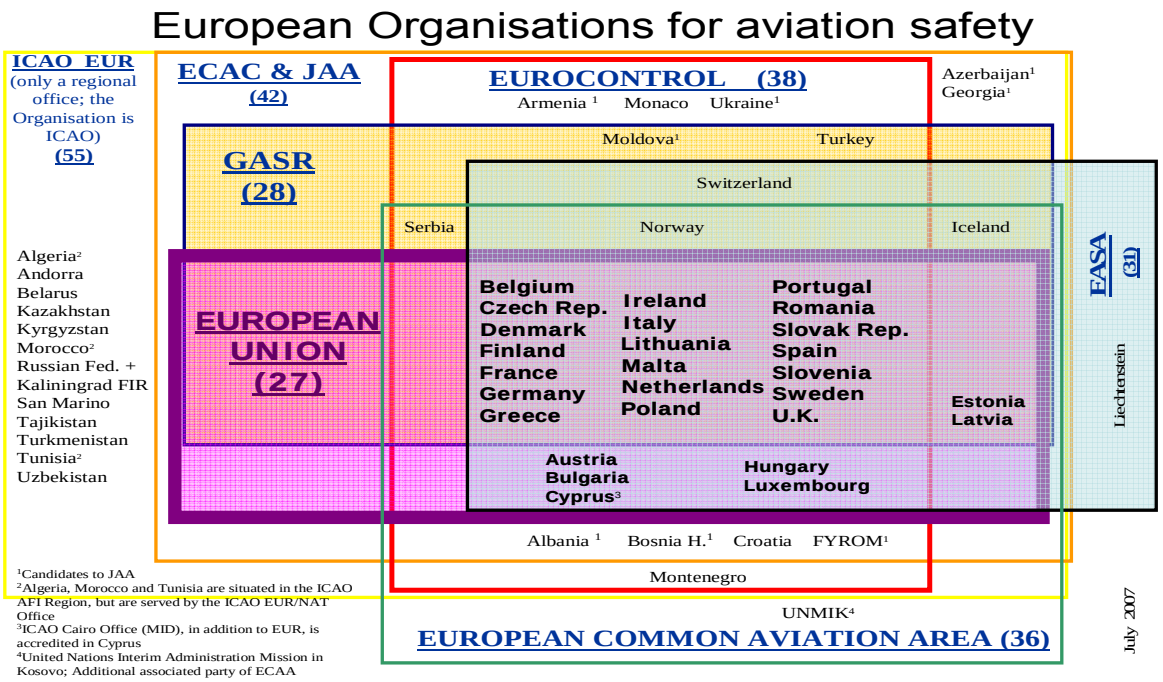


Figure 8: GASR membership in relation to other European organisations

25 GASR Member States also belong to the EU 27 + 4, the so called "EASA system". The latter however comprises 31 States. Among the 6 States[8], belonging to the EASA system but not to GASR, in one case (Cyprus) the Ministry of Transport is also responsible for airport management and operations. No evidence was found, at the time of compiling present RIA, that a separate function for aerodrome safety oversight exists in that State. The related possible impact of the proposed policy is analysed in paragraph 2.8 below.

2.3.3.2 Operational functions performed by public Authorities

In 2007 the GASR carried out a survey among its 28 members to collect information on the way in which the aerodrome sector was organised across the continent. From the results it emerged in particular that in many cases public Authorities (Ministry of Transport, local municipalities, regional administrations), public interest bodies (e.g. Chambers of Commerce) or State owned enterprises are in charge of aerodrome operations and management, while in others, Authorities are responsible to carry out specific activities linked also to the proposed essential requirements for aerodrome safety.
The most relevant findings of the said survey, some of which will require being included in the present assessment, are summarised in Table 12 below:

Which entity is responsible for carrying out some activities at aerodromes				
Category	**Main GASR finding**	**Related ERs**	**Deserving impact analysis**	
			Y/N	**Notes**
Aerodrome operations	Carried out by different entities in different cases, as, for instance: • Regional Government • Local Municipality • Chamber of Commerce • State commercial enterprise • State owned or private company	Chapter B	No	ERs are independent from the statutory nature of the aerodrome operator
	Direct State responsibility: • Estonia (some) • Italy (few minor cases) • Norway (some) • Sweden (some) • Greece (not all)	Chapter B	**Yes**	Only if safety oversight function not separated (par. 2.8). None of the GASR Member States affected. Only one (i.e. Cyprus) possibly affected among EU 27 + 4.
Aerodrome Emergency Plan	Apparently in few cases this plan is absorbed by the Local Area Emergency Plan; such e.g. in DK, EE, FR (Préfet), LT.	B.1.f	No	In any case the aerodrome operator is always involved and it shall have procedures in place to deal with emergencies
	In few cases responsibility of Authority not of operator (e.g. IT)			
Local Area Emergency Plan	Required already in the vast majority of States	C.3	No	Already implemented in most of the cases
RFFS at aerodrome	In the majority of cases at major airports provided by aerodrome operator. Exceptions are GR and IT	B.1.g	No	Wording of the ER mandates operator to "demonstrate".

Table 12: Summary of GASR survey (2007)

[8] Austria, Bulgaria, Cyprus, Hungary, Liechtenstein and Luxembourg.

In conclusion only the need to establish a separated (at least at functional level) safety oversight responsibility will deserve attention in this RIA.

2.3.3.3 Present effort for aerodrome safety oversight

In 2006 the Commission services, through the colleagues in the Group of Aerodrome Safety Regulators (GASR), collected some information on the totality of the effort necessary for the entire range of aerodrome safety regulatory activities. The information, as confirmed by GASR colleagues to the Commission services, is presented in Table 13 below:

N.	State	Certified (or planned to be shortly certified) aerodromes	Full Time Equivalents (FTEs)		
			Policy & Rulemaking	Certification & Oversight	Total professional staff
1	Belgium	6	1	4	5
2	Czech Republic	9	0.5	1.5	2
3	Denmark	36	1	5	6
4	Estonia	11	2	2	4
5	Finland	28	1	3	4
6	France	70	7	122	129
7	Ireland	28	1	2	3
8	Italy	50	10	25	35
9	Latvia	8	0.5	1.5	2
10	Netherlands	14	10	6	16
11	Portugal	50	1	5	6
12	Romania	33	5	8	13
13	Slovak Republic	8	1	2 + 1	4
14	Slovenia	67	0.5	2	2.5
15	Spain	42	3	7	10
16	Sweden	99	4	8	12
17	United Kingdom	142	6	14	20
	TOTAL	701	54.5	219	273.5

Table 13: FTEs presently employed for aerodrome safety regulation

The data in table 13 above are approximate and partial. However they cover a range of different situations, like “small” or “big” States, and different cultural traditions. So in general it is believed that **such data constitute a sufficient sample to estimate the number of FTEs for aerodrome safety regulation under legislation presently in force at EU 27 + 4 level,** as necessary and sufficient in the present RIA document, according to the principle of proportionate analysis.

Presently then, for instance in UK, 6 FTEs are employed in policy and rulemaking for aerodrome safety. A similar number is used in France. On the other extreme, only 2 professionals are available in the Latvian CAA for aerodrome safety regulation (i.e. rulemaking + certification + continuous oversight). It is therefore estimated that in a “small” State about only 0.5 “Full Time Equivalents” (FTE) can be spent yearly on aerodrome rulemaking. In

average then, for rulemaking for aerodrome safety, about 54.5 FTEs were employed in 2006 by 17 States = 3.2 FTEs/State. Employing the same average of 3.2 FTEs in each of the EU 27 + 4, will lead to a **total of 99 FTEs for safety rulemaking on aerodromes at continental level.**

About 219 FTEs were used for certification and oversight of 701 aerodromes in 17 States. Therefore (701/219 = 3.2) 1 single FTE in a competent Authority is in average necessary for certification and oversight of a little more than 3 aerodromes, under the present legislation: this value of **3.2 aerodromes/inspector can be considered the present "productivity factor"** in the following sections of this RIA.
A very coarse extrapolation of these data for the entire EU 27 +4 can be carried out assuming about 41 aerodromes (to be certified)/State (i.e. 701/17) and therefore 1271 in total for the said territory. Dividing this number by 3.2, the resultant number of necessary FTEs is around 400.

Therefore, in the present RIA, the following estimations will be used as "baseline" (i.e. present situation) against which to assess the impact of possible future options:

- **99 FTEs necessary for rulemaking under present legislation (i.e. parallel transposition of international requirements into individual State law);**
- **1 FTE necessary for certification and oversight of 3.2 aerodromes under present rules (i.e. operations and management checked at each single aerodrome), which means 400 FTEs in the EU 27+4.**

2.3.4 Conclusions and justification for EU intervention

In conclusion the identified and analysed problems justify intervention at EU level in order to:

- Improve the safety at or near airports, where during the last decade about 75% of all aviation accidents occurred, and which, only in Europe, claimed 743 lives;
- Improve safety also at aerodromes open to public use by general aviation, whose yearly number of fatalities is comparable, if not greater, to that of commercial air transport by large aeroplanes;
- Reduce the cost deriving from aviation accidents and incidents caused at least partially by aerodrome factors (infrastructure, equipment, operations) within the EU 27 + 4, which can be estimated in the order of 1164 M€ (2006)/year;
- Progress towards a consistent and non fragmented safety regulatory framework for EU 27 + 4, clearly separated from service provision and from independent accident investigations, as well as from other forms or regulation or public intervention (e.g. funding or financing);
- Base the regulatory framework on a legal basis more solid, consistent and uniform than the rules or standards adopted and published by intergovernmental organisations;
- Support the pan-European SESAR project from beginning, by offering it a single safety regulator with whom to interact;
- Achieve economy of scale in aerodrome safety and interoperability rulemaking, which today requires 99 FTEs in an overall context of rationalising the cost of safety regulation.

2.4 Objectives and indicators

2.4.1 Objectives

The intended extension of the EASA system is addressing the problems that are associated, in relation to aerodromes, with the current organisation of the safety rulemaking and a lack of standardization in safety oversight by the competent authorities.
Identified objectives can be classified according to the three levels normally used by the Commission services for impact assessment, such as:

- The **general objectives**, which represent the overall wide policy goals;
- The **specific objectives**, which are the more immediate objectives of the planned legislative initiative contributing to achieve the overall objectives. Both the general and specific objectives are influenced by factors outside the direct control of the Commission or of the Agency and therefore sometimes difficult to measure;
- The **operational objectives**, which are related to the precise outputs of the proposal and which can then be assessed or even measured by appropriate indicators.

Objectives and indicators for the EASA extension to the safety and interoperability regulation of aerodromes are presented in following paragraphs 2.4.2 to 2.4.5.

2.4.2 General objectives

General societal objectives of the European Commission as described in the Commission's work programme and the Annual Policy Strategy[9], in turn broadly based on the "Lisbon strategy", which are:

- Putting Europe on the track of *prosperity*, which, in addition to building an internal market (comprehensive of facilitation of labour mobility) based on fair competition, also comprises greater efficiency and effectiveness of the transport system, supporting SESAR, as well as reducing cost of accident and incidents and reducing the costs connected to safety regulation (economy of scale in rulemaking will be roughly proportional to the number of aerodromes in the scope of the EU legislation);
- Reinforce Europe's commitment towards *solidarity*, which includes offering citizens the same level of protection all across the territory of the EU 27 + 4, including all aviators operating at aerodromes "open to public use";
- Strengthen the citizen's *protection* in terms of *security* and also transport safety;
- Project and promote these objectives outside EU borders through *a stronger voice in the world*, or, like in the case of the EASA system (i.e. EU 27 + 4, but open to more accessions), by expanding the implementation of the EU legislation to neighbouring States.

2.4.3 Specific objectives

The specific objectives are related to specific air transport objectives, which are also supported by other initiatives such as the creation of a Single European Sky. More in detail these specific objectives can be identified from the White Paper on the European transport policy published in 2001 and its mid term review[10] published in 2006. In fact the extension of the EASA system

[9] see http://europa.eu.int/comm/atwork/programmes/index_en.htm
[10] COM (2006) 314 final of 22 June 2006 – "Keep Europe moving: Sustainable mobility for our continent", published on http://ec.europa.eu/transport/transport_policy_review/doc/2006_3167_brochure_en.pdf

is closely related to some of these specific objectives, the applicable ones of which are summarized below:

- Availability of affordable and high quality transport solutions, to contribute to the free flow of people, goods and services, based on common rules, uniformly applied and covering all aviation domains;
- High level of mobility offered also to businesses, which implies an uniform and level playing field for the internal market, where no obstacles exist for establishing or expanding commercial enterprises anywhere in the EU 27 + 4;
- Promote minimum uniform labour standards, including better qualification of staff;
- Protect the safety and security of passengers and citizens, the former indeed being the prime objective of the proposed initiative, including reduction of costs related to accidents and incidents during taxing and standing;
- Increase efficiency and sustainability of the transport system, which includes economy of scale and rationalisation of costs of the related public sector (e.g. control of the total number of FTEs necessary in the public sector; moving technical prescriptions to the level of Community Specifications (CSs); assessment bodies for smaller enterprises; etc.);
- Introduce innovations (e.g. satellite navigation) which could increase protection of citizens everywhere, while reducing the associated costs for introduction (e.g. reduced ground equipment);
- Facilitate evolution of technology, by limiting unnecessary constraining binding rules;
- Position EU among the world leaders, by participating to international organisations and by expanding the area of application of specific EU legislation.

2.4.4 Operational objectives

Obviously the expected objectives of the extension of the EASA system are closely linked to the problems analysed in previous paragraph 2.3. In fact the policy chosen is meant to remedy or mitigate the existing problems and to lead to improvements. As such for them there is also a strong link to the impacts that describe the expected effects of the intervention which can then be monitored and evaluated ex-post (i.e. replying to the question: “did the intervention result in realising the objectives as defined at the beginning?”).

The operational objectives are hence related to the concrete actions related to the proposed EU intervention. As such their output is observable or even measurable and can be directly attributed to the action carried out. First of all these observable/measurable operational objectives are:

- amendments to the Basic EASA Regulation 1592/2002 by the European legislator;
- publication of common implementing rules for aerodromes and for aerodrome operators, as well as publication of Community Specifications (CSs);
- establishment of a working organisation;
- continuous monitoring of aerodrome safety;
- implementation of close relationship with SESAR;
- emergence on the market of aerodrome operators holding a single certificate and managing more than one aerodrome;
- establishment and implementation of standardisation inspections in the aerodrome domain.

2.4.5 Indicators

Three different levels of indicators can respectively be identified:

- *Outcome* indicators: expressed in terms of the ultimate desired impact on society. They are usually measured by global indicators and can be influenced by many other indicators or policies (e.g. aviation safety); in some cases it will be difficult, if at all possible, to correlate these results to the extension of EASA to aerodromes;
- *Results* indicators: i.e. immediate objectives of the proposed policy that needs to be reached in order to achieve the general goal. They are expressed in direct and short term effects of the measures under policy options and can also be influenced by other policies (e.g. the SES policy also aiming at improving aviation safety);
- *Output* indicators: i.e. the precise actions or direct effects which the policy proposed by the Agency's opinion on the matter is expected to produce. The achievement is under direct control of the Commission and can be easily verified.

Indicators allow monitoring if, and how much, the objectives are achieved. Defining them in advance is important, since this will allow assessment of the effects produced by the proposed policy intervention. The indicators on the level of specific and general objectives are closely related to the problems and the expected impacts, while the operational objectives result in simpler and more observable indicators related to the fulfilment of actions. The outcome indicators, linked to the general objectives and proposed by the Agency are presented in following Table 14:

Identified Problems	General Objectives	Outcome Indicators
Need to improve aviation safety at or near aerodromes.	Citizen's *protection:* transport and aviation safety.	Safety at all aerodromes open to public use.
Reduce the cost of aviation accidents caused at least partially by aerodrome factors.	*Prosperity*: reducing cost of accident caused at least partially by aerodrome factors.	Cost of damages caused by accidents and incidents during taxing and standing.
Need to de-fragment the safety regulatory framework.	*Stronger voice in the world*;	Influence revision of ICAO Annex 14.
	Expand the EASA system beyond the EU 27 + 4.	New States accessing EASA.
Need to base the regulatory framework on a solid legal basis.	*Prosperity:* building the internal market and promote labour mobility.	Emergence of operators of multiple aerodromes.
		Establishment of common competence schemes for aerodrome staff, carrying out tasks related to aviation safety.
	Solidarity: offering citizens the same level of protection across the territory of the EU 27.	Standardised application of common rules in the EU 27+4 to the maximum reasonable number of aerodromes.
Need to support SESAR from beginning, from the safety regulatory point of view.	*Prosperity*: support SESAR by offering it a clear safety regulatory interface.	Establish a formal interface SESAR vs Agency, while respecting the separation of roles.
Need to rationalise the effort for aerodrome safety regulation.	*Prosperity*: reducing cost connected to aerodrome safety regulation.	Implement the EASA mechanism for aerodrome safety regulation using much less than 90 FTEs. Reduce to the minimum the need for rulemaking at national level.

Table 14: Identified problems, general objectives and outcome indicators

Also the specific objectives can be related to the problems analysed in paragraph 2.3 above. These, and the indicators to monitor their achievement, are presented in Table 15 below:

Identified Problems	Specific Objectives	Result Indicators
Need to improve aviation safety at or near aerodromes.	Standardised application of common rules.	Extension of the standardisation inspections to the aerodrome domain.
	High quality transport solutions.	Implementation of Management Systems by all major aerodrome operators.
	Protect the safety of passengers, aviators and citizens.	Aerodrome safety indicators.
Cost of accidents and incidents due to aerodrome factors.	Reduction of costs related to accidents and incidents during taxing and standing.	Cost of damages caused by accidents and incidents during taxing and standing.
Need to de-fragment the safety regulatory framework.	Scope of EU legislation covering all aviation domains.	Amendment of Basic Regulation to include aerodromes.
	Common EU safety and interoperability rules for aerodromes.	Adoption of implementing rules for aerodromes and aerodrome operators.
	Global interoperability	Influence evolution of ICAO Annex 14
	Participation to international organisations.	Constant participation to GASR activities.
	Expand the area of application of specific EU legislation.	New States accessing EASA.
	Better standardisation of aerodrome equipment design and production.	Introduction of rules for aerodrome equipment and related design and production.
Need to base the regulatory framework on a solid legal basis.	Mobility offered also to businesses.	Introduction and exploitation of single aerodrome operator certificate.
	EU standards for better qualification of staff.	Establishment of common competence schemes for aerodrome staff, carrying out tasks related to aviation safety.
Need to support SESAR from beginning, from the safety regulatory point of view.	Introduce new operating concepts and technological innovations (e.g. satellite navigation).	Formalisation of regulatory interface.
		Clarification of the framework for certification of satellite navigation.
Need to rationalise the effort for aerodrome safety regulation.	Economy of scale and rationalisation of costs of the related public sector.	Much less than 90 FTEs of agency staff for rulemaking, standardisation and safety analysis for aerodromes.
		Staff available in competent Authorities
	Include technical prescriptions in CSs and facilitate evolution of technology, by limiting unnecessary constraining binding rules.	Inclusion of technical prescriptions in CSs.
	Empower assessment bodies to certify smaller aerodromes or enterprises.	Amend Basic regulation to empower assessment bodies.

Table 15: Identified problems, specific objectives and result indicators

Finally, the operational objectives can be associated to a number of detailed observable or measurable output indicators, as presented in Table 16:

Operational Objectives	Output Indicators
Amendment of the Basic Regulation to cover aerodromes.	Agency's Opinion delivered to Commission.
	Legislative proposal adopted by Commission.
	First reading by European Parliament.
	Council position.
	Second reading by European Parliament.
	Adoption of amendments.
Publication of common implementing rules for aerodromes and for aerodrome operators, as well as publication of Acceptable Means Compliance (AMCs).	Publish 1st NPA on implementing rules for aerodromes.
	Publish 1st NPA on implementing rules for aerodrome operators.
	Publish 1st CRD on implementing rules for aerodromes.
	Publish 1st CRD on implementing rules for aerodrome operators.
	Deliver 1st Opinion on implementing rules for aerodromes.
	Deliver 1st Opinion on implementing rules for aerodrome operators.
	Publish 1st set of aerodrome Community Specifications (CSs).
Establishment of a working organisation.	Recruitment of staff to reach 5 units for ATM/aerodrome rulemaking by 2008.
	Recruitment of staff for safety analysis of aerodrome occurrences.
	Recruitment of staff for standardisation inspections on the aerodrome domain by 2009.
	Designate external auditors able to participate to standardisation inspections on the aerodrome domain.
	Inclusion of aerodrome community into SSCC.
	Establishment of a group with external experts to draft implementing rules.
	Accreditation of first assessment body.
Continuous monitoring of aerodrome safety.	Inclusion of aerodrome safety analysis in the annual safety review from 2008.
Relationship SESAR	Assessment of SESAR safety deliverables.
Single Aerodrome Operator Certificate	Emergence on the market of aerodrome operators holding a single certificate and managing more than one aerodrome
Establishment and implementation of standardisation inspections in the aerodrome domain.	Establishment of procedures for standardisation in the aerodrome domain.
	Plan the first series of standardisation inspections covering also the aerodrome domain.
	Carry out the first inspection covering the aerodrome domain.

Table 16: Identified problems, operational objectives and output indicators

2.5 Options available

2.5.1 Options for the preliminary impact assessment

In the preliminary impact assessment mentioned in paragraph 1.3.3 above, carried out (through a consultant company: ECORYS) in 2005 by the Commission services, 5 general alternative options had been considered:

- A) "do nothing" (i.e. do not change the situation expected after the first extension of EASA functions: EASA responsible for airworthiness, flight crew licensing and air operations; competent Authorities nominated a national level responsible for ANS, including pan-European providers, and aerodromes);
- **B) Progressively extend the EASA system in rulemaking, certification and standardisation inspections to the domains of ATM, ANS and aerodromes;**
- C) Extend the SES mechanism of mandates to EUROCONTROL to aerodrome safety regulation and give EUROCONTROL also tasks in the field of certification and standardisation inspections;
- D) Establish a totally new European Agency to support the Commission for the safety regulation of ATM, ANS and aerodromes;
- E) Confer to the "extended" EASA (as per option B) also the responsibility for carrying out specific ATM operational functions (e.g. Air Traffic Flow Management).

That study concluded that Option B was the preferred one, based on the consultant's analysis of the expected impacts and also supported by the judgment of the consulted stakeholders.

2.5.2 Options considered in the present RIA.

The Options A, C, D and E, listed above, do not therefore need to be assessed again in the present RIA. On the other side to actually implement Option B other important issues shall be assessed.

And indeed NPA 06/2006 contained 9 questions in this respect, also assuming that that the ultimate aim was to implement the already justified and chosen (by the Commission[11]) option B from 2.5.1 above.

Among the said 9 questions, however, question 2 in fact contained two separate issues: adequacy in general terms of the proposed essential requirements, but also alternatives for requirements addressing Rescue and Fire Fighting Services (RFFS). In the CRD indeed the analysis of these two different issues had already been split. The total number of questions contained in NPA has therefore to be considered 10. Among those 10 issues, in the opinion of the Agency, 4 do not need to be further analysed in terms of impact assessment.

Table 17 below lists them, including the reason for which further impact analysis is not deemed necessary:

[11] COM (2005) 578 final of 15 November 2005.

Questions in NPA 06/2006		Reason for not considering alternative options
N.	**Text**	
1	The Agency is interested in knowing if stakeholders agree that the establishment of dedicated high level essential requirements at Community level is the best means to set the safety objectives for the safety regulation of aerodromes.	Already assessed by EC through ECORYS (i.e. comparison of option B vs option A = "do nothing"). No further assessment necessary.
2 on ERs	The Agency is interested in knowing whether the attached essential requirements actually meet the criteria developed here above and whether they constitute a good basis for the safety and interoperability regulation of the aerodromes bearing in mind the envisaged scope	Qualitative judgment on ERs. No relevant alternative options identified.
5	The Agency would be interested to know stakeholders' views as regard: **a)** The need for detailed implementing rules to facilitate compliance showing with the essential requirements related to the physical characteristics and infrastructure of small aerodromes? **b)** The need for detailed implementing rules to facilitate compliance showing with the essential requirements related to the operation and management of small aerodromes? ***c)*** The relevance in this context of the segregation already proposed in the essential requirements, between large and small aerodromes	Possibility refused by overwhelming majority of stakeholders. Only possible option: proportionate IRs for all aerodromes (large and small). Not necessary to analyse alternatives. Proper RIA will accompany any future proposed implementing rules.
6	The Agency would be interested to know stakeholders views as regards: **a)** The need to require certification for the verification of compliance with the requirements related to the physical characteristics and infrastructure of small aerodromes? **b)** The need to require certification for the verification of compliance with the requirements related to the operation and management of small aerodromes? **c)** The relevance in this context of the segregation already proposed in the essential requirements, between large and small aerodromes	Possibility refused by overwhelming majority of stakeholders: certification required for all aerodromes. Not necessary to analyse alternative options for small ones.

Table 17: Issues in NPA 06/2006 whose impact does not need to be analysed in detail

For the remaining 6 issues, on the contrary, alternative solutions could be envisaged. Such alternative options are listed in Table 18 below and their impact will therefore be analysed in detail, in paragraphs 2.6 to 2.10 in the following.

Question in NPA 06/2006		Topic	Alternative Options		Analysed in RIA
N.	Issue		Id.	Description	par.
2 on RFFS	Requirements for rescue and fire fighting services (including competence of staff).	RFFS staff	2A	RFFS staff regulated in general and not specifically for aviation.	2.10
			2B	Specific aviation competence scheme and medical requirements for RFFS staff.	
			2C	RFFS staff regulated also through aviation common rules administered by competent Authorities, in particular for medical fitness.	
3	Aerodromes not open for public use subject to Common rules	Scope of common rules	3A	Only airports subject to common EU rules.	2.6
			3B	All aerodromes open to public use subject to common EU rules.	
			3C	All aerodromes (even if not open to public use or private) subject to common EU rules.	
4 + 9	Regulation of aerodrome equipment.	Aero drome equip.	4A	Aerodrome equipment not regulated at EU level.	2.7
			4B	Common EU rules (i.e. ETSO) for "non standard" equipment, implemented through declaration of conformity by manufacturer and declaration of verification by aerodrome operator.	
			4C	As 4B, but no declaration of verification required, since part of the aerodrome certification process.	
7	Single ADOC certificate.	Certif. process	7A	Certification process (encompassing infrastructure and management) required at each aerodrome	2.8
			7B	Individual certificate for infrastructure and equipment per each aerodrome, plus organisation certificate at company level for all companies operating more aerodromes.	
			7C	As 7B, but only when a "single" certificate is requested by the operator.	
8	Role of assessment bodies		8A	Accredited assessment bodies, in addition to competent Authorities, entitled to certify and oversee specific less complex aerodromes. Applicants decide to which certifying entity to address their request.	2.9
			8B	Accredited assessment bodies, in addition to competent Authorities, entitled to certify and oversee all aerodromes. Applicants decide to which certifying entity to address their request.	
			8C	Only accredited assessment bodies entitled to certify and oversee specific less complex aerodromes.	
9	Verification of conformity for aerodrome equipment	Aero drome equip	See row 4 + 9 above		

Table 18: Issues in NPA 06/2006 open to alternative options

2.6 Analysis of impacts of the scope of the common EU rules

2.6.1 Alternative options

The following alternative options for the scope of the common EU aerodrome safety rules have been identified in paragraph 2.5.2 above:

- 3A): Only airports (i.e. aerodromes serving commercial air traffic) subject to common EU rules;
- 3B): All aerodromes open to public use subject to common EU rules;
- 3C): All aerodromes (even if private and not open to public use) subject to common EU rules.

2.6.2 Target group and number of entities concerned

2.6.2.1 Aerodromes

The current edition (amendment No 9 of 15/06/06) of **ICAO Annex 14** defines an "aerodrome" as:

> *"A defined area on land or water (including any buildings, installations and equipment) intended to be used either wholly or in part for the arrival departure and surface movement of aircraft"*

The ICAO definition of aerodrome could be considered too wide, depending on the interpretation of the word "intended". If "intended" means "primarily dedicated", then only the commonly known aerodromes will be included. But, if intended means "legally allowed", than also a number of other pieces of water or land (e.g. lakes in Finland; snow fields on the Alps where disembarking skiers from helicopters is allowed; grass fields on a mountain from where to launch para-gliders; etc..) could be considered "aerodromes".

Therefore the above definition has been changed in the EU legislation[12], by introducing the concept of "especially adapted", which restricts the number of sites falling under the definition of aerodromes.

In the number of those "especially adapted" landing places, for instance presently in Slovenia (a "small" Member State), there are around 60 aerodromes, including short grass strips used only by recreational aviation. In Italy (a "large" Member State) the total is in the range of 400. In average it is assumed that there are about 200 "especially adapted" aerodromes per State (including the ones with the smallest and simplest runway), which means around 6000 within the EU 27 + 4. Alternatively it can be observed that in France, Germany and Sweden, almost the totality of aerodromes are published in the official Aeronautical Information Publication (AIP): respectively 441, 394 and 154. In Italy only about 100 are in AIP, but 300 more "avio-surfaces" do exist. In Poland, large State representative of Eastern Europe, 77 aerodromes are

[12] Article 2 of Council Directive 96/67/EC of 15 October 1996 on access to ground handling market at Community airports. (*Official Journal L 272, 25.10.1996, pages 0036-0045*).

present in AIP. In total within those five States one can then count around 1466 aerodromes. According to the DG-TREN statistical pocketbook 2006[13], the population in these five States amounts to 249.439 million people: therefore about 5.88 aerodromes exist per million people. According to the same pocketbook, the total population of the EU 27 +4, can be estimated in 503.500 million people for 2006. Applying the same ration of 5.88/million, one can then estimate, through this alternative means, a total number of aerodromes in the range of 3000. No precise aggregated official data are published on the matter. **For the purposes of this impact assessment, the figure of 4500 aerodromes in total is assumed** (i.e. the average between 6000 and 3000).

[13] http://ec.europa.eu/dgs/energy_transport/figures/pocketbook/2006

At the other extreme, according to EUROCONTROL[14] statistics, 42 airports located within the EU 27+4, recorded more than 50.000 movements in 2006 as listed in table 19 below:

N.	Airport	No of movements in 2006
1	Paris/Charles de Gaulle	270,753
2	Frankfurt	244,467
3	London Heathrow	238,361
4	Madrid/Barajas	217,635
5	Amsterdam	217,561
6	Munich	203,785
7	Barcelona	163,857
8	Rome/Fiumicino	157,906
9	London/Gatwick	131,914
10	Copenhagen/Kastrup	129,137
11	Vienna	128,773
12	Milan/Malpensa	125,712
13	Zurich	124,189
14	Brussels	123,736
15	Paris/Orly	116,833
16	Stockholm/Arlanda	113,364
17	Manchester	112,645
18	Oslo/Gardermoen	108,034
19	Dusseldorf	107,090
20	London/Stansted	102,509
21	Dublin	95,554
22	Palma de Mallorca	94,995
23	Athens	92,520
24	Helsinki-Vantaa	86,160
25	Prague/Ruzyne	80,164
26	Geneva	79,235
27	Hamburg	78,679
28	Cologne/Bonn	75,197
29	Stuttgart	75,106
30	Warsaw/Okecie	72,259
31	Berlin-Tegel	68,714
32	Lisbon	68,211
33	Nice	68,198
34	Milan/Linate	64,891
35	Lyon/Sartolas	64,334
36	Edinburgh	62,448
37	Budapest/Ferihegy	62,360
38	Malaga	62,089
39	Birmingham	57,665
40	Las Palmas	57,001
41	London/Luton	55,038
42	Glasgow	52,332

Table 19: Airports with more than 50,000 movements in 2006

[14] EUROCONTROL eCODA Annual Digest 2006.

Since the traffic is expected to increase almost steadily in future years, the total number of such "large" airports, with more than 50,000 movements/year, can be estimated in the range of 50. But all aerodromes open to scheduled commercial air traffic (which in Europe is always international due to the implementation of the "seventh liberty") have to be certified according to ICAO provisions, including some airports (non included in the previous table) serving the capital town of some EU Member States, like the Baltics, or Bulgaria or Romania).

In addition, from the safety point of view, one single accident of one modern large passenger aircraft can cause about 100 victims, and so the common rules and the regulatory framework should aim at minimising such sad events, regardless of the type and volume of commercial traffic (i.e. frequent charter or scheduled).

The number of aerodromes affiliated to the European branch of the Airport Council International (ACI), estimated consulting the data base of that organisation on 02 August 2006, is around 350 in the States of the EU 27 + 4.

408 aerodromes have an ICAO designator, according to the working draft (August 2006) of the ICAO EUR Air Navigation Plan.

Finally, in application of Article 4.1 of Council Directive 96/67/EC of 15 October 1996 on access to the ground handling market at Community airports, each year the Commission publishes in the Official Journal the list of airports open to commercial air transport. The most recent list, covering the EU 27, was published on 17 November 2006 at page 13 of Official Journal C 279. From that source the data in Table 20 can be derived:

Airports	**Whose annual traffic: > 2 million passengers; or > 50,000 tonnes of freight**	**1 to 2 million passengers; or 25,000 to 50,000 tonnes of freight**	**Open to commercial air transport**	**TOTAL**
EU 27 (data from Official Journal)	95	49	464	608
Estimations for Iceland, Liechtenstein, Norway and Switzerland	5	11	76	92
TOTAL	**100**	**60**	**540**	**700**

Table 20: Number of airports open to commercial air transport

So for the purpose of the present RIA an estimation of 700 airports available to commercial air traffic by large aeroplanes is assumed.

But in addition it is necessary to estimate the number of aerodromes "open to public use": i.e. also to general aviation, air taxi or aerial work, in the absence of commercial air transport by large aeroplanes. The term "open to public use" is widely used, but not defined by ICAO. Nevertheless in the EUROCONTROL AIS data base, on 02 August 2007, 2145 aerodromes were present, as listed in table 21 below:

State	AERODROMES					
	Public	Private	Military	Joint Civil/ Military	Aero Clubs	TOTAL
Austria	32	21	3	0	0	56
Belgium	7	13	17	1	0	38
Bulgaria	5	0	0	0	0	5
Cyprus	3	0	1	0	0	4
Czech Rep.	67	13	0	2	5	87
Denmark	29	12	1	3	0	45
Estonia	9	2	0	0	0	11
Finland	38	44	3	0	0	85
France	345	51	29	3	13	441
Germany	212	176	0	4	2	394
Greece	38	1	17	2	0	58
Hungary	9	0	0	0	0	9
Iceland	60	3	0	0	0	63
Ireland	18	9	0	0	0	27
Italy	49	29	12	9	0	99
Latvia	3	1	0	0	0	4
Lithuania	7	0	0	1	19	27
Luxembourg	1	1	0	0	0	2
Malta	1	0	0	0	0	1
Netherlands	15	0	9	1	0	25
Norway	45	1	7	4	0	57
Poland	8	14	23	0	32	77
Portugal	28	2	7	0	0	37
Romania	18	0	0	0	0	18
Slovakia	8	0	1	0	7	16
Slovenia	12	1	0	0	0	13
Spain	87	3	3	9	0	102
Sweden	29	83	41	1	0	154
Switzerland	11	30	0	1	0	42
U.K.	72	71	5	0	0	148
TOTAL	**1266**	**581**	**179**	**41**	**78**	**2145**

Table 21: Aerodromes in the EUROCONTROL AIS data base

The figures contained in the table above do not always match with those gathered through GASR members, informally consulted, which had been presented in paragraph 2.3.3.3 above. In particular it appears that in France there are plans to certify only 70 airports out of 441 aerodromes present in the AIP, while the Czech Republic seems to aim at certifying 9 airports out of 87 known to EUROCONTROL. On the contrary Slovenia stated their willingness to certify 67 aerodromes, while only 13 are known to AIS. In addition the above data may neither be complete (e.g. Bulgaria has 5 aerodromes in AIS, while Austria, of comparable dimensions, has 56) nor based on the same definitions (e.g. it is known that in Italy, in addition to the 99 aerodromes in AIP, there are hundreds of "avio-surfaces" as defined in their administrative system[15]).

[15] As published on the ENAC web site on 02 August 2007 : http://www.enac-italia.it/avioeli/avio_00.asp

Nevertheless the above figures offer the possibility of estimating the number of aerodromes open to public use[16], using the definition proposed by the Agency. Should the Commission or the legislator modify the definition, the affected number could of course vary.

It is then assumed for the purpose of the present RIA that:

- All the 1266 civil public aerodromes presently contained in AIP (i.e. 1266) will be included in the common definition of "open to public use";
- All the 581 private aerodromes already published in AIP will decide to be included in the number of the aerodromes "open to public use", in order to attract more traffic (other private aerodromes, not published in AIP, may elect not to be open to public use);
- 179 military aerodromes will be out of the scope of the EU legislation, but the 41 for joint civil/military use, will be covered;
- All the 78 aerodromes operated by Aero Clubs will choose to be open to public use and then they will be in the scope of the EU common rules (in other words this means selecting the worst case for the present RIA in terms of impacted entities).

The number of aerodromes "open to public use" present in the AIP is then: 1266 + 581 + 41 + 78 = 1966. However, since quite a number of aerodromes open to general aviation are not present in AIP, **the number of aerodromes "open to public use" which could be subject to the proposed common rules is estimated in the range (AIP + 50%) of 3000 aerodromes.**

In relation to the 3 options identified in 2.6.1 above, in conclusion the estimated number of aerodromes falling in the scope of the EU common rules is presented in Table 22:

OPTION		Estimated Number of Aerodromes
Id.	**Description**	
3A	Only airports (i.e. aerodromes serving scheduled commercial air services) subject to common EU rules	**700**
3B	All aerodromes open to public use subject to common EU rules	**3000**
3C	All aerodromes (even if private and not open to public use) subject to common EU rules	**4500**

Table 22: Aerodromes in the scope of the EU common rules

2.6.2.2 Aerodrome operators

The issue of operators managing multiple aerodromes is discussed in paragraph 2.8 below.
For the purpose of present paragraph 2.6, it is therefore assumed that there is one operator for each aerodrome. In the simplest cases contained in the total number of 4500 aerodromes in the EU 27 + 4, this operator may even be a single physical person. In the most complex cases it can be a company employing thousand of staff.

[16] "open to public use" means that the use of the area and facilities of the aerodrome can be planned by any pilot-in-command of a General Air Traffic (GAT) flight either because the opening hours and services available are made known to the public, or because a contact point, from which to obtain a prior permission, is published in addition to publicly available aerodrome information, provided the aircraft and the pilot qualifications comply with conditions imposed to ensure the safety of operations.

It should however be noticed that the Agency's Opinion suggest to impose the obligation for a formal Management System (i.e. mainly Safety and Quality Management) only to the operators of airports serving commercial scheduled air services. The impact of the possible EU regulation on the other operators will be minimal, since limited to enshrine into EU law the best practices already largely applied today.

It is then assumed that the **number of aerodrome operators significantly impacted by the legislative proposal will be in order of 700**, i.e. equal to the number of airports serving modern (IFR) commercial air traffic by large aeroplanes. And it is assumed that this number does not change across the three identified options.

2.6.2.3 Aerodrome ground handlers

At each airport open to scheduled commercial air services, a number of ground handling companies (either air carriers themselves or companies specialised in ground handling), may operate, on the basis of mentioned Council Directive 96/67/EC[17]. On the contrary, in the absence of commercial air transport, ground handling is usually responsibility of the aerodrome operator and no law exists to change this. The following therefore applies only to option 3A (i.e. the 700 airports open to scheduled commercial air services), where:

- At "large" airports with more than 2 million passengers/year (or more than 50,000 of freight/year), free market and competition is allowed for ground handling;
- At "medium" airports above 1 million passengers (but less than 2) or above 25,000 tonnes of freight, at least two different companies shall offer ground handling;
- "self handling" by air carriers shall be allowed at any "small" airport open to commercial air transport.

Therefore the estimations in table 23 below, relevant for option 3A, can be assumed:

Number of airports	**"Large"**	**"Medium"**	**"Small"**	**TOTAL**
	100*	**60****	**540**	**700**
Average number of ground handlers per airport	3.4	2	1 ("self –handlers")	N.A.
TOTAL	**340**	**120**	**540**	**1,000**

* 95 counted in COM (2006) 821 final of 24 January 2007 – Report from the Commission on the application of Council Directive 96/67/EC of 15 October 1996.
** 49 counted ibidem

Table 23: Estimated number of ground handlers for option 3A

[17] Council Directive 96/67/EC of 15 October 1996 on access to the ground handling market at Community airports *(Official Journal L 272 , 25/10/1996 P. 0036 – 0045).*

The number estimated above is very close to the number published by the Commission in Annex E of said COM (2006) 821 of 24 January 2007, summarised in Table 24 below:

Number of handlers in EU 15						
Source: SH&E limited, October 2002, reproduced in Annex E of COM(2006) 821						
Category	**Third party handlers**		**Self handlers**		**TOTAL**	
	Before Directive 96/67	**After Directive**	**Before**	**After**	**Before**	**After**
Passenger handling	89	172	156	145	245	317
Baggage handling	64	102	55	47	119	149
Freight & Mail handling	116	155	80	83	196	238
Ramp handling	73	113	62	60	135	173
Fuel & Oil handling	78	80	3	10	81	90
TOTAL EU 15	**420**	**622**	**356**	**345**	**776**	**967**

Table 24: Ground handlers in COM (2006) 821 by Commission

It should however be noticed that the data in Table 24 above were collected in 2002, referring only to the EU 15 (i.e. before 2004) and not to the EU 27 + 4 considered by present RIA. From this perspective, and 5 years later, they could be considered underestimated. But on the other side, the data were counted airport per airport, while third party handlers or self handlers, may well operate at more than one site. From this perspective they have to be considered overestimated. In other words the two effects are assumed to more or less balance each other and so the final numerical result of 1000 is considered sufficiently valid.

Therefore the total number of affected ground handling companies, applicable to option 3A, is estimated to be 1,000. No ground handlers different from the aerodrome operator, will apply to possible options 3B and 3C.

2.6.2.4 Competent Authorities

Competent aviation authorities, designated by the national Governments, today carry out two main tasks in relation to aerodrome safety:

- rulemaking (i.e. transposing ICAO provisions into national legal order and integrating them);
- certification and oversight (including audits and inspections) of the aerodromes.

Transferring the vast majority of rulemaking tasks to EASA is in the scope of the legislative proposal. On the contrary the second task will remain responsibility of the said Authorities at the local level for proximity reasons. It is not expected that EASA will be involved in aerodrome certification and oversight.

But EASA, in addition to rulemaking, will carry out standardisation inspections (or audits) of the competent Authorities. Both the Agency and the local competent Authorities will be affected by the proposed legislation.

In it, nothing prevents States to either establish joint competent Authorities, or to delegate certification and oversight tasks to an Authority established by a neighbouring State. There is

however presently no evidence that this will happen. Equally States may decide to designate competent Authorities at regional level. This is already the case of the German Länder. In Germany therefore it is assumed that there will be 16 competent Authorities instead than one. **Considering this fact, in the present RIA it is assumed that the total number of Authorities competent for oversight of aerodrome safety at local level within the territory of the EU 27 + 4, will be not in the range of 30, but in the range of 46 (31 – Germany + 16 Länder) plus the Agency.**

2.6.2.5 Summary of affected entities

In conclusion, on the basis of the information presented in sub-paragraphs 2.6.2.1, 2.6.2.2, 2.6.2.3 and 2.6.2.4 above, the number of concerned entities is estimated in table 25 below:

OPTION		Estimated Number			
Id.	**Description**	**Aerodromes**	**Aerodrome operators with formal MS**	**Ground handlers**	**Authorities**
3A	Only airports (i.e. aerodromes serving commercial air traffic) subject to common EU rules	**700**	**700**	**1000**	**46 + Agency**
3B	All aerodromes open to public use subject to common EU rules	**3000**			
3C	All aerodromes (even if private and not open to public use) subject to common EU rules	**4500**			

Table 25: Aerodromes in the scope of the EU common rules

2.6.3 Safety impact

A better regulatory framework, also employing the available resources in a more rational way, will definitely contribute to improve safety at the aerodromes in the scope of the EU legislation. However, no tools exist to quantify with sufficient certainty this effect for the future years on the aerodrome safety indicators (e.g. those referred in paragraph 2.3.1 above). Nevertheless, in qualitative terms, it is estimated that extending the basic EASA Regulation to aerodromes, will lead also to the following significant safety impacts:

- significant improvement of the quality of the certification and oversight tasks carried out by competent Authorities, through standardisation inspections carried out by the Agency; this will apply to all the three options;
- reinforcement of the formal quality and safety management for major aerodromes, in the entire territory of the EU 27 + 4, which means little improvement for option 3A (since most aerodromes covered by that option already have such management tools);
- aerodromes included by options 3B and 3C, although not obliged to implement a fully fledged and formal Safety Management System, will nevertheless be obliged to implement the measures for management and operations contained in Chapter B1 of the

essential requirements. Both options 3B and 3C will then have an highly positive impact in terms of safety. However option 3B includes aerodromes "open to public use" and therefore with a volume of traffic grater than the rest included in option 3C (the latter covering also private aerodromes not open to public use). In quantitative terms of probability of accidents or incidents, option 3B is therefore considered even better than 3C;

- better legal certainty about the rules to be applied and better identification of related responsibilities and processes to verify conformance; also quality of the rules improved by the systematic consultation of stakeholders (also industry and operators in addition to Authorities) which is a key feature of the EASA system. This will be particularly relevant for options 3B and 3C, since the aerodromes in 3A are normally already subject to sufficient oversight; however, as noted in the bullet above, the additional aerodromes in option 3C serve a negligible additional number of passengers;
- some de-fragmentation of the regulatory framework, since the proposed essential requirements impose to all actors involved in aerodrome safety to establish formal and controlled interfaces among them. This will be highly significant for options 3A and 3B (where such interfaces do exist), but neutral for option 3C, because at these smaller landing sites there is neither Air Traffic Control, nor commercial ground handlers. However it should also be considered that presently about 1260 aerodromes are already certified (or planned to be certified in the EU 27 + 4): limiting this number to only 700 (in the EU legal order States can not impose additional requirements because this will distort competition) will then represent a regression in safety terms, related to option 3A, which then has to be considered very negatively in this respect;
- EASA could promote the presence and influence of the EU 27 + 4 States in ICAO and GASR, which in turn could lead to a marginal effect in terms of improvement of their deliverables; this will occur mainly due to centralisation of rulemaking and safety analysis, which is invariant across the three possible alternative options;
- Accession of new States to the EASA system will contribute to better safety for citizens even when flying out of the present EU 27 + 4; however this possible expansion will be determined in general terms by the attraction exerted by the Community system and, more specifically for EASA, by the efficiency and effectiveness of its system; in other words the extension of EASA to aerodromes, will have a neutral impact in this respect, far all the three identified options;
- At most complex aerodromes, sufficient oversight by Authorities is today implemented, which also includes oversight of the competence scheme of some staff; the Agency opinion however suggests to introduce competence schemes for all staff executing tasks related to the safety of aviation at or near aerodromes (e.g. including all persons authorized for unescorted access to the movement area), which will result in a slight improvement for major aerodromes (option 3A), where such practice is already largely applied (e.g. voluntarily by air transport industry). Much more significant will be the effect for option 3B, taking also into account that the continuous increase of traffic leads to using more intensively some once "minor" aerodromes, while the emergence of Very Light Jet (VLJ) on the market might lead to a greater utilisation of commercial air taxi; the latter indeed often served by aerodromes covered by option 3B; for proportionality reasons, complex competence schemes will not likely be imposed to the minor aerodromes; so even the effect for option 3C is only slightly significant;
- Finally the proposed centralization of rulemaking will lead to freeing some of the estimated 99 FTEs presently employed for this task across the EU 27 + 4 States; it is assumed that about 30 FTEs will still be necessary for rulemaking across the States (to cover the aerodromes out of scope of the EU legislation and to contribute to the

development of common rules); this means that about 70 (i.e. + 17% on the 400 estimated available today) FTEs could be diverted at national level from rulemaking to certification and oversight. All States today focus their resources on the major aerodromes, so for option 3A the effect will be neutral; on the contrary it will be significant for option 3B, where the freed resources could be addressed. The quantity of such resources and the social relevance on the minor landing sites makes this neutral for option 3C.

In conclusion, applying the methodology presented in paragraph 2.1.2 above (including a weight factor of 3 for the safety impacts), and having selected the applicable result indicators linked to specific objectives from paragraph 2.4.5, scores can be attributed for the safety impact of the three options related to the extent of the scope of the amendment to the Basic Regulation, as presented in following Table 26:

Result Indicators relevant for safety impact of the scope of EU legislation	**Scoring of options**		
	3A	**3B**	**3C**
Number of covered aerodromes	**700**	**2000**	**7000**
Extension standardisation inspections	+ 2	+ 2	+ 2
Management System by major aerodrome operators	+ 1	+ 3	+ 2
Aerodrome safety indicators	+ 1	+ 1	+ 1
Aerodromes in basic regulation	- 3	+ 3	0
Adoption of common implementing rules	+ 2	+3	+ 2
Evolution ICAO Annex 14	+ 1	+ 1	+ 1
Participation to GASR activities	+ 1	+ 1	+ 1
New States accessing EASA	0	0	0
Competence schemes for aerodrome staff	+ 1	+ 3	+ 1
Staff in competent Authorities for certification and oversight	0	+ 2	0
TOTAL	**+ 6**	**+ 19**	**+ 10**
WEIGHTED TOTAL (Score x 3 for safety)	**+ 18**	**+ 57**	**+ 30**

Table 26: Scoring of the safety impact of the extension of the scope of EU legislation

2.6.4 Economic Impact

2.6.4.1 Standardisation inspections by Agency

Extension of the standardisation inspections by EASA to the competent Authorities (already established for airworthiness) to the aerodrome domain, will happen following the present general plan for periodic audits, based on 1 visit every 2 years (frequency = 1 : 2 = 0.5 visits/year). In addition however, ad hoc inspections may be carried out in special circumstances. So the frequency is assumed to be 10% higher: 0.55.

Such visits normally last 5 days, and are carried out by a team of 3 auditors, dedicated to the aerodrome domain[18]. In the most expensive case all the 3 auditors will belong to EASA. Such

[18] According to Article 6.1 of Commission Regulation (EC) 736/2006 of 16 May 2006 on working methods of the EASA for conducting standardisation inspections, the Agency's audit team should be composed by no less than 3 members. 1 or 2 members could be seconded by the member States.

worst case is considered in the present RIA. The average effort per one inspection visit is then 5 days x 8 hours x 3 persons = 120 working hours.
Since the frequency of the visits per year has been estimated equal to 0.55, this means (120 x 0.55) that in average **about 66 yearly working hours are necessary to carry out one standardisation visit by the Agency to one single competent Authority, during the two years planning period.**

However, according to said Regulation 736/2006, the Agency aerodrome auditors will also have to contribute to development and amendments of the audit protocols and of the audit questionnaires. In addition they will have to contribute to the preparation of plans, coordination of the visits and preparation of them, reporting on the results and following up any plan for possible corrective actions. The number of necessary yearly working hours to be spent by the Agency to standardise one competent Authority, is therefore estimated to be, in average, at least 3.5 times higher (i.e. one week for the visit plus 2.5 weeks of associated desk work) than the 66 hours mentioned above.

Therefore 66 x 3.5 = **231 hours in average are necessary per year by EASA for the standardisation of one competent Authority in the aerodrome domain**, comprising the actual visit and the associated desk work before and after the visit.

In the budget (Titles 1 and 2) of the Agency for the year 2008, the total cost of staff (salaries + administration, but excluding travel) is around 43.8 M€, for an average head count of 338. Therefore 1 FTE in EASA costs around 130 k€/year, considering also Temporary Agents in the B grades, Contract Agents, and Auxiliaries. However the staff relevant to the present RIA is mostly composed by Temporary Agents in A grades. For them a cost 15% higher is estimated (i.e.; 150 k€/year). In one year (365 days) there are 52 Saturdays and an equal number of Sundays. In addition about 30 days of leave have to be considered and 16 bank holidays. The remaining number of useful days is then: 365 – 104 -30 – 16 = 215 days. Assuming 5 days for sickness and other absences, the remaining net number of days is 210/year. Assuming 7.5 working hours per day, this represents 1575 working hours in the year. It is assumed that around 20% of the hours are spent in routine, planning, reporting and other administrative tasks, so the number of "billable" hours is around 1260. The cost of one billable hour is then (150,000/1260) in the order of 120€ for the Agency staff (excluding overhead which is applicable only for certification activities, which are not relevant for the present RIA). About 25€/hour are estimated to represent travel cost, since standardisation inspections have to cover the entire continent including its periphery. So the total cost of one billable hour in this RIA is assumed to be, for the Agency staff in the order of 145€ (including travel).

In conclusion in this paragraph and throughout the present RIA, **1 FTE** for the Agency **is assumed to represent**:

- An average cost of 150,000 €year;
- **210 working days** and 1260 billable hours, at a cost of 120€ + 25€ for travel per hour.

In paragraph 2.6.2.4 above, the number of involved Authorities has been estimated equal to 46, therefore for the standardisation inspections, the yearly burden on the Agency will total:

- 231 hours x 46 Authorities = around 10,626 billable hours/year;
- this, divided by 1260, represents **about 9 FTEs in the Approvals and Standardisation Directorate** (permanent state after transition);

- This number of inspector will require **additionally 1 Section manager and 1 assistant; so the number of FTEs will be 11**, leading (x 150,000€) to a total estimated cost for the Agency of about 1,650,000 €/year.

Standardisation inspections do however require effort also by the inspected Authorities. It is assumed that, in average, they will employ 1 coordinator per each of the 5 days of the visit (= 37.5 working hours). Multiplying 37.5 for the frequency of 0.55 leads to 21 working hours per year to be sustained by each Authority. Even the Authorities will however have to fill questionnaires and produce information. Therefore it is assumed that in average they will have to spend twice as much time = 42 working hours/year to be audited by EASA for the aerodrome domain. In total, for the 46 Authorities in scope, this represents:

- 42 hours x 46 Authorities = around 1932 working hours/year;
- i.e. about 1.5 FTEs for the total of the EU 27 + 4;
- assuming for them an average labour cost of about 110 € (2006) per working hour (0 travel cost since the Authorities are inspected at their premises) for all the EU 27 + 4 (comprising the States of new accession), the cost of 1 FTE amounts to 138,600€ = around 207,900 €/year for the totality of the 46 involved Authorities.

The above assumption of a cost of around 110€/hour for the authorities is justified by the fact that data available to the Agency for the certification, show an average cost for experts of said authorities about 9% less than Agency's staff. And indeed 120€ (the cost assumed for the Agency) -9% results in about 110€/hour.
In conclusion the cost of extending the Agency's standardisation inspections to the aerodrome domain, bearing in mind that aerodrome operators are not directly involved in this activity if not very occasionally, can be estimated as presented in Table 27 below:

Parameter	For the Agency	In total for 46 competent Authorities	For aerodrome operators	TOTAL
FTEs	11	1.5	0	**12.5**
k€	1,650	208	0	**1,858**

Table 27: Estimated cost of standardisation inspections in the aerodrome domain

This cost, since the number of Authorities will not vary across options 3A, 3B and 3C, is assumed to remain invariant.

2.6.4.2 Certification of aerodromes

To assess the economic impact of the extension of the Basic EASA Regulation to the certification of aerodromes, firstly it shall be noticed that today aerodromes (and their operations) are already subject to two layers of rules:

- ICAO provisions contained in the Annexes to the ICAO Convention (mainly Annex 14) and associated documents or technical Manuals;
- National legislation on aerodrome safety, normally built around the transposition of the ICAO provisions above.

The applicable ICAO standard (i.e. par. 1.4.1 of Volume I of Annex 14, applicable from 27 Nov 2003) however requires only aerodromes open to international air traffic (common

understanding being commercial air transport by large aeroplanes) to be certified. In addition that organisation recommends (par. 1.4.2 therein) certifying all aerodromes open to public use. Within EU on the basis of Regulation 2408/1992 on the access to commercial air transport market, all airports open to commercial air transport are also open to international traffic. In addition the free movement of persons within the EU implies that all aerodromes open to public use are also open to international general aviation. The distinction between "international" and "open to public use" made by the mentioned ICAO provisions, may therefore not be relevant within the EU, on the basis of legislation already established.

In other words the ICAO provisions (standard + recommended practice) already impose the obligation to certify aerodromes (and related services). However, since neither “open to public use” is defined by ICAO, nor the application of the recommendation is mandatory, while no EU law on the matter yet exists, in order to estimate the cost of the proposals by the Agency, it is necessary to preliminarily assess how far the ICAO standard and recommended practice are presently implemented by the EU 27 + 4 States: i.e. assess how many aerodromes are already certified (or planned to be shortly certified).

Based on the principle of proportionate analysis, the information gathered through the GASR, albeit partial, is used. In particular the number of aerodromes certified (or shortly expected to be certified), as presented in paragraph 2.3.3.3 above, is copied in the right most column of Table 28 below. The other columns contain some of the data from previous Table 21 in previous paragraph 2.6.2.1:

State	A E R O D R O M E S					
	Public	Private	Joint Civil/ Military	Aero Clubs	TOTAL	Announced as certified*
Belgium	7	13	1	0	38	6
Czech Rep.	67	13	2	5	87	9
Denmark	29	12	3	0	45	36
Estonia	9	2	0	0	11	11
Finland	38	44	0	0	85	28
France	345	51	3	13	441	70
Ireland	18	9	0	0	27	28
Italy	49	29	9	0	99	50
Latvia	3	1	0	0	4	8
Netherlands	15	0	1	0	25	14
Portugal	28	2	0	0	37	50
Romania	18	0	0	0	18	33
Slovakia	8	0	0	7	16	8
Slovenia	12	1	0	0	13	67
Spain	87	3	9	0	102	42
Sweden	29	83	1	0	154	99
U.K.	72	71	0	0	148	142
TOTAL	**834**	**334**	**29**	**25**	**1350**	**701**

* or shortly to be certified, by members of the GASR working group.

Table 28: Comparison of aerodromes certified versus total number

From Table 28 above it can firstly be observed that 17 States have already certified (or shortly plan to do so) 701 aerodromes. Considering the remaining States in the EU 27 + 4 for which no

data are available, since 31 = 17 + 80%, it is estimated that presently around 701 + 80% = 1260 aerodromes are already certified (or planned to be shortly certified) in EU 27 + 4.

This number of 1260 is largely greater than the 700 aerodromes considered by option 3A. Therefore it must be assumed that said option will not impose any additional cost to anyone for aerodrome certification.

Vice versa, since 3000 aerodromes were estimated in paragraph 2.6.2.1 above, as impacted by option 3B, for it about 1740 additional (i.e. 3000 – 1260 already certified) aerodromes should possibly be certified. These 1740 aerodromes, are however the simplest ones in the total of 3000. The effort which they require for certification (and subsequent periodic yearly oversight) can then be estimated in average in 2 inspectors from the competent Authority auditing the site for 2 days (= 4 working days = 30 working hours). This number could be multiplied by 4 to cater for all the preparation and the follow up activities, before an after the visit, similarly to the desk work estimated necessary to prepare and follow up the EASA standardisation visits. Therefore for certification of one aerodrome a competent Authority should spend in average 30 x 4 = 120 working hours. For the total of 1740 aerodromes this leads to 208,800 working hours = (dividing by 1260) around 165 FTEs. The social aspects of this number are discussed below in paragraph 2.6.7. From the economic point of view it is assumed that the cost of one FTE is in average for all the EU 27 + 4 (comprising the States of new accession) 138,600 €. **The total estimated cost for the Authorities of the additional aerodrome certification requirements stemming from option 3B is then estimated in 165 x 138,600 = 22,869,000 €.**

For the aerodrome operators the effort is estimated in 1 person x 2 days during the audit visit (i.e. 2 working days = 15 hours), Plus 3 days to collect and provide information to the Authority: total 5 days = 37.5 hours. This, multiplied by 1740 aerodromes leads to the total of 65,250 working hours, i.e. about 52 FTEs. In monetary terms, assuming the same cost as for the authorities of 138,600 €/FTE, the **cost for aerodrome operators per year, in case of option 3B totals 7,207,200 €.**

In option 3C the complexity of the involved aerodromes (i.e. the 1500 additional with respect to option 3B) is even less. It is therefore assumed that the effort per single additional aerodrome could be in the range of 3/4 of that estimated for option 3B, which leads to:

- 90 working hours per aerodrome by the competent Authority;
- 28 hours for the aerodrome operator.

Then for the Authorities, in case of option 3C: 135,000 working hours in addition to the 208,800 estimated for option 3B, i.e. 343800 hours in total, so around 273 FTEs, and representing an estimated cost of 37,674,000 € per year.
For the aerodrome operators the estimated additional effort will be 28 x 1500 = 42,000 working hours, to be added to the 65,250 estimated for option 3B, leading to a total of 107,250 hours, i.e. around 85 FTEs, and 11,730,000€.

In conclusion the additional cost of aerodrome certification stemming from the extension of the Agency's scope to the aerodrome domain, bearing in mind that the Agency itself will not directly carry out this activity, can be estimated as presented in Table 29 below:

Parameter	For the Agency	In total for 46 competent Authorities	For aerodrome operators	TOTAL
Option 3A = 700 aerodromes				
FTEs	0	0	0	**0**
k€ 2006	0	0	0	**0**
Option 3B = 3000 aerodromes				
FTEs	0	165	52	**217**
k€ 2006	0	22,869	7,207	**30,076**
Option 3C = 4500 aerodromes				
FTEs	0	273	85	**358**
k€ 2006	0	37,674	11,730	**49,404**

Table 29: Estimated additional cost for aerodrome certification

2.6.4.3 Safety and Quality Management System

Based on the proposed legislation, operators of "large" aerodromes will not only be subject to the certification process, but also mandated to implement a (safety & quality) management system (S+QMS), encompassing all the internal procedures of the aerodrome operator company as described in the related Aerodrome Manual and aiming at continuous improvement based on continuous collections and analysis of safety data.

It should again be noticed that the paragraph 1.5.3 of ICAO Annex 14 (amendment 8, applicable 23 November 2006) requires certified aerodrome operators to implement a Safety Management System (SMS), which, as a minimum:

a) Identifies safety hazards;

b) Ensures that remedial actions, necessary to maintain an acceptable level of safety are implemented;

c) Provides for continuous monitoring and regular assessment of the safety level achieved; and

d) Aims to make continuous improvement to the overall level of safety.

The EASA Opinion on the matter, not only includes the above ICAO prescriptions in Part B of the proposed essential requirements, but it explicitly requires the aerodrome operator to establish arrangements with other relevant organisations to ensure continuing compliance with the essential requirements for aerodromes. These organisations, include, but are not limited to, aircraft operators, air navigation service providers, ground handling service providers and other organisations whose activities may have an effect on aircraft safety.

In other words the proposed EU legislation, will slightly extend the responsibilities of the SMS by a certified operator of a "large" aerodrome (i.e. the 700 considered in option 3A), to include the interfaces with other companies, whose activities may influence the aviation safety at or near the aerodrome. Among these other companies, air operators and air navigation service

providers, are already obliged by other pieces of legislation, to have in place such a management system: for them therefore, the Agency's proposal will imply no additional burden. On the contrary, it will affect the 1000 ground handlers, whose number has been estimated in paragraph 2.6.2.3 above.

However the Commission guidelines for ex-ante evaluation of costs, state that, in the case an obligation is already imposed internationally, only the cost of the additional requirements imposed by the proposed EU legislation shall be considered. In this case the "origin" of the SMS requirement can then be attributed 95% to ICAO and only for the remaining 5% (i.e. the controlled interfaces) to the proposed EU legislation. It is then assumed that, for the 700 airports in option 3A, this will then represent an additional cost of about 5%, compared with their present cost for Safety & Quality Management. Assuming that in average 3 FTEs could be employed for S+QMS per aerodrome operator, this additional effort represents, for each aerodrome, 0.15 FTEs, i.e. around 190 working hours and 20,790 €/year. **For the 700 involved aerodromes this represents about 105 FTEs, and then around 14,553,000 €/year.**

It is assumed that a similar effort (i.e. about 100 FTEs) will have to be spent by the 1000 **ground handlers** to fulfil the same requirements. For them a labour cost 10% less then the aerodrome operators is assumed (i.e. 124,740 €/FTE), leading to a total cost of **12,474,000 €/year.** No additional costs are foreseen on this matter for either the competent Authorities or the Agency.

But the essential requirements attached to the EASA Opinion on the matter, also propose to alleviate this S+QMS requirements for the aerodromes not serving commercial scheduled air services. These segregation criteria were also broadly supported by stakeholders, as summarised in Table 30 below:

Segregation parameter	Stakeholders' reaction	Agency's position
More than 5 people necessary for aerodrome operations	Not supported	Not proposed
Open in IMC or operated at night	Many stakeholders concurred that IFR operations are more complex than VFR	Proposed as segregation parameter in the Opinion, since scheduled traffic operates under IFR.
More than 50,000 movements per year	Stakeholders observed that, since the number of accidents is very low, while a single accident of a large passenger aircraft could cause around 100 fatalities, the size of the aircraft is even more important than the frequency	The Agency then proposes to use the presence of scheduled commercial air services (which includes frequent charter traffic) as a segregation criterion. This excludes air taxi, which can be operated using small aircraft
MTOM > 10 t or certified seat configuration for 19 or more passengers		Criterion not yet necessary. It may be used in future, possibly with reference to 5.7 t MTOM [19].

Table 30: Segregation criteria

[19] Threshold defined in Chapter 1 of ICAO Annex VI and used in Chapter 4 Part II and in the title of Part III of Annex 8, as well as in Standard 2.6.2 of Annex 14. The same is published by the Agency in its "CS-Definitions" and applied to segregate large and small aeroplanes for airworthiness purposes.

This means that the additional 2300 (i.e. 3000 – 700 in option 3A) aerodromes in option 3B, in the Agency's opinion, will avoid the cost of a formal S+QMS and associated Manual. In 2.6.4.2 immediately above, it has been estimated that about 1260 are already certified (or being certified) in the EU 27 + 4, according to the ICAO requirements: so they are obliged to have in place a full SMS today. Since the Agency's proposal limits this obligation to only 700 airports (i.e. in line with the ICAO standard but not applying the non mandatory recommended practice), it shall be observed that the burden for 560 (i.e. 1260 – 700) aerodromes, in option 3B will be relieved. For such medium/small size aerodromes, the saved S+QMS effort is estimated in only 0.5 FTEs, which means 630 working hours/year and 69,300 € (2006)/year.

Therefore option 3B, relieving this cost for 560 aerodrome operators, will allow to save 280 FTEs, i.e. 38,808,000 €/year. For the same option, since these aerodromes host well less than 1 million passenger per year, it is assumed that there will be no ground handlers significantly involved. This benefit will however be mitigated by the 105 FTEs for the aerodrome operators and 14,553 k€/year already calculated, since option 3B encompasses the 700 included in 3A. In conclusion the **net benefit of option 3B for aerodrome operators will be:**

- **+105 – 280 = -175 FTEs;**
- **14,553 – 38,808 = - 24,255 k€/year.**

For ground operators the impact will remain as already estimated for option 3A.

For option C the matter is neutral for the additional 1500 aerodromes, since S+QMS is neither implemented today at those minor airfields, nor it is realistic to envisage doing so. So the net result will remain as already estimated for 3B

In conclusion the additional (or reduced) cost for formal aerodrome safety and quality management, stemming from the essential requirements proposed by the Agency can be estimated as presented in Table 31 below:

Parameter	For the Agency & Authorities	For aerodrome operators	For ground handlers	TOTAL
Option 3A = 700 aerodromes				
FTEs	0	105	100	**205**
k€ 2006	0	14,553	12,474	**27,027**
Option 3B = 3000 aerodromes				
FTEs	0	- 175	100	**- 75**
k€ 2006	0	- 24,255	12,474	**- 11,781**
Option 3C = 4500 aerodromes				
FTEs	0	- 175	100	**- 75**
k€ 2006	0	- 24,255	12,474	**- 11,781**

Table 31: Estimated additional (or reduced) cost for S+QMS

2.6.4.4 Cost of damages during taxing and standing

No reliable tools exist today to evaluate with precision the quantitative safety effects of new legislative measures. So it is very difficult to develop precise related economic estimations.
However in paragraph 2.6.3 above it was concluded that all the three options had a positive safety impact, with the impact of 3C almost twice as good then 3A, and 3B three times as good as 3A. In addition, in paragraph 2.3.1.9 it had been concluded that the cost of aviation accidents and incidents due to aerodrome factors (infrastructure, equipment, operations) in the EU 27 + 4 totals around 1164 M€/year in € 2006.

It is then assumed that, since option 3A is conducive to safety benefits, its related economic impact can not be assessed as zero. On the other hand a very prudent estimation of only 1% benefit is estimated, which means a benefit in terms of avoided damages of 11,640 k€ (2006)/year.

Since option 3C as been assessed twice as good in terms of safety impact, for it a 2% benefit is assumed, which, while still being an extremely prudent estimation, means 23,280 k€ (2006)/year of avoided costs.

Finally for option 3B, three times as good than 3A, the benefit is estimated in 11,640 x 3 = 34,920 k€/year.

2.6.4.5 Common rules

The new proposed legislation can be seen as providing the legal basis for common transposition of the ICAO provisions, for the EU 27 + 4, replacing national legislation in this sector. This will be mainly carried out through adoption of common implementing rules and community specifications as appropriate.

Bearing in mind that the number of FTEs for standardisation has already been accounted in paragraph 2.6.4.1 above, it's then assumed that, for rulemaking activities in the aerodrome domain, the number of FTEs needed by EASA is 6 (1 manager + 4 administrators + 1 assistant). 2 more FTEs are deemed necessary to support rulemaking with sufficient analysis of aerodrome safety data and with safety research.

The total additional effort in the Agency (in addition to what has been estimated for standardisation in paragraph 2.6.4.1 above) **should then be assumed equal to 8 FTEs = 1,200,000 €/year.**

However, in paragraph 2.3.3.3 above, it was estimated that today 99 FTEs are employed for rulemaking across the EU 27 + 4. Centralising rulemaking will free, in the Agency's opinion:

- about 30% of said resources in case of option 3A, since in this case many aerodromes will remain subject to national rules. This saving represents about 30 FTEs and then 4,158,000 €/year;
- About 60% of the resources in case of option 3B, which covers the totality of aerodromes open to public use: i.e. a saving of 60 FTEs, equal to 8,316,000 €/year; around 40 FTEs will still be necessary in the States to develop safety rules for aerodromes out of the scope of the EU legislation, or to establish implementing measures at national level for the aerodrome vicinity. Some effort may also be dedicated to contribute to rulemaking in the EASA system to which they also belong;

- Finally, for option 3C, 70% of the effort could be saved (i.e. 70 FTEs = 9,702,000 €/year) Even in this case in fact, around 1 FTE per State is assumed to remain necessary to contribute to the development of the common rules.

No additional cost is foreseen for the aerodrome operators, albeit a slight economic benefit, whose quantification is here omitted, may derive from the centralisation of rulemaking also for them (i.e. participating to the process through associations at continental level and dealing with only one rulemaking entity and only with one set of rules). The same slight benefits (i.e. one set of rules for all aerodromes open to public use in the EU 31 + 4) could materialize for air operators.

In conclusion centralising rulemaking will lead to save 4,158 (option 3A), 8,316 (3B) or 9,702 k€ (3C) at national level, versus 1,200 k€ of additional cost for the Agency. In any case there will be a benefit for the community.

2.6.4.6 Competence scheme for aerodrome staff

The safety benefits assessed above will also derive from better, and better applied, competence schemes for the staff whose activities may affect the aviation safety at or near aerodromes.

In case of **option 3A** it is assumed that such staffs are in average in the order of 70 people per each of the 700 involved airports (including ground handlers). In fact in this range of 700 airports, only 160 register more than 1 million passengers per year as discussed in 2.6.2.3 above. For them hundreds of staff could be involved. For instance Aéroport de Paris manages 14 aerodromes with about 10,000 staff (i.e. around 700 people per aerodrome, but including the ground side and services not immediately affecting aviation safety). But for the other 540 aerodromes it is then assumed that the number of safety related staff will not exceed the 50 units. Then it is assumed that the additional effort for their training will be in average in the order of 1 day per year per person = 70 x 700 x 1 = 49,000 days/year = 367,500 working hours (290 FTEs). So the total cost for them will be around 124,740 € x 290 FTEs = **36,175 k€ (2006)/year.**

For **option 3B** the average size of the additional aerodrome organisations is much smaller, so an average number of 10 involved staffs per additional aerodrome are assumed. This leads for 2300 (i.e. 3000 – 700 already considered in 3A) aerodromes, following the same logic immediately above, 10 people x 2300 aerodromes x 1 day to 23000 days in total, meaning 172,500 yearly hours (i.e. 137 FTEs) of received training, which represent a cost of 17,089 k€/year. This cost is additional to that estimated for option 3A, therefore for option 3B the cost is estimated in 36,175 + 17,089 = **53,264 k€/year**.

Along the same lines, in **option 3C** the very minor airfields are included, so only 3 people per additional aerodrome are assumed (across the 1500 of them), leading to 4,500 staffs, 33,750 yearly hours (around 27 FTEs) of received training and 3,368 k€/year, additional to option 3B. In conclusion 53,264 + 3,368 = **56,632 k€** of total yearly cost.

2.6.4.7 Technical prescriptions in CSs

Putting the majority of detailed technical prescriptions at the level of Community Specifications (CSs), will lead to economic benefits as well, such as:

- Simplified (and therefore cheaper) procedure for their adoption and management;
- Possibility of delegation to voluntary industry standards, which means less cost for the taxpayers;
- Quicker amendment following the evolution of technology and so less obstacles for market access by new products;
- Greater flexibility during the certification process and so reduction of the number of working hours spent in negotiations between the regulator and the regulated entity.

However the above benefits are very difficult to quantify in a simple way. The use of econometric models is on the other side considered disproportionate. Therefore these economic effects are not quantified in the present RIA.

2.6.4.8 Summary of economic impact

On the basis of the conclusions reached in previous sub-paragraphs 2.6.4.1 to 2.6.4.7, the following summary Table 32 can be compiled, to compare the economic impact of the three options concerning the scope of the EU legislation:

Estimated cost of the scope of EU legislation	**Thousand € (2006)/year**		
	3A	**3B**	**3C**
Number of aerodromes	**700**	**3000**	**4500**
Extension standardisation inspections	1,858	1,858	1,858
Aerodromes in basic regulation (i.e. certification)	0	30,076	49,404
Management System by major aerodrome operators	27,027	-11,781	-11,781
Cost of damages during taxing and standing	- 11,640	- 34,920	- 23,280
Adoption of common implementing rules	- 4,158	- 8,316	- 9,702
Competence schemes for aerodrome staff	36,175	53,264	56,632
Agency staff for rulemaking and safety analysis	Already accounted above		
Staff in competent Authorities for certification and oversight			
Technical prescriptions in CSs	Not quantified		
TOTAL	**49,262**	**30,181**	**63,131**

Table 32: Summary of economic impact of scope of EU legislation

From it one can observe that option 3C will be the most expensive, while 3B is the cheapest.

The monetary terms in table 32 above, are then translated into scoring in following table 33:

Result Indicators relevant for economic impact of the scope of EU legislation	Scoring of options		
	3A	3B	3C
Number of aerodromes	**700**	**3000**	**4500**
Extension standardisation inspections	- 3	- 3	- 3
Aerodromes in basic regulation (i.e. certification)	0	- 2	- 3
Management System by major aerodrome operators	- 2	2	2
Cost of damages during taxing and standing	1	3	2
Adoption of common implementing rules	1	2	3
Competence schemes for aerodrome staff	- 1	- 2	- 3
Agency staff for rulemaking, standardisation and safety analysis	0	0	0
Staff in competent Authorities for certification and oversight	0	0	0
Technical prescriptions in CSs	0	0	0
TOTAL	**- 5**	**0**	**- 2**
WEIGHTED TOTAL (Score x 2 for economic impact)	**- 10**	**0**	**- 4**

Table 33: Scoring for economic impact of scope of EU legislation

2.6.5 Environmental impact

Nothing in the considered legislative proposal aims at increasing traffic, building new infrastructure or relaxing environmental rules. The effect of any of the three considered options has to be considered then neutral in relation to environmental aspects.

2.6.6 Social Impact

Three main impacts can be envisaged, once the proposal to extend the competences of EASA to aerodromes will have been adopted:

- The systematic consultation of stakeholders, integral part of the EASA's system, will immediately be extended to the aerodrome domain, starting with inclusion of representative bodies in the Safety Standards Consultative Committee (SSCC) and continuing not only with expert groups, but also with public consultations through NPAs. This in general terms will contribute not only to develop better rules, but also to increase solidarity among involved citizens and will offer a very solid basis for defending the European positions at world wide level;
- Increase of the competence of the staff executing tasks which could affect aviation safety at or near aerodromes, considering that the greatest part of the total cost estimated in 2.6.4.8 above for any of the three options is indeed devoted to increase the professional competence of staff. For option 3B, the economic value of increased training and qualification is even grater than the total cost (due to savings elsewhere); so in social terms the proposal will increase the quality of employment across the EU 27 + 4, as well as the competitiveness of the EU system;
- Finally the proposed centralization of rulemaking will lead to freeing some FTEs presently employed for this task across the EU 27 + 4 States; but this is the only perspective in which less staff will be required; on the contrary, in various paragraphs of the previous economic assessment, estimations were offered also in terms of additional FTEs. This is summarised in table 34 below:

FTEs	Agency	Authorities	Aerodrome operators	Ground handlers	TOTAL
Option 3A = 700 aerodromes					
Standardisation	11	2	0	0	**13**
Certification	0	0	0	0	**0**
(S & Q) Manag. S.	0	0	105	100	**205**
Common Rules	8	- 30	0	0	**- 22**
Staff competence	0	0	145	145	**290**
TOTAL	19	- 28	250	245	**486**
Option 3B = 3000 aerodromes					
Standardisation	11	2	0	0	**13**
Certification	0	165	52	0	**217**
(S & Q) Manag. S.	0	0	- 175	100	**- 75**
Common Rules	8	- 60	0	0	**- 52**
Staff competence	0	0	282	145	**427**
TOTAL	19	107	159	245	**530**
Option 3C = 4500 aerodromes					
Standardisation	11	2	0	0	**13**
Certification	0	273	85	0	**358**
(S & Q) Manag. S.	0	0	- 175	100	**- 75**
Common Rules	8	- 70	0	0	**- 62**
Staff competence	0	0	309	145	**354**
TOTAL	19	205	219	245	**688**

Table 34: New jobs (FTEs) created

From above Table 34 it can be observed that option 3C could create more about 700 jobs in the highly qualified area of aviation safety. Option 3A could create about 480 jobs, but around 30 staff in the Authorities will need to be allocated to other tasks. Finally option 3B will create only slightly more than 500 new jobs, but increases in the required work force will be observed in any segment of the involved entities, albeit 4 times more in the private than in the public sector. For any of the option the increase of Agency staff will be less than 20.

The above considerations are then translated into scores for the applicable result indicators in following table 35:

Result Indicators relevant for social impact of the scope of EU legislation	Scoring of options		
	3A	3B	3C
Extension standardisation inspections	1	1	1
Management System by major aerodrome operators	2	- 1	- 1
Aerodromes in basic regulation (i.e. certification)	0	2	2
Adoption of implementing rules	- 1	- 2	- 2
Competence schemes for aerodrome staff	1	3	2
TOTAL	**3**	**3**	**2**
WEIGHTED TOTAL (Score x 2 for social impact)	**6**	**6**	**4**

Table 35: Scoring of the social impact related to the scope of the proposal

2.6.7 Impact on other aviation requirements outside present EASA scope

The Agency's Opinion on safety and interoperability regulation of aerodromes, fully takes into account the so called "EU-OPS", the first extension of EASA (i.e. to air ops, flight crew licensing and safety of third country operators) and the existing legislation on the "Single European Sky" (SES). No conflicting essential requirements are proposed.

In addition the Agency has already stated that duplication of implementing rules and/or rulemaking processes, with respect to those possibly stemming from the SES context, for radio communication, meteo, navigation or surveillance systems, will be avoided.

Any of the three possible options is therefore neutral in this respect.

2.6.8 Multi Criteria Analysis (MCA) and recommended option

According to the methodology described in paragraph 2.1.2 and the scores attributed in paragraphs 2.6.3 to 2.6.7, the following matrix for MCA can be provided:

Weighted score of options for the scope of EU legislation		**3A**	**3B**	**3C**
Number of covered aerodromes		**700**	**2000**	**7000**
impact item	**Weight**			
Safety	3	18	57	30
Economic	2	- 10	0	- 4
Environmental	3	0	0	0
Social	2	6	6	4
On other aviation regulations	1	0	0	0
WEIGHTED TOTAL		**14**	**63**	**30**

Table 36: Multi Criteria Analysis for the scope of the proposal

From it one can observe that that option 3B scores about twice as better than options 3C, and even more when compared to 3A. In particular, option 3B:

- Scores almost twice as better in safety terms than the other options;
- It is the cheapest, leading to a total yearly burden of around 30 M€ (2006)/year on the EU 27 + 4 aviation stakeholders, of which less than 2.850 M€ for new (19) staff inside the Agency;
- Could create about 500 new qualified jobs in total: about 100 in the authorities and the rest inside aerodrome operators and ground handlers.

That is why the Agency has included such option 3B in its Opinion: i.e. all aerodromes open to public use, subject to common EU rules. This proposal has also been supported by the 90% of the 20 national Authorities having participated to the consultation, as summarized in table 37 below:

<table>
<tr><th colspan="4">SCOPE of COMMUNITY LEGISLATION
according to replies by Aviation Authorities to Question 3 of NPA</th></tr>
<tr><th colspan="3">Aerodromes OPEN to PUBLIC USE</th><th rowspan="2">Only AIRPORTS open to regular COMMERCIAL traffic</th></tr>
<tr><th>+ all others even if not open to public use</th><th>+ specific cases (e.g. instruction in flying)</th><th>Only</th></tr>
<tr><td rowspan="2">Belgium</td><td rowspan="3">Netherlands</td><td>Austria</td><td rowspan="3">Germany
(BMVBS according to a reaction to CRD)</td></tr>
<tr><td>Denmark</td></tr>
<tr><td rowspan="2">Czech R.</td><td rowspan="2">Romania</td><td>France</td></tr>
<tr><td>Greece</td><td rowspan="5">Italy
(according to a reaction to CRD)</td></tr>
<tr><td rowspan="2">Finland</td><td rowspan="2">Spain</td><td>Iceland</td></tr>
<tr><td>Ireland</td></tr>
<tr><td rowspan="3">Norway</td><td rowspan="2">Sweden</td><td>Slovak R.</td></tr>
<tr><td>Slovenia</td></tr>
<tr><td>UK</td><td>Switzerland</td></tr>
<tr><td>4</td><td>5</td><td>9</td><td>2</td></tr>
<tr><td colspan="3">18</td></tr>
</table>

Table 37: Support by competent Authorities for aerodromes open to public use in the scope of Community legislation

2.7 Analysis of impacts of rules and implementation means for aerodrome equipment

2.7.1 Alternative options

The following alternative options for aerodrome equipment have been identified in paragraph 2.5.2 above:

- 4A): Aerodrome equipment not regulated at EU level;
- 4B): Common EU rules (e.g. ETSO) for "non standard" equipment, implemented through declaration of conformity by manufacturer and declaration of verification by aerodrome operator (the latter concerning integration and suitability for use on the site);
- 4C): As 4B, but no declaration of verification required, since part of the aerodrome certification process.

2.7.2 Target group and number of entities concerned

2.7.2.1 Competent Authorities

All the 46 competent Authorities (as estimated in paragraph 2.6.2.4 above) plus the Agency, will be affected by options 4B and 4C above. In addition, since the competent Authorities will be responsible even beyond the scope of Community legislation, they will anyway remain responsible for overseeing the safety of aerodrome equipment even in the absence of EU common rules (i.e. option 4A).

2.7.2.2 Aerodromes

Aerodrome equipment, such as visual and radio navigation aids, detection systems and in general other equipment is mentioned in some ICAO Annexes[20], but it could be unfair to require an owner or an operator of an aerodrome to be responsible for technologies for which

[20] E.g. Annex 3 on Meteorological Services for international air navigation; Annex 10 on Aeronautical Telecommunications and Annex 14 on Aerodromes.

they have no particular competence. In addition some of these equipments may already be covered by the SES framework[21], and in particular it's Interoperability Regulation[22]. The Agency also observes that some aerospace ground support equipment is already normalised by European Standard Organisations (ESO)[23]. Therefore in case of option 4A, there will be no specific additional EU rules for aerodrome equipment. But there will be essential requirements and related implementing rules and CSs for aerodromes. Very likely, being these common rules broadly based on ICAO Annex 14, as requested by virtually the totality of stakeholders, they will also cover some aspects of aerodrome equipment (e.g. frangibility; type and quantity of visual aids; power supply for lighted visual aids; performance of fire fighting vehicles; etc…). Verification of such equipment, when implemented, will be an integral part of the aerodrome certification process.

Therefore, even in case of **option 4A** (i.e. neither further ETSOs nor other rules for aerodrome equipment; not any involvement of the design and production organisations of such equipment), **all aerodromes in the scope of the EU legislation (i.e. 3000** per option 3B recommended in paragraph 2.6.9 above), will have to comply with some requirements related to some aspects of installed aerodrome equipment.

But the Agency then expressed the opinion that minimum performance requirements, necessary for aviation safety, should be set for aerodrome equipment at the level of implementing rules or CSs, leaving to the industry the responsibility for standardisation and conformity assessment of produced aerodrome equipment in general, as this is being done in the frame of the so called "new approach"[24]. This will imply the possibility of issuing European Technical Standard Orders (ETSO) as Acceptable Means of Compliance (AMCs) when deemed necessary for safety reasons, as today is already the case for "non standard" aircraft parts, being the latter already in the scope of the Basic Regulation.

So even in the case of options 4B or 4C, all the covered 3000 aerodromes will potentially be impacted.

2.7.2.3 Aerodrome operators

All the operators of those 3000 aerodromes will be impacted as well. However there are cases of one company managing more than 1 aerodrome (e.g. like AENA operating close to 50 aerodromes). From information available through the web (mainly membership of ACI Europe) some data on operators of multiple aerodromes are presented in table 38 below:

[21] Regulation (EC) No 549/2004 of the European Parliament and of the Council of 10 March 2004, laying down the framework for the creation of the Single European Sky (*OJ L 096 31.03.2004 p.1*).
[22] Regulation (EC) No 552/2004 of the European Parliament and of the Council of 10 March 2004 on the interoperability of the European Air Traffic Management network (*OJ L 96, 31 March 2004, pages 26-42*).
[23] In particular by the Comité Européenne de Normalisation (CEN). However also CENELEC and ETSI are European Standard Organisations. Further information can be found on http://ec.europa.eu/enterprise/newapproach/standardization/harmstds/index_en.html
[24] Some 25 Directives adopted since 1987 on the basis of the "new approach" stemming from Council Resolution of 07 May 1985 on the new approach to technical harmonisation and standards, Council Resolution of 21 December 1989 on a global approach for certification and testing which states the guiding principles on conformity assessment and Council Decision 93/465/EC laying down detailed procedures for conformity assessment.

Entity	Web site	Principal place of business	Number of operated aerodromes			
			In home country	In EU 27 + 4	Outside EU 27 + 4	TOTAL
Aeroporti di Roma	www.adr.it	IT	2	0	0	2
Aeroportos de Madeira		PT	2	0	0	2
Aeroportos de Portugal	www.ana-aeroportos.pt	PT	7	0	0	7
Aéroports de Paris	www;adp.fr	FR	14	0	0	14
Aeropuertos y Navegación Aérea	www.aena.es	ES	47	0	0	47
Avinor	www.avinor.no	NO	46	0	0	46
British Airport Authority	www.baa.co.uk	UK	7	1	10	18
Copenhagen Airports	www.cph.dk	DK	2	0	0	2
CSL – Czech Airports Administration		CZ	4	0	0	4
Dublin Airport Authority	www.dublinairportauthority.com	IE	3	0	0	3
Finavia	www.finavia.fi	FI	25	0	0	25
Fraport	www.fraport.com	DE	3	2	5	10
Luftfartsverket	www.lfv.se	SW	19	0	0	19
Manchester Airport Group	www.manaiport.co.uk	UK	4	0	0	4
Ministry of Transport		CY	2	0	0	2
Ministry of Transport and Communications		GR	38	0	0	38
Ministry of Transport		LT	2	0	0	2
Polish Airports (PPL)	www.lotnisko-chopina.pl	PL	3	0	0	3
Regional Airports Ltd		UK	2	0	0	2
Slovak Airports Aut.	www.airportbratislava.sk	SK	5	0	0	5
Soc. Eser. Aeroport.	www.sea-aeroportimilano.it	IT	2	0	0	2
Svenska Regionala Flygplatser förbundet	www.flygplatser.nu	SW	34	0	0	34
TBI plc		UK	3	0	0	3
23	**PARTIAL TOTAL**		**276**	**3**	**15**	**294**
	TOTAL		**279**			

Table 38: Operators of multiple aerodromes

The data in the table above may not be complete or perfectly accurate; so it is assumed that there are in the EU 27 + 4 **about 25 entities operating more than one aerodrome and that the total number of such aerodromes is around 275**.

Therefore it is estimated that the **number of affected operators will be in the range of** (3000 – 275 + 25) **2750** to take this fact into account. Even this will apply to all the three possible options 4A, 4B and 4C.

2.7.2.4 Aerodrome ground handlers

The Annex to the Council Directive on ground handling, lists a number of services in this category. Some of those services in turn require equipment to be used on the aerodrome movement area. A summary of possible examples of aerodrome equipment is offered in Table 39 below, including whether such equipment could also be referred to ICAO Annex 14 or the essential requirements proposed by the Agency:

Ground handling services[25] requiring equipment on the movement area		**Examples of equipment**	**Referred to in**	
			ICAO Annex 14	**ER**
Passenger		Stairs, buses, "fingers"		A.1.f
Baggage		Loading and unloading devices		B.1.a
Ramp	Guidance to parking	Docking devices	YES	A.3.a
	Parking	Blocks		B.1.a
	Engine start	External power units		B.1.a
	Towing	Tow tugs		B.1.a
Services to aircraft	Cleaning	Toilet drainage		B.1.a
	Air conditioning and power	External power units		B.1.a
	De- Anti-icing	De icing	YES	B.1.a
Fuelling		Fixed or mobile fuel equipment		B.1.h
Catering		Vans		B.1.a

Table 39: Examples of equipment required for ground handling

From table 39 above, it can be observed that the essential requirements (ERs) proposed by the Agency, in principle more comprehensively cover aerodrome equipment used for ground handling, than ICAO Annex 14. This occurs because, as explained in the Memo describing them, the ERs have been developed through a risk assessment and mitigation process ("top-down") then complemented by a "bottom up" verification, which considered not only Annex 14, but also other existing EU legislation. This is however in line with the opinions expressed by many stakeholders, as presented in CRD 06/2006. Stakeholders had indeed mentioned as examples of equipment to be regulated, also de-icing equipment, fuel supply equipment, ground power supplies and starters and more in general ground handling equipment.

It is therefore assumed that, out of the 1000 ground handling companies, only 10% (i.e. 100) will be affected by option 4A (i.e. impact aerodrome equipment only indirectly through implementing rules or CSs based on ICAO provisions for aerodromes). **On the contrary the totality of them will be impacted in case of either option 4B or 4C.**

[25] According to the Annex to Directive 96/67/EC of 15 October 1996.

2.7.2.5 Design and production organisations of aerodrome equipment

Radio-navigation, surveillance (e.g. radars) and aeronautical communication systems, albeit installed at the aerodrome could alternatively be covered as necessary by "Single European Sky" rules for their performance and conformity assessment. Which legal basis has to be used (either the Agency's Basic Regulation or the "Single Sky"), in order to avoid duplication of rulemaking processes and subsequent rules, will be decided case by case by the Commission. It is therefore not appropriate to consider this type of equipment in the present RIA, since it is already in the scope of EU aviation legislation.

In addition, the Agency proposal covers other equipment mentioned in ICAO Annex 14, as highlighted in Table 40 below:

Requirements for aerodrome equipment		**Examples of equipment**	**Referred to in**	
			ICAO Annex 14	**ER**
Friction measuring devices		μ meters	2.9	A.1.a..v
Passenger handling		Stairs, buses, "fingers"		A.1.f
Baggage handling		Loading and unloading devices		B.1.a
Indicators and signalling devices		Wind direction indicators	5.1.1	A.3.a
Runway and taxiway lights		Runway centreline lights	5.3.12	A.3.a
Electrical power systems		Supplies for navigation aids	8.1	A.3.b
Rescue equipment		Ambulances; boats	9.1	B.1.k
Extinguishing agents and RFFS vehicles		Discharge rate	9.2	B.1.k
Removal of disabled aircraft		Cranes	9.3	B.1.a
Frangibility		of CNS antennas	9.9	A.1.c.iii
Ramp handling	Guidance to parking	Docking devices	5.3.24	A.3.a
	Parking	Blocks		B.1.a
	Engine start	External power units		B.1.a
	Towing	Tow tugs		B.1.a
Services to aircraft	Cleaning	Toilet drainage		B.1.a
	Air conditioning and power	External power units		B.1.a
	De- Anti-icing	De icing	3.15	B.1.a
Fuelling		Fixed or mobile fuel equipment		B.1.h
Catering		Vans		B.1.a

Table 40: Examples of equipment in the scope of the extended Basic EASA Regulation

In the case of option 4A, no specific EU rules (e.g. ETSO) will be established for such equipment. Therefore **no design and production organisations will be impacted by option 4A.**

To estimate the number of the design and production organisations potentially affected by options 4B and 4C the Agency notices that at one of the major events organised by ACI Europe, planned at end of 2007 about 60 exhibitor spaces were offered[26]. A similar number exhibited at the "Airport Exchange" in December 2006. So **a number of about 100 potentially affected companies is assumed, with respect to design and production of aerodrome equipment, related to options 4B or 4C.**

[26] http://www.pps-events.com/apex/sponsors.asp

2.7.2.6 Maintenance organisations of aerodrome equipment

In addition it is assumed that maintenance of aerodrome equipment will be the responsibility of the entity using it (e.g. ground handlers or aerodrome operators). They will have to demonstrate to the competent Authority that the maintenance is properly organised and carried out, whether internally or through a third party. In the absence of safety evidence identifying significant risks deriving from poor aerodrome equipment maintenance, it is considered presently disproportionate to impose requirements on maintenance organisations for such equipment. Therefore they will not be impacted by the foreseen policy. Should the need emerge in the future for specific items of aerodrome equipment, a proper RIA will be carried out for that case.

2.7.2.7 Summary of affected entities

In conclusion, on the basis of the information presented in sub-paragraphs 2.7.2.1 to 2.7.2.6 above, the number of concerned entities is estimated in table 41 below:

<table>
<tr><th colspan="2">OPTION</th><th colspan="5">Estimated Number</th></tr>
<tr><th>Id.</th><th>Description</th><th>Aerodromes</th><th>Aerodrome operators</th><th>Ground handlers</th><th>Design** and production</th><th>Authorities</th></tr>
<tr><td>4A</td><td>Aerodrome equipment not regulated at EU level.</td><td rowspan="3">3000</td><td rowspan="3">2750</td><td>100</td><td>0</td><td>46</td></tr>
<tr><td>4B</td><td>ETSOs for “non standard” equipment and declaration of verification.</td><td rowspan="2">1000</td><td>100*</td><td rowspan="2">46 + Agency</td></tr>
<tr><td>4C</td><td>As 4B, but no declaration of verification required.</td><td>100*</td></tr>
</table>

* the actual number will be assessed during the RIA for each individual ETSO. In this case the order of magnitude could be in the range of the tenths, not of the hundreds.
** No regulation of maintenance organisations for aerodrome equipment presently foreseen.

Table 41: Number of entities affected by rules on aerodrome equipment

2.7.3 Safety impact

As explained in the Opinion, the Agency believes that also aerodrome equipment should be included in the scope of the amended Basic Regulation, so in turn also offering a solid basis for specifications developed by industry. This equipment, once produced, should of course be subject to a verification of compliance with the applicable ERs and implementing rules, as well as to other applicable legislation (e.g. on electro-magnetic interference) or pertinent community specifications.

When requested by the applicable ETSO (if issued), that equipment design will be certified and produced equipment accompanied by a declaration of conformity signed by the manufacturer also with reference to the ETSO (like aircraft parts). Designers and manufacturers in this case, will need to be authorized.

All the above will apply to both options 4B and 4C. On the contrary it will not apply to option 4A. Option 4B requires the aerodrome operator (in addition to the aerodrome certification process) to also subscribe a declaration of verification for each piece of equipment (when subject to ETSO) used or implemented at its aerodrome.

The Agency therefore believes that:

- Neither improvements nor regressions in terms of safety will be caused by option 4A (in fact the status quo);
- Both options 4B and 4C will contribute to safety in equal measure.

More in particular it is estimated that either option 4B or 4C will lead to the following significant safety impacts:

- better legal certainty about the rules to be applied to aerodrome equipment and better identification of related responsibilities and processes to verify conformance;
- hence more solid basis for industry standards;
- obligation imposed on the designers and manufactures to declare conformity of their products with safety rules;
- evidence of such declarations collected by the aerodrome operator and used during the certification process.

In conclusion, applying the methodology presented in paragraph 2.1.2 above (including a weight factor of 3 for the safety impacts), and having selected the applicable result indicators linked to specific objectives from paragraph 2.4.5, scores can be attributed for the safety impact of the three options related to aerodrome equipment, as presented in following Table 42:

Result Indicators relevant for safety impact of regulation of aerodrome equipment	**Scoring of options**		
	4A	**4B**	**4C**
Aerodrome equipment	**Do nothing**	**ETSO + declaration of verification**	**ETSO + aerodrome certification**
Aerodrome safety indicators	0	1	1
Adoption of common rules (i.e. ETSO)	0	1	1
Authorisations to organisations designing and producing aerodrome equipment	0	2	2
TOTAL	**0**	**4**	**4**
WEIGHTED TOTAL (Score x 3 for safety)	**0**	**12**	**12**

Table 42: Scoring of the safety impact of the options for aerodrome equipment

2.7.4 Economic Impact

Option 4A does not require any additional rule or ETSO for aerodrome equipment. Its economic impact can therefore be assessed as neutral.

On the contrary the approach proposed by either option 4B or 4C, is consistent on one hand with the “new approach” and therefore close to current industry practices already applied. On the other hand it is consistent with the Agency’s rules already established for aircraft parts. Related implementing rules or ETSOs, will specify the applicable safety and performance requirements for “non standard” equipment, as well as provisions for design or production organisations. Approval of design of such equipment, where applicable, will be followed by conformity assessment signed by the manufacturer.

However a precise impact assessment could only be carried out when proposing said rules or ETSOs.

In other words, presently, in the absence of any ETSO, the estimated cost is zero. This applies mainly to option 4C (i.e. only ETSO and associated processes for design and production).

But in addition the Agency, in line with stakeholders' position, also suggests that assessment of the proper implementation or use of specific aerodrome equipment on the site shall be considered. For this, option 4C assumes that verification of implemented equipment is an integral part of the aerodrome certification process. **Hence option 4C does not imply any additional cost, in respect to the aerodrome certification costs, already estimated in paragraph 2.6.4.2 above.**

On the contrary option 4B imposes on aerodrome operators an additional process (similarly to what the "Single Sky" presently contains[27] as addressed to ANSPs) of "declaration of verification" for installed or acquired aerodrome equipment. Option 4B will then not imply any additional costs for the competent Authorities, or the ground handling companies. For the Agency both options 4B and 4C will require a certain effort for rulemaking, which is however considered as having already been included in the global assessment of rulemaking costs in paragraph 2.6.4.5 above.

But option 4B will impose an additional process on aerodrome operators, not only to carry out verification of implemented systems (already done today and verified by certification of the aerodrome), but to administer the procedures, and for compilation and archiving of the declarations of verifications. It is estimated that for the major aerodromes (estimated as 700 in 2.6.2.1 above), this may imply about 0.5 FTEs (i.e. 630 working hours = 69,300 €/year), for a total economic burden on them of 69 k€ x 700 = 48,300 k€/year.
For the remaining 2300 (i.e. 3000 in scope – 700) the burden is estimated to be much smaller: 0.2 FTEs for each of them (= 252 hours = 27,720 €/year). Which, multiplied by 2300, leads to 63,756 k€ (2006)/year. So in total the additional cost of option 4B can be estimated (for the 3000 aerodromes in the scope) as 48,300 + 63,756 = 112,056 k€ (2006)/year. The estimated costs can then be summarized as in Table 43 below:

Estimated cost of regulation of aerodrome equipment	**Thousand € (2006)/year**		
	4A	**4B**	**4C**
Aerodrome equipment	**Do nothing**	**ETSO + declaration of verification**	**ETSO + aerodrome certification**
Equipment in basic regulation (i.e. declaration of verification)	0	112,056	0
Adoption of common implementing rules (ETSO)	0*	0*	0*
Design and production of aerodrome equipment	0*	0*	0*
TOTAL	**0**	**112,056**	**0**

* cost = zero in the absence of ETSOs. A specific RIA documenting costs and benefits will be carried out prior to issuing any ETSO.

Table 43: Summary of cost of regulation of aerodrome equipment

[27] Article 6 of Regulation (EC) 552/2004 of the European Parliament and of the Council of 10 March 2004, on the interoperability of the European Air Traffic management network (*OJ L. 96 of 31 March 2004, pages26-42).*

In addition to the costs estimated above, options 4B and 4C may however produce other economic impacts, such as:

- mutual recognition of design and production organisations for aerodrome equipment, in turn contributing to build the internal market;
- more standardisation and more competition for products offering the required quality, with positive effects on prices.

All the above quantitative and qualitative estimations of the economic impact can then be expressed by the scores in following Table 44:

Result Indicators relevant for economic impact of the regulation of aerodrome equipment	**Scoring of options**		
	3A	**3B**	**3C**
Aerodrome equipment	**Do nothing**	**ETSO + declaration of verification**	**ETSO + aerodrome certification**
Equipment in basic regulation (i.e. declaration of verification)	0	- 3	0
Adoption of common implementing rules (ETSO)	0	0	0
Design and production of aerodrome equipment	0	0	0
TOTAL	**0**	**- 3**	**0**
WEIGHTED TOTAL (Score x 2 for economic impact)	**0**	**- 6**	**0**

Table 44: Scoring of the economic impact of the options for aerodrome equipment

2.7.5 Environmental impact

ICAO Annex 14 does presently not contain provisions for the environmental impact of e.g. airport vehicles or any other material, fluid or agent used in aerodrome operations. The framework proposed by either option 4B or 4C, laying the foundations for possible future regulation of equipment, will have a slight (i.e. + 1) positive impact on the environment. Applying the methodology in paragraph 2.1.2 above, this slight impact has to be "weighted" 3.

2.7.6 Social Impact

Option 4A has to be considered neutral in social terms. On the contrary both options 4B and 4C might have a slight (+ 1) positive social impact in terms of:

- more qualified jobs in approved design and production organisations of aerodrome equipment;
- exit from the market of insufficiently structured companies;
- increase in the quality of the work carried out and therefore in the competitiveness of the European products in terms of ratio price/quality.

This slight positive impact, according to the methodology in paragraph 2.1.2 has to be weighted 2.

2.7.7 Impact on other aviation requirements outside present EASA scope

No ETSOs or implementing rules will duplicate existing rules established in the frame of the "Single Sky". Any of the three considered options will therefore be neutral in this respect.

2.7.8 Multi Criteria Analysis (MCA) and recommended option

According to the methodology described in paragraph 2.1.2 and the scores attributed in paragraphs 2.7.3 to 2.7.7, the following matrix for MCA can be provided:

Weighted score of options for the scope of EU legislation		**4A**	**4B**	**4C**
Aerodrome equipment		**Do nothing**	**ETSO + declaration of verification**	**ETSO + aerodrome certification**
impact item	**Weight**			
Safety	3	0	12	12
Economic	2	0	- 6	0
Environmental	3	0	3	3
Social	2	0	2	2
On other aviation regulations	1	0	0	0
WEIGHTED TOTAL		**0**	**11**	**15**

Table 46: Multi Criteria Analysis for aerodrome equipment

From the Table above, one can observe that that option 4A seems very poor when compared with the other two possible options. Among them 4C scores much better than 4B. In particular, options 4B and 4C:

- Score much better in safety terms than option 4A;
- Could lay the foundations for better environmental management at aerodromes;
- Could improve the quality and quantity of jobs in the design and production organisations of aerodrome equipment.

But option 4B could cost around 100 M€ (2006)/year, while option 4C, leads to no additional costs. That is why the Agency has included such option 4C (i.e. Community specifications voluntarily developed by industry and backed by Agency's ETSO whenever necessary to achieve proper safety levels; regulation of related design and production organisations and verification of implemented aerodrome equipment during the normal aerodrome certification and oversight process) in its Opinion.

2.8 Analysis of impacts of the certification process

2.8.1 Alternative options

The following alternative options for the certification process have been identified in paragraph 2.5.2 above:

- 7A): Certification process (encompassing infrastructure and management) required at each aerodrome (which in turn has been the baseline for paragraph 2.6 above);
- 7B): Individual certificate for infrastructure and equipment per each aerodrome, plus "single" organisation certificate at company level for all companies operating several aerodromes;
- 7C): As 7B, but only when a "single" certificate is requested by the operator.

2.8.2 Target group and number of entities concerned

2.8.2.1 Aerodrome operators

Ground handlers and design and production organisations of aerodrome equipment will not be affected by any of the three possible alternative options.

For the vast majority of aerodrome operators, managing one single aerodrome, whether at the end of the certification process one single document or two separate documents (i.e. one for the infrastructure; the second for operations and management) will be issued, will have a very negligible impact under any perspective. The impact of such certification process has already been assessed in paragraph 2.6 above, so, in case of option 7A, neither aerodromes nor aerodrome operators will be subject to additional impacts.

Vice versa, the around **25 operators** of multiple aerodromes, identified in paragraph 2.7.2.3, in total managing about **275 aerodromes, will all be impacted by option 7B**, obliging them to request a "Single" Aerodrome Operator Certificate.

In case of **option 7C**, each operator of multiple aerodromes, will decide whether or not to request a "single" certificate for its management (mainly centralized safety and quality management). Since this is presently not a universally established practice, it is assumed that this may involve around 40% of the potential candidates: i.e. **10 operators out of 25.** Since in average the mentioned 25 operators manage about 11 aerodromes each, it is then assumed that the number of possibly affected **aerodromes will be in the range of 100**.

2.8.2.2 Competent Authorities

The Agency's Opinion assumes that an aerodrome can be owned or managed by a public entity or by a private company or by under any other mechanisms (e.g. "corporatized" operator whose shares belong in majority or totality to public Authorities at national or local level). But, in any case, it also assumes that, when the operator is a public entity, the operations and management reporting line, shall be independent not only from the internal safety and quality reporting line, but also from the public certification and oversight function.

This principle of separation between oversight Authorities and economic organisations, is well established in airworthiness (even for design or production companies belonging to a State) and air operations. It has also been explicitly introduced in the Single European Sky[28].

It appears that:

- In Greece and Lithuania the Ministry of Transport is directly responsible (at least in some cases) for aerodrome management and operation. However both countries are members and actively participate to GASR: so a separate safety oversight function is assumed to be already established;
- In Cyprus also, the Ministry of Transport is responsible for operations and management of aerodromes, but that country is not member of the GASR: so there the establishment of a new safety oversight function might be necessary;
- in other States (e.g. France, Italy) public officials, in some cases residents at aerodrome, in addition of being responsible for safety oversight, are also responsible for the management of some activities (e.g. RFFS; local emergency plans).

[28] Article 4.2 of Regulation (EC) 549/2004 of the European Parliament and of the Council of 10 March 2004, laying down the framework for the creation of the Single European Sky (*OJ L.96 of 13 March 2004, pages 1-9*).

The latter question above however is irrelevant in terms of impact, since the essential requirements as proposed by the Agency, take into account such situations. So only the Cypriot Authority could possibly be affected by the mentioned principle of separation.

The Agency will not be affected, since it is not presently expected that it will directly be involved on certification and oversight of aerodromes or aerodrome operators.

Then, in case of option 7A, no impact on the Authorities will be induced in general, in addition to what has already been considered in paragraph 2.6 above (and apart mentioned Cypriot Authority).

Vice versa, in case of option 7B, all the 17 competent Authorities for the countries listed in paragraph 2.7.2.3 above, will be directly impacted by the certification and oversight processes.

Finally, in the case of option 7C, the number of directly involved Authorities will be no greater than the number of applicants (i.e. 10).

2.8.2.3 Summary of affected entities

In conclusion the number of concerned entities is estimated in table 47 below:

OPTION		Aerodrome operators	Aerodromes	Competent Authorities	
Id.	Description			In need to separate oversight functions	Exercising oversight
7A	Certification process (infrastructure and management) at each aerodrome	**0**	**0**	**1**	**0**
7B	Compulsory single certificate	**25**	**275**		**17**
7C	Voluntary single certificate	**10**	**100**		**10**

Table 47: Number of entities affected by changes in the certification process

2.8.3 Safety impact

A well organised (mainly safety and quality) management system, whether totally distributed or whether built around a central function, has a positive effect on safety. But the Agency believes that it is very hard to demonstrate in general terms that one form of organisation has a better safety impact than the other.

Equally, issuing one or two documents at the end of the certification process is deemed to have no safety impact.

In conclusion all the three options under consideration are neutral in terms of impact on safety.

2.8.4 Economic Impact

2.8.4.1 Aerodrome operators

In case of option 7A, for aerodrome operators the cost for the certification process will remain as estimated as in paragraph 2.6.4.2 above. So this option will neither imply additional costs,

nor savings. It is implicit that in this case the management system will remain totally distributed, even for companies managing more than one aerodrome. The number of staff necessary in this case, needs however to be estimated, since this will be the baseline against which to assess the impact of options 7B and 7C.

It then should be remembered that in paragraph 2.6.4.3 above a number of 3 FTEs had been estimated for the Safety Management at each aerodrome open to regular commercial traffic: and these are indeed the aerodromes belonging to the operators under consideration. For an integrated Safety and Quality Management System, it is then assumed that in average 5 FTEs are employed at each aerodrome in case of a fully distributed organisation, with 0 FTEs at central level.

To assess the economic impact of option 7B it assumed that 275 aerodromes have to be considered, operated by 25 entities. In a distributed organisation scheme, this will require 5 FTEs x 275 aerodromes = 1375 FTEs in total.

It is then estimated that about 20% of the distributed resources could be saved at each aerodrome, if a central function were established by each of the 25 involved operators, i.e.:

- 1 saved FTEs (i.e. 20% of 5) x 275 aerodromes = - 275 FTEs;
- - 275 FTEs x 138,600 € = a potential saving - 38,115 k€/year.

But 25 operators will have to establish a central function including safety management, quality management and internal audit (i.e. to inspect the local aerodromes themselves). This central function might require 5 FTEs per entity. In total then, for 25 entities: 125 FTEs = 17,325 k€/year.

Resultant savings for 25 aerodrome operators in case of option 7B can then be estimated as:

- **- 275 + 125 = - 150 FTEs;**
- **- 38,115 + 17,325 = - 20,790 k€/year.**

However the cost of transition for companies needing to restructure their organisations might offset these potential savings for a number of years.

In paragraph 2.8.2.1 above, it has been assumed that, in case of **option 7C** (i.e. voluntary single certificate), only about 40 % (i.e. 10) of the entities managing multiple aerodromes will avail themselves of the possibility of requesting a single certificate. In this case then, the saving will amount to 40 % of the quantities estimated above. I.e.:

- - 40 % x 150 = **- 60 FTEs**;
- - 40 % x 20,790 = **- 8,316 k€** (2006)/year.

2.8.4.2 Competent Authorities

For the competent Authorities it should be recalled that in paragraph 2.3.3.3 above it has been estimated that 1 FTE could be sufficient for oversight of slightly more than 3 aerodromes. So in **Cyprus, 1 FTE will be sufficient for such function (= 138,600 k€/year).**
This will apply to all options under consideration. In case of option 7A this represents the total additional cost, since no other Authorities are affected.
Then, in paragraph 2.6.4.2 above it has been estimated that the effort necessary by one Authority to certify (and subsequently to exercise continuous oversight) one aerodrome is in the range of 120 working hours at an average cost of 110€ + 10€ for domestic travel.

In case of option 7B, 275 aerodromes are affected, leading to a total of 33,000 working hours = 26 FTEs = 3,604 k€/year. Assuming that 30% of this effort could be saved (management system not audited at each single aerodrome), this leads to total saving for all the 17 involved Authorities, of:

- - 30% x 26 + 1 = **- 7 FTEs**;
- - 30% x 3,604 + 138,6 = **- 942.6 K€/year**.

In case of option 7C only 40% of those savings will be achieved: - 3 FTEs, - 377 k€/year.

2.8.4.3 Summary of economic impact

In conclusion the additional costs or savings deriving from the three options under consideration can be estimated as presented in Table 48 below:

Parameter	For competent Authorities	For aerodrome operators	TOTAL
Option 7A = Certification process at each aerodrome			
FTEs	1	0	**1**
k€ 2006	138.6	0	**138.6**
Option 7B = Compulsory single certificate (25 operators; 275 aerodromes)			
FTEs	- 7	- 150*	**- 157**
k€ 2006	- 943	- 20,790*	**- 21,733**
Option 7C = Voluntary single certificate (10 operators; 100 aerodromes)			
FTEs	- 3	- 60	**- 63**
k€ 2006	- 377	- 8,316	**- 8,693**

*Excluding transition costs for companies not yet structured with central functions for safety and quality.

Table 48: Estimated savings for aerodrome certification process

All the above quantitative estimations of the economic impact can then be expressed by the scores in following Table 49:

Result indicators relevant for economic impact of the certification process	Scoring of options		
	7A	7B	7C
Certificates	**Certification process at each aerodrome**	**Compulsory single certificate**	**Voluntary single certificate**
Aerodromes in basic regulation (i.e. separation of safety oversight)	- 1	- 1	- 1
Introduction and exploitation of single certificate (operators)	- 1	3	2
Staff in competent Authorities for certification and oversight	- 1	2	1
TOTAL	**- 3**	**4**	**2**
WEIGHTED TOTAL (Score x 2 for economic impact)	**- 6**	**8**	**4**

Table 49: Scoring of economic impact of aerodrome certification process

2.8.5 Environmental impact

All the three options will have a neutral impact in terms of environment, since they are only related to the organisation of some management and oversight processes.

2.8.6 Social Impact

Option 7A should be considered neutral in terms of social impact: no entity forced to reorganise, except the Cypriot Authority, which could lead to one additional job position.

Option 7B could not only eliminate around 160 jobs (i.e. significantly limiting the positive impact for jobs estimated for option 3B in paragraph 2.6.7 above), but it will also force all the operators of multiple aerodromes to organise themselves according to an identical model decided centrally, as if "one size would fit all". It has therefore to be considered negative (i.e. – 2) in social terms, for which a "weight" 2 has been assigned in previous paragraph 2.1.2.

Finally option 7C might require about 63 less jobs, which means that globally there will still be a significant number of additional jobs, since around + 280 FTEs were estimated for option 3B mentioned few lines above. In addition this option will leave each entity free to choose the organisation they prefer, and even free to decide if and when to reorganise itself. This option has therefore to be considered very positively in social terms (i.e. 3 x "weight" 2 = 6).

2.8.7 Impact on other aviation requirements outside present EASA scope

Option 7A will establish the principle of separation between operations and oversight, similarly to the "Single Sky". It will then contribute to harmonisation of the regulation across various domains. Its impact has therefore to be considered slightly positive (i.e. 1).

Option 7B and 7C, leading to the possibility of a centralized (safety and quality) management system; have to be considered even more positively (i.e. 2).

2.8.8 Multi Criteria Analysis (MCA) and recommended option

According to the methodology described in paragraph 2.1.2 and the scores attributed in paragraphs 2.8.3 to 2.8.7 above, the following matrix for MCA can be provided:

Weighted score of options for the certification process		**7A**	**7B**	**7C**
impact item	**Weight**	**Certification process at each aerodrome**	**Compulsory single certificate**	**Voluntary single certificate**
Safety	3	0	0	0
Economic	2	- 6	8	4
Environmental	3	0	0	0
Social	2	0	- 4	6
On other aviation regulations	1	1	2	2
WEIGHTED TOTAL		**- 5**	**6**	**12**

Table 50: Multi Criteria Analysis for aerodrome equipment

From it one can observe that that option 7A seems to have a negative impact. Among the remaining two, option 7C scores twice as better than 7B.

In particular, option 7C outscores 7B in social terms, since it will neither lead to reduction of jobs (i.e. not significantly offsetting the additional jobs created by option 3B), nor force any entity (except Cypriot Authority) to reorganize. In addition, even if less than option 7B, it will nevertheless have a positive economic impact.

That is why the Agency has included such option 7C (i.e. single aerodrome operator certificate only if voluntarily requested) in its Opinion.

2.9 Analysis of impacts of empowering assessment bodies

2.9.1 Alternative options

The following alternative options for the role of assessment bodies have been identified in paragraph 2.5.2 above:

- 8A): Accredited assessment bodies, in addition to competent Authorities, entitled to certify and oversee specific less complex aerodromes. Applicants decide to which certifying entity to address their request;
- 8B): Accredited assessment bodies, in addition to competent Authorities, entitled to certify and oversee all aerodromes. Applicants decide to which certifying entity to address their request;
- 8C): Only accredited assessment bodies entitled to certify and oversee specific less complex aerodromes.

2.9.2 Target group and number of entities concerned

2.9.2.1 Aerodromes, operators and ground handlers

Options 8A and 8C will limit the role of assessment bodies to certification of the simpler aerodromes and their operators. In paragraph 2.6.2.1 above it was estimated that there are, in the EU 27 + 4, about 700 complex aerodromes open to regular commercial air traffic, out of a total of 3000 in the scope of the proposed EU legislation.

The difference (3000 – 700 = **2300**) is estimated to be the number of the simpler aerodromes. In **option 8C** these 2300 aerodromes open to public use will **always be certified by assessment bodies**. The same will apply to their operators, whose number, for such simpler cases, is assumed to be identical to the number of the aerodromes themselves: 2300 again.

In **option 8A** the applicants will have the choice of requesting their certificates either from the Authority competent for the territory or from an assessment body accredited in EU 27 + 4. It is assumed that, during the first years of application of the new policy, no more than 30% of the potentially interested simpler aerodromes and operators, will use this possibility. In such a case then, the number is estimated to be 30% x 2300 = **690**.

In **option 8B**, all aerodromes, **even the most complex ones**, could be certified by assessment bodies on request (making this compulsory is considered so unrealistic that this theoretical possibility is not even considered in present RIA). Again assuming that about 30% of the total of 3000 could initially use this possibility means that the number of affected aerodromes could be in the range of 30% x 3000 = **900 (690 simpler and 210 more complex)**.

The total number of operators of the 3000 considered aerodromes in the EU 27 + 4 has been estimated in the range of 2750 in paragraph 2.7.2.3 above, but only 25 of them operate more than one aerodrome. So 30% out of 2725 operators of a single aerodrome, could avail themselves of the possibility to apply at an assessment body = 815. Out of the major 25 operators of multiple airports, it is considered that no more than 20% (i.e. 5) will use this possibility at least during the initial years. **Therefore the number of affected operators in the case of option 8B can be estimated in the range of 815 + 5 = 820.**

Ground handlers will not directly be affected, since for them no additional certification is foreseen[29].

2.9.2.2 Competent Authorities

In case of option 8C there will be no commercial competition among the Authorities competent per territory and the assessment bodies. The latter could then be accredited by the same Authorities. However in this case it assumed that:

- States will not delegate the power to accredit assessment bodies at regional or local level; therefore the maximum number of affected Authorities for accreditation will not exceed the number of States in the EU 27 + 4;
- However, it is estimated that, at least initially, candidate assessment bodies will be present in only around 50% of the States.

Therefore in **option 8C, only 15 competent Authorities will be affected.** In this case their involvement will be an active one, since they will accredit the assessment bodies. In this context the Agency will not be involved.

Vice versa, for both options 8A and 8B, the assessment bodies will be in direct commercial competition with the Authorities competent per territory. To avoid conflict of interest, it will then be necessary to accredit such bodies at central level by the Agency. This will not create conflict of interest, since in the proposed policy the Agency does not certify aerodromes or operators within the territory of the EU 27 + 4. But then, **in either option 8A or 8B the Agency will be directly impacted for the accreditation process.**

As a consequence, the assessment bodies accredited by the Agency will de facto be in competition with the local Authority everywhere in Europe. Therefore, for both options 8A and 8B all the 46 competent Authorities will be passively involved.

2.9.2.3 Assessment bodies

Until mid August 2007, 3 organisations had been "recognised" according to Annex 1 of "Single Sky" Regulation 550/2004[30]. Only one notified body (i.e. Instituto Nacional de Tecnología Aerospacial) existed in the same period in relation to directive 552/2004 (Interoperability in the "Single Sky")[31].

[29] Article 14 of Council Directive 96/67/EC of 15 October 1996 on access to the ground handling market at Community airports (*Official Journal L 272 , 25/10/1996 P. 0036 – 0045)* already allows Member States to make the ground handling activity of a supplier of ground handling services or a self-handling user at an airport conditional upon obtaining the approval of a public authority independent of the managing body of the airport.

[30] http://ec.europa.eu/transport/air_portal/traffic_management/nsa/index_en.htm

[31] http://ec.europa.eu/enterprise/newapproach/nando/index.cfm?fuseaction=directive.notifiedbody&dir_id=128961&type_dir=NO%20CPD&pro_id=99999&prc_id=99999&ann_id=99999&prc_anx=99999

However on the "NANDO" data base[32] managed by DG-ENTR, on 09 August 2007, there were 1945 notified bodies listed in total. So the number of potential assessment bodies for aerodromes could well be higher than the few units listed today in the context of the "Single European Sky", also considering that the potential market could be in the range of a thousand aerodromes (i.e. much larger than the number of ANSPs). In the said NANDO data base, on the same date, there were 155 notified bodies accredited for low voltage[33] electrical equipment. These technologies are very similar to those used by a key implementation at aerodromes (i.e. airport lighting).

Within such list however, about a dozen of the notified bodies were entities with a more general nature in their respective missions, such as for instance: Asociación Española de Normalización y Certificación, Bureau Veritas, Det Norske Veritas, Istituto Italiano del Marchio di Qualità, Société National de Certification et d'Homologation, TÜV. Others on the contrary were specialised in the electric field.

In conclusion, and bearing in mind the dimensions of the potential market, it is assumed that **about 15 bodies could ask to be accredited for aerodrome certification, for any of the three options under consideration**.

2.9.2.4 Summary of affected entities

In conclusion the number of potentially affected entities for either option, is presented in Table 51 below:

OPTION		Estimated Number				
Id.	**Description**	**Aerodromes**	**Aerodrome operators**	**Ground handlers**	**Assessment bodies**	**Authorities**
8A	Simpler aerodromes; on request.	**690**	**690**	**0**	**15**	**46 (passively) + Agency (actively)**
8B	All aerodromes; on request.	**900 (690 + 210)**	**820**			
8C	Simpler aerodromes; always.	**2300**	**2300**			**15 (actively)**

Table 51: Number of entities affected by assessment bodies

2.9.3 Safety impact

Some of the bodies mentioned in 2.9.2.3 have a recognised standing in the field of quality certification, built along the decades. However none of them has direct experience in aerodrome certification. On the other side aerodrome operators and their respective Authorities have established confidence, specific expertise and mutual respect, as well built along the years.

[32] http://ec.europa.eu/enterprise/newapproach/nando/index.cfm?fuseaction=notifiedbody.main

[33] Referred to Council Directive 73/23/EEC of 19 February 1973 on the harmonisation of the laws of the Member States relating to electrical equipment designed for use within certain voltage limits (*OJ L 77, 26 March 1973*).

Quantifying the safety impact of the introduction of the concept of assessment bodies in precise terms is impossible. However it is common opinion among the majority of experts that the regulatory framework, to maintain the high levels of safety already achieved, needs to remain relatively stable and not totally change from one day to the next. Therefore at least a qualitative assessment of the impact of the introduction of the assessment bodies in this domain can be attempted. It is then assumed that introducing assessment bodies for the simpler aerodromes, today often not subject to certification, could only improve the situation, through safety oversight carried out by a third party. On them in any case (e.g. Aeroclubs) the volume of traffic, dimension of aircraft and severity of aviation accidents are less. Worse could be the case of empowering the assessment bodies to certify major aerodromes, since such a process is well established virtually by all competent Aviation Authorities, which are also equipped with the necessary expertise. In addition, leaving to operators of simpler aerodromes the choice, will allow a smooth evolution of the system, without major instability.

In other words option 8A (only simpler aerodromes on request) could have a slight benefit in safety terms. Obliging such an approach everywhere (i.e. option 8C) even where the situation could not be mature, will, on the contrary, have a slight negative effect. A greater negative effect, due to insufficient experience yet accrued by notified bodies, could derive from option 8B. In no cases the safety management system by aerodrome operators will be affected.

The above considerations are then summarised in Table 52 below:

Result Indicators relevant for safety impact of assessment bodies	**Scoring of options**		
	8A	**8B**	**8C**
Role of assessment bodies	**Simpler aerodromes; on request**	**All aerodromes; on request**	**Simpler aerodromes; always**
Management System by major aerodrome operators	0	0	0
Aerodrome safety indicators (stability of the regulatory framework)	1	-3	-1
TOTAL	**1**	**- 3**	**- 1**
WEIGHTED TOTAL (Score x 3 for safety)	**3**	**- 9**	**- 3**

Table 52: Safety impact of assessment bodies

From the above Table 52, albeit only in qualitative terms, it can then be estimated that option 8B, very different from today's regulatory landscape, might cause safety risks due to the sudden instability. Even 8C will cause instability, but its impact in terms of total risk will be much less, since it will be limited to simpler aerodromes, used by small aircraft and very seldom for commercial air taxi (i.e. very few passengers) operations. On the contrary option 8A will have a slight positive effect on safety.

2.9.4 Economic Impact

2.9.4.1 Accreditation of the assessment bodies

Accrediting (and subsequently monitoring) the assessment bodies, is a process similar to that of standardising the Aviation Authorities. For the latter estimations of the needed effort have already been presented in paragraph 2.6.4.1 above.

Even for such accreditation process then, it is assumed that a general monitoring plan for periodic audits of the assessment bodies will exist, based on 1 visit every 2 years (frequency = 1 : 2 = 0.5 visits/year). In addition however, ad hoc visits may be carried out in special circumstances. So the frequency is assumed to be 10% higher: 0.55.

Such visits could normally last 5 days, being carried out by a team of 3 auditors. The average effort per one inspection visit is then 5 days x 7.5 hours x 3 persons = 112.5 working hours.

Since the frequency of the visits per year has been estimated equal to 0.55, this means (112 x 0.55) that in average **about 62 yearly working hours are necessary to carry out the accreditation (and subsequent monitoring) process for one assessment body, during the two years planning period.**

However, it will be necessary also to coordinate and prepare the visits, reporting the results and follow up any plan for possible corrective actions.

The number of necessary yearly working hours to be spent to accredit one assessment body, is therefore estimated to be, in average, 3 times higher (i.e. one week for the visit plus 2 weeks of desk work) than the 62 hours mentioned above. Therefore 62 x 3 = **186 hours in average are necessary per year for the accreditation of one assessment body in the aerodrome domain**, comprising the actual visit and the associated desk work before and after the visit.

In paragraph 2.9.2.3 above, the number of involved assessment bodies has been estimated equal to 15, therefore the yearly burden for their accreditation will total:

- 186 hours x 15 assessment bodies = around 2,790 working hours/year;
- which represents **about 2 FTEs**.

In **option 8C** these 15 assessment bodies will be accredited and subsequently monitored by the **Aviation Authorities**. Since for them the cost of labour has been estimated in 138,600 €/FTE, the total economic burden on them will be in the range of **277.2 k€/year.**

In **options 8A and 8B** instead, the accreditation will be responsibility of the **Agency**. For it the cost of labour has been estimated in the range of 150,000 €/FTE. Therefore in such a case the economic burden will be around **300,000 €/year.**

Accreditation visits do however require effort also by the audited bodies. It is assumed that, in average, they will employ 1 coordinator per each of the 5 days of the visit (= 37.5 working hours). Multiplying 37.5 for the frequency of 0.55 leads to 20 working hours per year to be sustained by each assessment body. Even the bodies to be accredited (or monitored post accreditation) will however have to fill questionnaires and produce information. Therefore it is assumed that in average they will have to spend twice as much time = 40 working hours/year to acquire and maintain the accreditation for the aerodrome domain. In total, for the 15 assessment bodies in scope, this represents:

- 40 hours x 15 assessment bodies = around 600 working hours/year;
- i.e. about 0.5 FTEs;
- or, assuming for the assessment bodies an average labour cost equal to that of the authorities, for all the 15 involved bodies, the total cost is estimated around 69,300 €/year.

In conclusion the cost of accrediting assessment bodies for the aerodrome domain can be estimated as presented in Table 53 below:

Parameter	For the Agency	In total for 15 competent Authorities	For 15 assessment bodies	TOTAL
Options 8A or 8B= Accreditation by Agency				
FTEs	2	0	0.5	**2.5**
k€ 2006	300	0	69	**369**
Option 8C = Accreditation by competent Authorities				
FTEs	0	2	0.5	**2.5**
k€ 2006	0	277	69	**346**

Table 53: Estimated cost for accreditation of assessment bodies

The cost for accrediting the assessment bodies is therefore in the range of 350 k€ per year, but option 8C (i.e. accreditation by competent Authorities) could cost about 6% less.

2.9.4.2 Aerodrome certification

The estimated basic cost for aerodrome certification has been estimated in 2.6.4.2 above, in particular totalling, in case of option 3B (i.e. 3000 in the scope of EU legislation, but 700 major aerodromes already subject to certification):

- 165 FTEs and 22,869 k€ (2006)/year for the Authorities;
- 52 FTEs and 7,207 k€ for aerodrome operators.

The above figures have been derived assuming 120 working hours necessary by the Authority to certify a simple aerodrome, paralleled by 38 hours of effort by the aerodrome operator. The number of necessary working hours (for certification or for yearly oversight) is assumed 3 times as much for the major aerodromes: i.e. 360 hours for the Authority and 114 for the operator. It should be noted that 360 hours/aerodrome x 700 aerodromes, leads to 252,000 hours, which equals around 200 FTEs: i.e. not far from the data presented in paragraph 2.3.3.3 above.

The baseline against which to calculate the economic impact of empowering assessment bodies, can then be presented in Table 54 below:

Parameter	For Authorities	For aerodrome operators	TOTAL
Option 8A = Simpler aerodromes; on request			
Working hours/minor aerodrome	120	38	158
Working hours x 690 minor aerodromes	82,800	26,220	109,020
FTEs	66	21	87
k€ 2006	**9,148**	**2,911**	**12,059**
Option 8B = All aerodromes; on request			
Working hours/major aerodrome	360	114	474
Working hours x 210major aerodromes	75,600	23,940	99,540
FTEs	60	19	79
k€ 2006	8,316	2,633	10,949
Working hours/minor aerodrome	120	38	158
Working hours x 690 minor aerodromes	82,800	26,220	109,020
FTEs	66	21	87
k€ 2006	9,148	2,911	12,059
TOTAL	**17,464**	**5,544**	**23,008**
Option 8C = Simpler aerodromes; always			
Working hours/minor aerodrome	120	38	158
Working hours x 2300 minor aerodromes	276,000	87,400	363,400
FTEs	219	69	288
k€ 2006	**30,353**	**9,563**	**39,917**

Table 54: Baseline cost of aerodrome certification

It is then assumed that the effort necessary by aerodrome operators will not change, while in order to "open a new market", assessment bodies will have to offer prices around 10% less than the certification fees applied by the competent Authorities. Therefore, assessment bodies could possibly lead to the following savings:

- Around 942 k€/year (i.e. 10% of 9148) in the case of option 8A;
- Around 1,750 k€/year (i.e. 10% of 17464) in the case of option 8B;
- Around 3,035 k€/year (i.e. 10% of 30,353) in the case of option 8C.

2.9.4.3 Summary of economic impact

On the basis of the conclusions reached in previous sub-paragraphs 2.9.4.1 and 2.9.4.2, the following summary Table 55 can be compiled, to compare the economic impact of the three options concerning the role of the assessment bodies:

Estimated cost of regulation of assessment bodies	Thousand € (2006)/year		
	8A	8B	8C
Role of assessment bodies	**Simpler aerodromes; on request**	**All aerodromes; on request**	**Simpler aerodromes; always**
Accreditation of assessment bodies	369	369	346
Management System by major aerodrome operators	0	0	0
Empower assessment bodies	- 942	- 1,750	- 3,035
TOTAL	**- 573**	**- 1,381**	**- 2,689**

Table 55: Summary of economic impact of empowering assessment bodies

It is then estimated that, in all options, empowering assessment bodies will lead to some savings. These however are littlr in the case of option 8A, while are in the range of 1-1.5 M€/year for options 8B and twice as much for option 8C.

The above estimations can then be translated into the scoring presented in Table 56 below:

Result Indicators relevant for economic impact of empowering assessment bodies	Scoring of options		
	8A	8B	8C
Role of assessment bodies	**Simpler aerodromes; on request**	**All aerodromes; on request**	**Simpler aerodromes; always**
Accreditation assessment bodies	- 2	- 2	- 1
Management System by major aerodrome operators	0	0	0
Empower assessment bodies	1	2	3
TOTAL	**- 1**	**0**	**2**
WEIGHTED TOTAL (Score x 2 for economic impact)	**- 2**	**0**	**4**

Table 56: Scoring of economic impact of empowering assessment bodies

2.9.5 Environmental impact

Any of the options under consideration is estimated neutral, in respect to environmental impact.

2.9.6 Social Impact

In terms of social impact empowering assessment bodies may create new jobs within them, replacing jobs within the competent Authorities for the certification of aerodromes and operators. In paragraph 2.9.4.2 above it has been estimated that to certify the involved aerodromes, the Authorities could employ about 37 FTEs for option 8A. Assuming a productivity gain of about 5% obtained through assessment bodies, such jobs could be replaced by 35 (i.e. 95% of 37) FTEs in said bodies.

Similarly, for option 8B, 97 (i.e. 60 + 37) jobs in the Authorities could be replaced by (95%) jobs in the assessment bodies: i.e. 92. For option 8C, 124 FTEs in the Authorities could be replaced (95%) by 118 jobs in the assessment bodies.

In addition 2 FTEs have been estimated necessary for the auditors to accredit the assessment bodies. In options 8A and 8B, this will create two new jobs in the Agency. In option 8C this effort will be divided among 15 Authorities: 2/15 = 0.13 additional FTEs in each of them. This number is however so small, that it is assumed that it could be provided through a number of organisational arrangements, without creating any new job.

Equally the total of 0.5 FTEs divided by 15 assessment bodies (i.e. 0.03 FTEs) is so negligible that it will not create any additional job.

No impact on jobs for aerodrome operators is foreseen for any of the options under consideration.

The number of affected jobs is summarised in table 57 below:

Jobs	Agency	Authorities	Assessment bodies	TOTAL
Option 8A = Simpler aerodromes; on request				
Accreditation assessment bodies	2	0	0	**2**
Certification of aerodromes	0	- 37	35	**- 2**
TOTAL	2	- 37	35	**0**
Option 8B = All aerodromes; on request				
Accreditation assessment bodies	2	0	0	**2**
Certification of aerodromes	0	- 97	92	**- 5**
TOTAL	2	- 97	92	**- 3**
Option 8C = Simpler aerodromes; always				
Accreditation assessment bodies	0	0	0	**0**
Certification of aerodromes	0	- 124	118	**- 6**
TOTAL	0	- 124	118	**- 6**

Table 57: Impact of assessment bodies on jobs

Option 8A could then move some jobs, from any of the competent Authorities (46 in this case; passive role) to any of the assessment bodies, regardless of national boundaries within the EU 27 + 4. It will have then a slight positive social impact in terms of building the internal market, without in total creating of reducing jobs.

Option 8B will also contribute to the internal market, but the number of affected workers is greater than option 8A. Even more workers, with a slight reduction in terms of jobs, will be affected by option 8C.

In conclusion the social impact of either option, could be summarised in Table 58:

Result Indicators relevant for social impact of empowering assessment bodies	Scoring of options		
	8A	8B	8C
Role of assessment bodies	**Simpler aerodromes; on request**	**All aerodromes; on request**	**Simpler aerodromes; always**
Management System by major aerodrome operators	0	0	0
Building the internal market (i.e. de-fragmentation)	1	1	1
Agency staff for rulemaking, standardisation and safety analysis	1	1	0
Staff in competent Authorities for certification and oversight	- 1	- 2	- 3
Empower assessment bodies	1	2	3
TOTAL	**2**	**2**	**1**
WEIGHTED TOTAL (Score x 2 for social impact)	**4**	**4**	**2**

Table 58: Scoring of social impact of empowering assessment bodies

2.9.7 Impact on other aviation requirements outside present EASA scope

Any of the options under consideration, will have a slight positive impact in terms of harmonisation of the aviation legislation with the "new approach".

2.9.8 Multi Criteria Analysis (MCA) and recommended option

According to the methodology described in paragraph 2.1.2 and the scores attributed in paragraphs 2.9.3 to 2.9.7 above, the following matrix for MCA can be provided:

Weighted score of options for the Assessment Bodies		8A	8B	8C
impact item	**Weight**	**Only simple aerodromes on request**	**All aerodromes on request**	**Only simple aerodromes but always**
Safety	3	3	-9	-3
Economic	2	- 2	0	4
Environmental	3	0	0	0
Social	2	4	4	2
On other regulations	1	1	1	1
WEIGHTED TOTAL		**6**	**- 4**	**4**

Table 59: Multi Criteria Analysis for assessment bodies

From it one can observe that that option 8B seems to have a negative impact. Among the remaining two, option 8A scores better than 8C.
In particular, option 8A outscores 8C in safety and social terms, while it will lead to less economic savings (negligible for 8A and in the range of – 2.5 M€/year for 8C).

That is why the Agency has included such option 8A (i.e. assessment bodies empowered to certify simpler aerodromes and aerodrome operators, if requested by applicants) in its Opinion.

2.10 Analysis of impacts for Rescue & Fire Fighting Services (RFFS) staff

2.10.1 Alternative options

The following alternative options for the training, qualification, professional competence and medical fitness of RFFS staff have been identified in paragraph 2.5.2 above:

- 2A): RFFS staff regulated in general and not specifically for aviation;
- 2B): As 2A plus specific aviation competence scheme and medical requirements;
- 2C): RFFS staff regulated also through aviation common rules administered by competent Authorities, in particular for medical fitness.

2.10.2 Target group and number of entities concerned

All the operators (i.e. about 1750) of the 3000 aerodromes in the scope of the proposed EU legislation will be affected and all the competent Authorities or assessment bodies. No role is foreseen for the Agency in relation to management or oversight of human resources.

However there are presently neither ICAO nor EU requirements on the number of RFFS staff. Therefore no reliable estimates on their number can be presented.

2.10.3 Safety impact

Aviation environment is a very peculiar one, both for the aerodrome layout and the aircraft itself. In fact, in emergency situations, RFFS vehicles should move very quickly, safely and immediately finding their right direction on the aerodrome. Then they should face fires involving peculiar aviation materials, or open or penetrate fuselages. For such tasks RFFS staff should be properly (and recurrently) trained, in addition to their basic training as members of fire brigades. Option 2A will not comply with the said needs, while 2B and 2C will. In addition option 2A will also represent a regression, when compared with the present situation, in which a number of States have indeed published requirements for RFFS staff employed at aerodromes.

Adoption of common rules for RFFS at EU 27 + 4 level, for RFFS and related staff, as per options 2B and 2C, will have also a positive impact on safety, thanks to common rules, while this could also contribute to evolution of ICAO Annex 14 on the specific matter. Such benefits will not be achieved through option 2A.

In summary the safety impact of the three options under consideration, can be presented in Table 60 below:

Result Indicators relevant for safety impact of regulation of RFFS staff	**Scoring of options**		
	2A	**2B**	**2C**
	No aviation requirements	**Aviation requirements**	**Licensing RFFS staff by Authorities**
Adoption of common implementing rules	0	1	1
Evolution ICAO Annex 14	0	1	1
Competence schemes for aerodrome staff	- 3	3	3
TOTAL	**- 3**	**5**	**5**
WEIGHTED TOTAL (Score x 3 for safety)	**- 9**	**15**	**15**

Table 60: Safety impact of options for RFFS staff

From above Table 60 one could observe that option 2A will not fulfil the safety needs, while both 2B and 2C will achieve this in an equal measure.

2.10.4 Economic Impact

In the absence of an estimated number of affected RFFS staffs, only a qualitative approach is followed to assess the economic impact of the three options under consideration.

It is therefore assumed that option 2A will lead to no additional costs (score = 0; i.e. neutral).

On the contrary option 2B may have a limited impact in the few cases where specific aviation requirements for RFFS staff are not applied today (score = - 1).

Finally option 2C will have the most significant adverse economic impact, since additional paper work will be necessary in the competent Authorities to implement it (score = - 2).

In line with the methodology exposed in paragraph 2.1.2 above, all the three scores mentioned above have to be multiplied by a "weight" of 2, leading to the following "weighted" scores:

- Option 2A (i.e. no aviation requirements): "weighted" score 0;
- Option 2B (i.e. aviation requirements under responsibility of aerodrome operator): "weighted" score - 2;
- Option 2C (i.e. aviation requirements under responsibility of competent Authority including licensing of RFFS staff): "weighted" score - 4;

2.10.5 Environmental impact

Any of the three options under consideration is estimated to be neutral in terms of environmental impact.

2.10.6 Social Impact

In the presence of a license released by the Authority, the risk of unemployment deriving from loss (even temporary) of professional competence or medical fitness, is highly increased. So option 2C scores highly negatively in social terms (score – 3 x "weight" 2 = - 6).

Option 2A (i.e. no specific aviation requirements) is considered neutral in social terms (score = 0).

Finally, option 2B is estimated to have a significant positive social impact, because it improves the quality and professional content of the work, while also creating some working hours for training and live drills (score 2 x "weight 2 = 4).

2.10.7 Impact on other aviation requirements outside present EASA scope

None of the three options under consideration will have an impact on other aviation requirements outside EASA scope.

2.10.8 Multi Criteria Analysis (MCA) and recommended option

According to the methodology described in paragraph 2.1.2 and the scores attributed in paragraphs 2.10.3 to 2.10.7above, the following matrix for MCA can then be provided:

Weighted score of options for the RFFS staff		2A	2B	2C
impact item	Weight	No aviation requirements	Aviation requirements	Licensing RFFS staff by Authorities
Safety	3	- 9	15	15
Economic	2	0	- 2	- 4
Global interoperability	1	- 3	3	1
Environmental	3	0	0	0
Social	2	0	4	- 6
On other aviation regulations	1	0	0	0
WEIGHTED TOTAL		**- 12**	**20**	**6**

Table 61: Multi Criteria Analysis for RFFS staff

From it one can observe that that option 2A seems to have a high negative impact. Among the remaining two, option 2B scores about three times as better than 2C.
In particular, option 2B outscores 2C in social terms, and in terms of global interoperability.

That is why the Agency has included such option 2B (i.e. specific professional and medical requirements for RFFS staff, under the responsibility of the aerodrome operator) in its Opinion.

3. Conclusions

Having assessed the impact of each considered option, against the specific objectives of the proposed policy, in terms of safety, economic effects, global interoperability, environmental and social aspects, as well as in relation with other policies (e.g. “new approach” or “Single European Sky”), the Agency in its Opinion proposes the following selected options:

- Option 3B (reference paragraph 2.6 above) for the scope of EU legislation on aerodrome safety and interoperability (i.e. all aerodromes open to public use subject to common EU rules), because it scored twice as better than the alternative options in safety terms; because it is the cheapest and because it could create a significant number of new qualified jobs in the private sector, inside aerodrome operators and ground handlers;
- Option 4C (reference paragraph 2.7 above) for the regulation of aerodrome equipment (i.e. specific rules and/or ETSOs and certification of design of aerodrome equipment when necessary for safety reasons; provisions for related design and production organisations; declaration of conformity of produced equipment signed by manufacturer; implementation on the site, operation or use and maintenance under responsibility of the aerodrome operator, verified during the aerodrome certification process: i.e. no separate declaration of verification), because it scored much better in safety terms than alternative option 4A; because selected option 4C could lay the foundations for better environmental management at aerodromes and because it could improve the quality and quantity of jobs in the design and production organisations of aerodrome equipment, while being cheaper than option 4B;
- Option 7C (reference paragraph 2.8 above) for the certification process of aerodrome operators (i.e. possibility of requesting, if so wished, a “single” Aerodrome Operator Certificate at company level, for operators managing multiple aerodromes and having established central functions for safety management, quality management and internal audit), because it scored twice as better than alternative option 7B, in particular in social terms, since it will neither lead to reduction of jobs, nor force any aerodrome operator to reorganize its company. In addition option 7C will also have a positive economic impact (i.e. leading to some savings);
- Option 8A (reference paragraph 2.9 above) for the role of assessment bodies (i.e. empowering assessment bodies accredited by the Agency, to certify least complex aerodromes and their operators, but leaving the applicants, in such cases, free to send their request to either the competent Aviation Authority or to an assessment body), because it scored at least twice as better than the alternative options, and because in particular, option 8A outscored alternative option 8C in safety and social terms, while still leading to, albeit minimal, economic savings;
- Option 2B (reference paragraph 2.10 above) for the RFFS staff (i.e. establishment of specific aviation requirements for their professional competence and medical fitness, to be demonstrated under the responsibility of the aerodrome operator), because it, in addition to positively score in safety terms, also in general scored about three times as better than alternative option 2C. In particular, option 2B outscores 2C in social terms, and in terms of global interoperability.

The above proposals are also in line with the positions expressed by many Authorities/Administrations and by industry, emerged during the extensive consultations (reference paragraph 2.2.2 above) and in particular from the 3010 comments to NPA 06/2006 and the 103 reactions to the related CRD.

The combination of the five selected options, which in turn are included in the Agency's opinion on the matter, could lead to the impact summarised in Table 62 below:

Impact			**Selected Options**					**TOTAL**
			Scope of EU legislation	**Aerodrome equipment**	**Certification process**	**Asses. Bodies**	**RFFS staff**	
			3B	**4C**	**7C**	**8A**	**2B**	
Item		**Unit**	**2000 aerodromes open to public use**	**Verification part of certification**	**Voluntary single certificate**	**Simpler on request**	**Aviation reqmts**	
Safety		Weighted Score	57	12	0	3	15	**87**
Economic	For the Agency	K€/ year	2,850	0	0	300	0	**3,150**
	TOTAL	K€ / year	30,181	0	- 8,693	- 573	Not estimated	**20,915**
Environmental		Weighted Score	0	3	0	0	0	**3**
Social	Agency	Jobs	19	0	0	2	Not estimated	**21**
	Authorities		107	0	- 3	- 37		**67**
	Partial total public sector		**126**	**0**	**- 3**	**- 35**		**88**
	Assessment Bodies		0	0	0	35		**35**
	Aerodrome Operators		159	0	- 60	0		**99**
	Ground Handlers		245	0	0	0		**245**
	Design and production of aerodrome equipment		0	0	0	0		**0**
	Partial total private sector		**404**	**0**	**- 60**	**35**		**379**
	TOTAL		**530**	**0**	**- 63**	**0**		**467**
On other requirements		Weighted Score	0	0	2	1	0	**3**

Table 62: Summary of the impact of the Agency's proposals

None of the selected 5 options has a detrimental safety impact. On the contrary four of them (i.e. 3B, 4C, 8A and 2B) had the best score in safety terms when compared with the respective alternatives. The only exception is option 7C (single certificate), since in that case all the considered options had a neutral effect on safety.

The costs associated with the extension of the competences of the Agency to the safety and interoperability regulation of aerodromes had been estimated by the preliminary impact assessment in 2005 in the range of 4.4 to 6.5 M€ (2005)/year (only for labour and overhead costs inside the Agency, without considering the cost for stakeholders, but for both ATM and aerodromes). In the present RIA the Agency estimated for it a direct additional cost of 3,150 k€/year, which is about 50%, of the preliminary estimation mentioned above: not surprising since this RIA is considering only aerodromes, not also ATM/ANS. The Commission services had re-estimated these costs in 2006, in about 7.5 M€/year (not only for the direct Agency's costs, but for all stakeholders assuming 1500 aerodromes in the scope of the EU legislation). In this RIA the total is estimated in almost 21 M€/year (i.e. about 3 for additional yearly Agency's costs + the rest for the other stakeholders), which still confirms that the depth of analysis has been proportionate. It should however be recalled that (reference paragraph 2.3.1.9 above) the estimated cost of aviation accidents and incidents due to aerodrome factors (infrastructure, equipment, operations) in the EU 27 + 4 totals around 1,164,000 k€ (2006)/year: i.e. 125 times as much. So, should the Agency's proposal achieve only a 2% quantitative safety benefit (i.e. 23,280 k€/year) this would be in the same order of magnitude of the total estimated costs of the proposed policy.

In addition the proposed policy will also lay the foundations for possible environmental benefits in the future.

In social terms the proposed policy, besides contributing to the development of the internal market and labour mobility, might create around 530 additional jobs in the EU 27 + 4, of which 21 in the Agency, 67 in the competent authorities and the rest in the private sector.

Finally, the proposed policy could also contribute to better align the safety and interoperability regulation of aerodromes, not only with the Basic EASA Regulation 1592/2002, but also with the "new approach" and with the "Single European Sky".

On the basis of this RIA, it is then considered that the extension of the EASA competences to the safety and interoperability of aerodromes is justified, in particular with regard to safety, social and economic benefits. It is, therefore, recommended that the necessary activities be initiated, in order to achieve a legislative proposal submitted by the EC to the co-decision process by 2008.