



**NOTICE OF PROPOSED AMENDMENT (NPA) No 2008-22F**

**DRAFT OPINION OF THE EUROPEAN AVIATION SAFETY AGENCY,  
FOR A COMMISSION REGULATION establishing the implementing rules for the  
competent authorities, including general requirements, approved training  
organisations, aeromedical centres, licensing and medical certification of flight crew**

**and**

**DRAFT DECISION OF THE EXECUTIVE DIRECTOR OF THE EUROPEAN AVIATION  
SAFETY AGENCY on  
acceptable means of compliance and guidance material related to the implementing  
rules for the competent authorities, including general requirements, approved  
training organisations, aeromedical centres, licensing and medical certification of  
flight crew**

**and**

**DRAFT OPINION OF THE EUROPEAN AVIATION SAFETY AGENCY,  
FOR A COMMISSION REGULATION establishing the implementing rules for  
organisations, including general requirements, approved training organisations,  
flight simulation training devices and aeromedical centres**

**and**

**DRAFT DECISIONS OF THE EXECUTIVE DIRECTOR OF THE EUROPEAN AVIATION  
SAFETY AGENCY on  
acceptable means of compliance, certification specifications and guidance material  
related to the implementing rules for managements systems, including general  
requirements, approved training organisations, flight simulation training devices and  
aeromedical centres.**

***"Authority and Organisation Requirements"***

**F. Regulatory Impact Assessment on Flight Crew Licensing (FCL)**

**NOTE:** The NPA on “Authority and Organisation Requirements” contains draft Opinion on the Implementing Rules for Authorities, draft Opinion on the Implementing Rules for Organisations and the related draft Decisions and Regulatory Impact Assessments. The NPA is split into six separate NPAs (2008-22A, 2008-22B, 2008-22C, 2008-22D, 2008-22E AND 2008-22F) as indicated in the Table of Contents below. The documents are published in the Comment-Response Tool (CRT) available at <http://hub.easa.europa.eu/crt/>.

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## **C. Regulatory Impact Assessment on the Implementing Rules for Flight Crew Licensing (FCL)**

### **REGULATORY IMPACT ASSESSMENT**

#### **ON THE IMPLEMENTING RULES FOR FLIGHT CREW LICENSING (FCL)**

**As per Article 7.6 of Regulation (EC) No 216/2008**

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**List of Acronyms**

AIB	Accident Investigation Body
AMC	Acceptable Means of Compliance
AOC	Air Operator Certificate
CFIT	Controlled Flight Into Terrain
CRD	Comment Response Document
CRI	Class Rating Instructor
CS	Certification Specification
EASA	European Aviation Safety Agency
EC	European Commission
ECAC	European Civil Aviation Conference
ERs	Essential Requirements
EU	European Union
FI	Flight Instructor
FTE	Full Time Equivalent
ICAO	International Civil Aviation Organisation
IFR	Instrument Flight Rules
IRs	Implementing Rules (= supplementing measures)
IRI	Instrument Rating Instructor
JAA	Joint Aviation Authorities
JIP	JAA Joint Implementation Procedures
LAFI	Light Aircraft Flight Instructor
MCA	Multi – Criteria Analysis
MCCI	Multi Crew Coordination Instructor
MI	Mountain Rating Instructor
MS	Member State
NAA/NSA	National (or Civil) Aviation Authority/Supervisory Authority
NPA	Notice for Proposed Amendment
OPS	Air Operations
RIA	Regulatory Impact Assessment
SARPs	Standards and Recommended Practices
SES	Single European Sky
SFI	Synthetic Flight Instructor
SME	Small/Medium Enterprise
SMS	Safety Management System
STI	Synthetic Training Instructor
TRI	Type Rating Instructor
VLJ	Very Light Jet

## 1. Introduction & Scope

### 1.1 Context

When establishing the Agency<sup>1</sup>, the legislator, in recital (2) of the Regulation, already envisaged that appropriate essential requirements would be developed to cover operations of aircraft and flight crew licensing, as well as the application of same Regulation to third-country aircraft. Therefore, in November 2005, the European Commission adopted a legislative proposal<sup>2</sup> to extend the tasks of EASA to the three mentioned domains.

The proposal, after the co-decision process, has led to a revised Basic Regulation<sup>3</sup>, which indeed established essential requirements in the three domains mentioned above and substantive requirements respectively in Article 7 therein for pilots, in Article 8 for air operations and in Article 9 for aircraft used by third-country operators, into, within or out of the Community. In addition, the legal basis for the Operational Suitability Certificate (OSC) has been embedded in Article 5 (i.e. airworthiness).

In each of these Articles the legislator delegated powers to the Commission to adopt measures supplementing the basic legislative provisions, in accordance with the regulatory procedure with scrutiny<sup>4</sup> and based on proposals contained in Opinions delivered by EASA. The Agency shall hence analyse different alternative options in order to develop the Opinions to be transmitted to the Commission. This comparative analysis is the purpose of the Regulatory Impact Assessment (RIA).

Pilots are, of course, involved not only in commercial air operations, but also in general aviation activities, in operations of highly diversified complexity on-board aircraft of different sizes, performance and equipment<sup>5</sup>. From a questionnaire circulated **in 2007** by the Agency to the national authorities, it can be estimated that in that year there were, in the **EU 27 + 4 States**<sup>6</sup>, **more than 370,000 pilots, about 65% of which involved in general aviation operations**. Recreational and sport aviation is in turn one of the big sources of qualified aviation staff for airlines and supporting services, serving as a stepping stone for the access to commercial aviation. Many pilots and engineers, after building the number of their hours in the air or in the hangar, subsequently move to work in the airline industry.

However, general and business aviation is very diverse. According to the European Commission<sup>7</sup>, it encompasses activities ranging from recreational flying with non-powered aircraft to complex operation of high-performance business jets and specialised aerial works. This creates challenges, as policy initiatives cannot be based on the "one size fits all" approach.

Furthermore, many general and business aviation stakeholders have expressed concerns related to the proportionality of regulations affecting them, while many observers have noticed, during the last decade, a constant decrease in the number of Private Pilot Licences (PPL or similar), possibly due not only to the increase in the cost of fuel and other operating costs, but also due to the administrative cost of acquiring and maintaining the said licence. For this reason, the legislator has included in the Basic Regulation the provision for a "Leisure Pilot Licence" (LPL)<sup>8</sup> aiming at offering to more citizens the possibility of flying, for recreational purposes, at an affordable price.

<sup>1</sup> Regulation (EC) No 1592/2002 of the European Parliament and of the Council of 15 July 2002 on common rules in the field of civil aviation and establishing a European Aviation Safety Agency (EASA), (OJ L 240, 7.9.2002, pages 01-21).

<sup>2</sup> Proposal for a Regulation of the European Parliament and of the Council amending Regulation (EC) No 1592/2002 of 15 July 2002 on common rules in the field of civil aviation and establishing a European Aviation Safety Agency (COM(2005)579 final of 15 November 2005).

<sup>3</sup> Regulation (EC) No 216/2008 of the European Parliament and of the Council of 20 February 2008 on common rules in the field of civil aviation and establishing a European Aviation Safety Agency (EASA) and repealing Council Directive 91/670/EEC, Regulation (EC) No 1592/2002 and Directive 2004/36/EC; (OJ L79, 19.3.2008, pages 01-49). So-called EASA "Basic Regulation".

<sup>4</sup> See article 65 of the Basic Regulation and Council Decision 1999/468/EC of 28 June 1999 laying down the procedures for the exercise of implementing powers conferred on the Commission (OJ L 184, pages 23-26), as amended by Council Decision 2006/512/EC of 17 July 2006 (OJ L 200, pages 11-13).

<sup>5</sup> In the future the complexity and variety of this domain will even increase, due to pilots "on the ground" flying Unmanned Aerial Systems (UAS). This category of pilots is however out of the scope of the present rulemaking task FCL.001.

<sup>6</sup> These are the States applying the common rules developed thorough EASA, namely the 27 Members of the European Union, plus Iceland, Liechtenstein, Norway and Switzerland.

<sup>7</sup> COM (2007) 869 final of 11 January 2007: "An Agenda for sustainable future in general and business aviation".

<sup>8</sup> Article 7.2 therein.

Naturally, this shall happen while maintaining adequate standards of safety, in a context where air traffic density increases, and therefore also complexity of airspace and operations increases, while new actors (e.g. Unmanned Aircraft) are about to enter the scene, and technology (e.g. satellite navigation) tends to blur the limit between VFR and IFR.

Maintaining, if not increasing, the safety level, in the context summarised above, is indeed the purpose of the EASA Implementing Rules (IRs) and related Acceptable Means of Compliance (AMCs) for FCL. Comparing various options for these rules, in the perspective of safety, economic and other needs is the purpose of present RIA.

## **1.2 Scope of present Regulatory Impact Assessment**

Community competence for air operations, pilots and third-country operators has been established by the legislator. The question "whether" the EASA system should be extended to the said domains has already been analysed in the Impact Assessment carried out by the Commission services according to the applicable guidelines<sup>9</sup>. What remains to be assessed is therefore "**how**" to balance the need to safeguard safety with the need to establish proportionate processes at the level of implementing rules.

Currently the Agency envisages developing six different sets of specific implementing rules for:

- air operations;
- flight crew licensing;
- third-country operators;
- organisations;
- airworthiness requirements related to operations (operational suitability certificate);
- requirements for competent authorities (so-called "Section B" in the former JAA material).

The development of each set of rules will be accompanied by a Regulatory Impact Assessment (RIA).

The scope of the present paper is therefore to analyse, in the above context, the impact of possible implementing rules for flight crew licensing and in particular for:

- ways of implementing the new "Leisure Pilot Licence" (LPL);
- possible extension of the privileges for some categories of pilots, instructors and examiners;
- requirements and procedures for pilot medical certificates.

Conversely, **out of scope** of the present RIA are:

- assessment bodies, since these had been proposed by the Commission<sup>10</sup>, but not included by the legislator in the Basic Regulation;
- general structure of the rules (i.e. maintain the JAR layout or introduce a new one) and the "performance-based" approach to rulemaking, which are also relevant, e.g., for air operations and which will be discussed in the RIA related to AR rules;
- requirements for pilot training organisations and aeromedical centres, which will be discussed in the RIA related to the rules on organisations (MS);
- pilots of the very light, old, unique or simple aircraft listed in Annex II of the Basic Regulation and therefore out of Agency competence<sup>11</sup>;
- pilots "on-the-ground" (i.e., of Unmanned Aerial Systems) which, being out of the scope of task FCL.001 will be considered in the future, once an appropriate task will have been introduced in the Agency's rulemaking programme;
- Commercial Pilots (CPL) and Air Transport Pilots (ATPL) of aeroplanes, since the Agency's proposals on rules applicable to them are substantially the same as those contained in JAR-FCL 1, which had been implemented in all Member States<sup>12</sup>;
- Multi-Crew Pilot Licences (MPL) whose requirements are equally unchanged from JAR-FCL 1.

<sup>9</sup> Referred in paragraph 4 of mentioned COM(2005)579 final.

<sup>10</sup> Mentioned in COM (2005) 579 final.

<sup>11</sup> According to Article 4.2 and 4.4 of Basic Regulation.

<sup>12</sup> Comparative study on national requirements regarding personnel licences for flight crew in the current legislation of the Member States of the European Economic Area, dated 11 November 2005 and carried out by the JAA on behalf of the European Commission.

### **1.3 An iterative process for impact assessment**

#### *1.3.1 "Better Regulation"*

According to the principles of "better regulation", EASA shall carry out a Regulatory Impact Assessment (RIA) when producing an Opinion.

Having identified the problem as reflected in paragraph 1.3.2 below, the work has been organised in order to reduce duplication of effort. The Commission has in fact already carried out an initial impact assessment focusing on "whether" the competences of EASA should be extended to flight crew licensing, whose conclusions are summarised in 1.3.3 below.

In addition, and including extensive consultation with stakeholders, the group of experts supporting the Agency for Rulemaking Task FCL.001<sup>13</sup> has developed a number of preliminary RIAs for specific issues. The results of such activities will be recalled in different paragraphs of present document, when appropriate.

#### *1.3.2 Identification of the problem*

According to said Communication (2005) 579<sup>14</sup>, for a long time the Joint Aviation Authorities (JAA) had been developing rules on flight crew licensing (and associated medical requirements), but their application had been left to the discretion of the States which had signed up to them and which afterwards implemented them in very different ways, or did not implement them at all, or, at least, implemented them in different time frames. In some cases (e.g., PPL (A) in UK), there were licenses issued according to JAR-FCL and licenses issued on the basis of less stringent national rules based on ICAO Annex 1. Consequently, there was no uniform level of safety in Europe, but with significant national disparities.

For this reason, the Commission proposed to the legislator to extend the mandate of EASA to air operations, flight crew licensing (FCL) and safety of third-country aircraft. This has now been achieved by the mentioned revised Basic Regulation.

Therein<sup>15</sup> the legislator delegated powers to the Commission to issue supplementing measures in the field of FCL including:

- the different ratings for pilots' licences and the medical certificates adequate for the different types of activities performed, including language proficiency requirements;
- the conditions for issuing, maintaining, amending, limiting, suspending or revoking pilots' licences (including LPL), ratings for pilots' licences, medical certificates, approvals and certificates for instructors, examiners and Aeromedical Examiners (AME), as well as conditions under which such certificates and approvals need not be requested;
- privileges and responsibilities of the holders of licences,
- how pilots of some aircraft referred to in Annex II to the Basic Regulation, when used for commercial air transportation, shall nevertheless comply with the relevant essential requirements.

For the topics listed above, a range of options can be possible, with different impacts on society. The major issues then deserve further analysis, as in the following parts of present RIA.

Furthermore, some disparity exists today for the rules applicable to helicopter pilots, in comparison to aeroplane pilots, which also needs to be assessed.

Finally any possible implementing rules shall:

- contribute to respond for the ever increasing demand for safety from society, which includes not only scheduled commercial air transport, but also, e.g., protection of property and people on the ground;
- not decrease the level of safety during transition from the "old" rules to the "new" ones;
- maintain compatibility with any other EU legislation, as well as aim at harmonisation at global level, and possibly offer Europe the possibility to influence world-wide developments;
- be suitable to increase safety in the face of emerging issues such as greater volume of air traffic and more flexibility for CAT routes even at low level, more complexity of airspace structures, new

<sup>13</sup> [http://www.easa.europa.eu/ws\\_prod/r/doc/final%20ToR%20FCL.001%20\(20.07.06\).pdf](http://www.easa.europa.eu/ws_prod/r/doc/final%20ToR%20FCL.001%20(20.07.06).pdf)

<sup>14</sup> Paragraph 2 therein.

<sup>15</sup> Article 7.6 and 7.7 of Basic Regulation 216/2008.

- actors (e.g., VLJ and UAS) expected to enter the market, more technology (e.g., satellite navigation) suitable also for use on smaller airframes;
- not, however, be over prescriptive or restrictive, which could unnecessarily prevent the access to aviation by new pilots.

### 1.3.3 The Initial Impact Assessment

In paragraph 1.2 above it has been recalled that the Commission has already carried out an impact assessment in 2005, before proposing the extension of the competencies of EASA to air operations, flight crew licensing and safety of third-country aircraft.

Two options in particular were examined by the Commission:

- extending the scope of the Basic Regulation, and hence of the Agency's remit;
- transposing into Community law, via Regulation (EEC) No 3922/91<sup>16</sup>, the rules defined through intergovernmental cooperation within the JAA.

The study showed clearly that it would be better for aviation safety, and for the functioning of the internal market, to introduce specific Community measures; the Commission therefore opted to extend the scope of Basic Regulation and this was endorsed by the legislator.

In the opinion of the Commission then, the extension of the Basic Regulation to FCL implies that most pilots operating in the Community will hold a licence issued on the basis of common requirements, in force uniformly and at the same date. Organisations, flight synthetic training devices and persons involved in the training, testing, checking and medical assessment of pilots must also be certified on the basis of common rules. The EASA would be responsible for checking that these rules are correctly applied by the authorities competent at national level, and would itself certify the organisations and flight synthetic training devices located in third countries.

However, not all pilots should be subject to identical specific rules, since this would well be disproportionate in some cases. So, while commercial air transport would be subject to the maximum requirements, other aviation sectors should be governed by rules adapted to the complexity of the aircraft used and that of the airspace in which they fly. In particular, better provisions should be introduced for "recreational" flying: in this respect the Commission considered that the specific rules developed by the JAA (JAR-FCL PPL) were often seen as excessive by aviation experts.

The present RIA will therefore not repeat the exercise already carried out by the Commission, but on the contrary it will focus on the different options possible at the level of implementing rules, in particular for the new LPL, whose attributes (e.g., minimum age, basic "entry" level, privileges, etc.) need to be defined.

### 1.3.4 RIA attached to EASA A-NPA 14-2006 of 16 October 2006

A RIA on the licensing of pilots of other than complex-motor-powered aircraft used in non-commercial activities was attached to the Agency's A-NPA 14-2006, issued on 16 October 2006<sup>17</sup>. Only two options were identified therein:

- Option 0 "Do nothing", in which case the only applicable regulations will be those included in the basic principles and essential requirements of Regulation (EC) 1592/2002. There would be no implementing rules to further elaborate on essential requirements;
- Option 1, consisting on the creation of implementing rules defining the LPL issued by assessment bodies. This licence would be built around a basic common license to which ratings for different categories of aircraft (aeroplanes, sailplanes, helicopters, balloons, etc.), operations (IFR, night, aerobatics, sailplane, towing, etc.) and specific authorisations (e.g., authorisation to perform pilot-owner maintenance) would be attached.

That RIA concluded that Option 0 was not viable as the Basic Regulation specifically mandates the development of implementing rules for all categories of pilots. Also, it should have been kept in mind that several Member States had already introduced a "National" (with some restrictions) PPL. Option 1 would introduce a new regime of LPL that can maintain the current level of safety due to the foreseen increased activity and stepwise approach bridging with the JAR-FCL PPL (Joint Aviation Authorities - Flight Crew licensing Private Pilot Licence). At the same time the LPL should have a positive economic impact.

<sup>16</sup> Council Regulation (EEC) No 3922/91 of 16 December 1991 on the harmonization of technical requirements and administrative procedures in the field of civil aviation (OJ L 373, 31.12.1991, p. 4-8).

<sup>17</sup> [http://www.easa.europa.eu/ws\\_prod/r/doc/NPA/final%20A-NPA%2014-2006%20General%20Aviation%20\(15.08.06\).pdf](http://www.easa.europa.eu/ws_prod/r/doc/NPA/final%20A-NPA%2014-2006%20General%20Aviation%20(15.08.06).pdf)



In conclusion, Option 1 (i.e. introducing the LPL) had to be preferred. In other words, this second assessment went deeper than the initial impact assessment in 1.3.3 above, but still focused only on “whether” a LPL should be introduced, although considering a number of attributes or conditions related to the LPL.

The present RIA will therefore not duplicate the work already done before publishing A-NPA 14-2006, but, on the contrary, focus on the various alternatives which these implementing rules may entail on “how” the LPL can be introduced and managed.

#### *1.3.5 The present Regulatory Impact Assessment*

In summary, the Impact Assessment on the extension of EASA to FCL has been an iterative process, comprising four steps:

- The initial impact assessment carried out by the Commission which had indeed concluded that extending the EASA’s competencies was the best option;
- The RIA on the LPL attached to A-NPA 14/2006;
- The preliminary RIAs carried out for specific topics by the Agency when preparing task FCL.001;
- And the present RIA which adds further considerations and present conclusive analysis.

Stakeholders have been extensively consulted as presented in paragraph 2.2.2 below.

## 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 community goal (i.e. more effective and efficient safety regulation of flight crews, while not unnecessarily restricting recreational aviation). The impact of the said rules on all categories of affected persons and organisations should be quantified as much as feasible.

The depth of the study shall be proportionate to the likely impact of the proposal, as stated in the applicable Commission guidelines for impact assessment. **These impacts shall be analysed from different "perspectives" (also called "Key Performance Areas" = KPAs).** Therefore this RIA, affecting the aviation sector and in particular flight crew licensing, considers in particular the following KPAs for impact assessment:

- safety;
- economic;
- environment;
- social;
- and regulatory harmonisation, at both EU and global level, which, in the case of FCL, means compatibility with ICAO standards (e.g., Annex 1) and with the regulatory regime of the most important international partners (e.g., USA FAA and in particular FAR Part-61).

More in particular, the impacts listed above have been assessed qualitatively or quantitatively (as order of magnitude), as presented in Table 1:

Assessment	I M P A C T					
	Safety		Economic	ENV	Social	Regulatory harmonisation
	Past	Future impact				
Quantitative	X					
Qualitative		X	X	X	X	X

**Table 1: Qualitative and quantitative impact assessment**

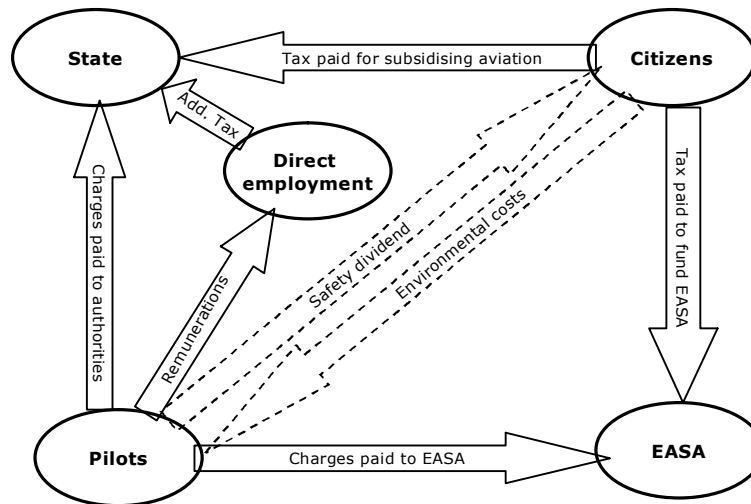
Each of those five KPAs for impact assessment will be reviewed in detail for the most relevant identified issues, from § 2.6 onwards in this document.

#### 2.1.2 Economic flows

Any new aviation safety rule may imply expenditure, income or other economic effects for a number of entities, typically:

- the regulated persons, in this case the pilots;
- the direct employment generated by the former;
- the competent Authorities;
- the Agency;
- all the citizens in the society at large;
- tax payers.

In this case the main economic flows can be depicted in Figure 1 below:



**Figure 1: economic flows**

In this case:

- the pilots could potentially:
  - pay charges to the authorities to obtain their licences;
  - pay remuneration to direct employment (i.e., instructors, examiners, physicians and aircraft mechanics);
  - pay charges to EASA;
  - contribute to reduce or increase the cost deriving from aviation accidents (so-called "safety dividend");
- the direct employment will pay tax in proportion to their remuneration;
- the citizens/taxpayers, benefiting from the "safety dividend", will anyway potentially have to bear costs deriving from:
  - Tax paid to subsidising competent authorities;
  - Tax paid to fund EASA;
  - Additional cost to compensate for the environmental impact of aviation.

All these relations will be examined in the pertinent paragraphs for economic assessment and where possible quantified in order to compare the various options.

### *2.1.3 Assessment methodology*

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

- Identification of the problem (as in 1.3.2 above);
- Identification of the relevant Key Performance Areas (as in 2.1.1 above);
- Problem analysis, described in paragraph 2.3 below;
- Definition of objectives (general, specific and operational) and indicators as presented in paragraph 2.4;
- Identification of alternative options for the main identified issues (e.g., "entry" level for LPL; extension of the privileges; proficiency checks; examiners; medical certificates) in paragraph 2.5;
- Identification and estimation of the size of the target group for each issue;
- Identification and assessment of the impacts of each possible option for all five KPAs in order to determine the most significant ones, versus the applicable specific objectives;
- Conclusive Multi-Criteria Analysis (MCA) for each issue.

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 of an impact matrix in the conclusive

sub-paragraphs from 2.6 onwards 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 of 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 global harmonisation;**
- Finally compare the options by combining their respective weighted scores.

## **2.2 Organisation of the process**

### *2.2.1 Task FCL.001*

Following the legislative proposal by the Commission<sup>18</sup> to extend the competencies to flight crew licensing (FCL), the Agency has published the Terms of Reference for task FCL.001<sup>19</sup>. The objective was to develop rules as regards pilot licensing, encompassing implementing rules and Acceptable Means of Compliance (AMCs) and guidance material for:

- the licensing, training and medical certification of pilots involved in commercial activities and non-commercial activities. For pilots of aeroplanes and helicopters, these rules should be based on JAR-FCL 1, 2 and 3, and JAR-STD;
- the licensing, training and medical certification of pilots of other aircraft, such as balloons and sailplanes, which are not included in JAR-FCL. In this case, new requirements had to be developed, on the basis of ICAO Annex 1 and also existing national regulations. When doing so, one of the main issues to be assessed should be the need for a commercial licence for these types of aircraft;
- persons and organisations responsible for training and assessing pilot's skill and medical fitness, based on JAR-FCL 1, 2 and 3, ICAO Annex 1 and existing national regulations.
- competent authorities, based on appropriate JAA Joint Implementation procedures (JIP's) and harmonised with similar provisions included in other implementing rules.

The rules for the competent authorities, as well as for training organisations and aeromedical centres are out of the scope of the present RIA: for them a dedicated RIA will be compiled by the Agency, as already indicated above in 1.2.

The task FCL.001 has been carried out through a rulemaking group, constituted by external experts<sup>20</sup>, which divided itself into subgroups, respectively for:

- rules for pilot categories formerly covered by JARs as well as pilots of power-lifted aircraft;
- aeromedical requirements and procedures;
- pilot categories outside the scope of the former JARs;
- Leisure Pilot (LPL) requirements. In this case, input was received from the MDM.032 Subgroup on licensing and medical issues<sup>21</sup>;
- requirements for Organisations and Authorities.

<sup>18</sup> Already mentioned COM(2005)579 final of 15 November 2005.

<sup>19</sup> [http://www.easa.europa.eu/ws\\_prod/r/doc/final%20ToR%20FCL.001%20\(20.07.06\).pdf](http://www.easa.europa.eu/ws_prod/r/doc/final%20ToR%20FCL.001%20(20.07.06).pdf)

<sup>20</sup>

[http://www.easa.europa.eu/ws\\_prod/r/doc/FCL.001%20Group%20Composition%20+%20Subgroups%20Iss.%2020.pdf](http://www.easa.europa.eu/ws_prod/r/doc/FCL.001%20Group%20Composition%20+%20Subgroups%20Iss.%2020.pdf)

<sup>21</sup>

[http://www.easa.europa.eu/ws\\_prod/r/doc/gc/GC%20MDM.032%20SG%20Licensing%20Issue%201%20\(27.03.07\).pdf](http://www.easa.europa.eu/ws_prod/r/doc/gc/GC%20MDM.032%20SG%20Licensing%20Issue%201%20(27.03.07).pdf)

Many experts from relevant stakeholders have been involved in the group and sub-groups, which already constituted an element of the stakeholder consultation.

### 2.2.2 Consultation of stakeholders

A structured and iterative consultation of stakeholders (in addition to mails, informal exchanges and participation in several meetings and conferences) has been planned and substantially already carried out via thirteen mechanisms so far, as summarised in Table 2 below:

N.	Responsible	Consultation period	Target Group	Mechanism	Results
1	EASA	2005	Advisory Group of National Authorities (AGNA)	Consultation on EASA annual rulemaking plan	Task FCL.001
2	EASA	2005	Safety Standards Consultative Committee (SSCC)		Task FCL.001
3	EASA	1 <sup>st</sup> half 2006	AGNA	Consultation on ToRs for Task FCL.001	ToRs adopted 20 Jul 2006
4	EASA	1 <sup>st</sup> half 2006	SSCC		ToRs adopted 20 Jul 2006
5	EASA	end 2006	Public through web consultation	A-NPA 14/2006	8054 comments received by stakeholders. Taken into account for the CRD
6	EC	From 01 February 2007	Public through web consultation	Discussion paper on general aviation <sup>22</sup>	74 contributions received
7	EASA	end 2007	Public through web consultation	CRD 14/2006	9 reactions received from 9 stakeholders
8	EASA	28/29 April 2008	All stakeholders	Public Workshop on the first extension of EASA	Around 200 participants
9	EASA	3 <sup>rd</sup> Q 2008	Public through web consultation	NPA 2008-17	Comments possible until 15 December 2008
10	EASA	10/11 June 2008	All stakeholders	1 <sup>st</sup> Public Workshop on FCL	161 participants
11	EASA	27/28 August 2008	All stakeholders	2 <sup>nd</sup> Public Workshop on FCL	160 participants
12	EASA/CA A Sweden	3 October 2008	Regional stakeholders	Workshop on FCL	35 participants
13	EASA/CA A Sweden	18 October 2008	AMEs (Sweden, Slovenia, Latvia)	Workshop on FCL Medical	140 participants
14	EASA/MOT Germany	13 November 2008	Representatives Bundesländer	Workshop on FCL	50 participants

**Table 2: Consultation of stakeholders**

In summary, the Agency, as mandated by its rulemaking procedure, has initially consulted twice AGNA and SSCC respectively on the inclusion of task FCL.001 into the rulemaking programme and then on the detailed ToRs for its progress. Since 2006 EASA has also spared no effort for liaising not only with the competent authorities, but with key stakeholders involved in any type of air operations.

Finally, all the comments to NPA 2008-17 will be analysed, and replies provided in a Comment Response Document (CRD) will be published in the spring of 2009. Possible reactions to the CRD will be analysed in preparation of the Opinion on the implementing rules for FCL.

<sup>22</sup> [http://ec.europa.eu/transport/air\\_portal/internal\\_market/general\\_aviation/consultation\\_en.htm](http://ec.europa.eu/transport/air_portal/internal_market/general_aviation/consultation_en.htm).

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 to the letter, of the applicable rulemaking procedure, in turn based on the principles for "better regulation".

## 2.3 Problem analysis

### 2.3.1 How many pilot licences in Europe?

Of course, any new rules for FCL will firstly impact on the persons holding a pilot licence. There is a great variety of those licences in terms of:

- Commercial/non-commercial operations (i.e. CPL/ATPL versus PPL);
- Aircraft categories (not only aeroplanes or helicopters, but also airships, balloons, sailplanes);
- Additional privileges (instructor; examiner);
- Additional ratings (e.g. instrument).

It is then necessary to preliminarily estimate the order of magnitude of the pilot licences presently active in the EU 27 + 4, bearing in mind that a single physical person can possibly hold more than a licence (e.g. an aeroplane ATPL holder which also holds a helicopter PPL).

For this purpose the Agency, through the expert subgroups working on the matter, circulated, in March 27, a questionnaire to the aviation authorities of the 27 + 4 EASA Member States. The said questionnaire contained in particular the following two questions:

- **Question 1:** How many **active pilot licences**, qualifications and ratings, **based on the JAR-FCL** requirements (covering only aeroplanes and helicopters), currently exist in your country?
- **Question 2:** How many (additional) **active national pilot licences**, and/or any other certificates, qualifications and ratings, **compliant with the standards in ICAO Annex 1**, currently exist in your country for the following categories (including also airships, balloons and sailplanes) of aircraft?

It has to be noticed that Question 2 above includes PPL, but not LPL. 16 States replied to the questionnaire. They represent, according to EUROSTAT<sup>23</sup> a population of around 295 million persons, out of a total of 505.77 millions for the EU 27 + 4. In other words, these **16 reporting States represent around 58% of the total population** in the EASA system. Assuming that the number of pilots is more or less proportional to the totality of the population, the available data can be extrapolated to the total geographical area of interest.

However, from EUROCONTROL Statfor<sup>24</sup> data it emerges that in 2007 the following number of IFR flights has been recorded in the airspace as presented in Table 3 below:

States	No IFR flights in 2007	%
16 reporting States	5,809,932	<b>69%</b>
EASA 27 + 4	8,414,842	87%
Totally 38 EUROCONTROL	9,682,139	100%

**Table 3: Number of IFR flights in Europe**

The number of flights over a country is not directly related to the number of pilots holding a licence released by that country. For instance, over Ireland the total number of flights is more influenced by the transatlantic overflights than by the arrivals and departures from the island. Nevertheless, the volume of aviation activities is not only linked to the population, but also to the GDP, to the presence of major hub airports in the States or to the historical tradition<sup>25</sup>. Therefore, the Agency believes that it is more realistic to assume that **the 16 States having reported represent around 69% of aviation in the 27 + 4 Member States**. In summary, the number of pilot licences active in the said 27 + 4 States in 2007 can be estimated as in Table 4 below for pilots of aeroplanes and helicopters:

<sup>23</sup> DG-TREN Statistical Pocketbook 2007, based on EUROSTAT data:

[http://ec.europa.eu/dgs/energy\\_transport/figures/pocketbook/doc/2007/pb\\_1\\_general\\_2007.pdf](http://ec.europa.eu/dgs/energy_transport/figures/pocketbook/doc/2007/pb_1_general_2007.pdf)

<sup>24</sup> [http://www.eurocontrol.int/statfor/public/subsite\\_homepage/homepage.html](http://www.eurocontrol.int/statfor/public/subsite_homepage/homepage.html)

<sup>25</sup> For example KLM is the oldest airline operating today, having been established in 1919.

Type of pilot licence	TOTAL		
	In the 16 reporting States	Extrapolated to EU 27 + 4	
		16 States represent 58% of population	16 States represent 69% of aviation
Private Pilot Licence for aeroplanes (PPL (A)), issued according to JAR-FCL	46,582		
PPL (A) issued according to national rules compliant with ICAO Annex 1	66,260		
<b>Total PPL (A)</b>	<b>112,842</b>	<b>194,540</b>	<b>163,621</b>
Commercial Pilot Licence for aeroplanes (CPL (A)), issued according to JAR-FCL	24,655		
CPL (A) issued according to national rules compliant with ICAO Annex 1	9,627		
<b>Total CPL (A)</b>	<b>34,282</b>	<b>59,102</b>	<b>49,709</b>
Air Transport Pilot Licence for aeroplanes (ATPL (A)), issued according to JAR-FCL	29,192		
ATPL (A) issued according to national rules compliant with ICAO Annex 1	14,308		
<b>Total ATPL (A)</b>	<b>43,500</b>	<b>74,994</b>	<b>63,075</b>
PPL (H) for helicopters, according to JAR-FCL	2,384		
PPL (H) issued according to national rules compliant with ICAO Annex 1	4,357		
<b>Total PPL (H)</b>	<b>6,741</b>	<b>11,621</b>	<b>9,774</b>
CPL (H) issued according to JAR-FCL	1,873		
CPL (H) issued according to national rules compliant with ICAO Annex 1	2,925		
<b>Total CPL (H)</b>	<b>4,798</b>	<b>8,272</b>	<b>6,957</b>
Air Transport Pilot Licence for helicopters (ATPL (H)), issued according to JAR-FCL	1,006		
ATPL (H) issued according to national rules compliant with ICAO Annex 1	1,198		
<b>Total ATPL (H)</b>	<b>2,204</b>	<b>3,800</b>	<b>3,196</b>

**Table 4: Number of pilot licences in EASA Member States for aeroplanes and helicopters**

However, licences are also issued to pilots of airships, balloons and sailplanes. Therefore, considering all categories of pilots, the figures contained in Table 5 below can be estimated:

Type of pilot licence	TOTAL		
	In the 16 reporting States	Extrapolated to EU 27 + 4	
		16 States represent 58% of population	16 States represent 69% of aviation
Total PPL (A)	112,842	194,540	<b>163,621</b>
Total PPL (H)	6,741	11,621	<b>9,774</b>
Total PPL (A + H)	119,583	206,178	<b>173,395</b>
Total CPL (A)	34,282	59,102	<b>49,709</b>
Total CPL (H)	4,798	8,272	<b>6,957</b>
Total CPL (A + H)	39,080	67,374	<b>56,666</b>
Total ATPL (A)	43,500	74,994	<b>63,075</b>
Total ATPL (H)	2,204	3,800	<b>3,196</b>
Total ATPL (A + H)	45,704	78,794	<b>66,271</b>
<b>TOTAL A + H</b>	<b>289,151</b>	<b>352,345</b>	<b>296,332</b>
Total licences airship	4	7	<b>6</b>
Total licences balloons	6,239	10,757	<b>9,047</b>
Total licences sailplanes	49,958	86,134	<b>72,439</b>
<b>GRAND TOTAL pilot licences</b>	<b>345,532</b>	<b>449,243</b>	<b>377,824</b>

**Table 5: Total number of pilot licences in EASA Member States**

Through an alternative path, the Agency has also considered the number of pilots (ATPL (A)) communicated by major airlines registered in the mentioned 16 reporting States to ICAO. These airlines reported 29,140 pilots and co-pilots, while logging 5,809,932 IFR flights in Europe in 2007. As said above, this number of flights represents 69% of the total IFR flights recorded by EUROCONTROL in that year for the totality of the 27 + 4 EASA States. Therefore, the number of pilots and co-pilots holding an ATPL (A) for those airlines can be extrapolated and estimated in the range of 42,205 pilots.

However, not all the commercial air transport operators have reported the number of their pilots to ICAO in 2007. For instance, among the 12 airline members (in July 2008) of the European Low Fares Airline Association (ELFAA)<sup>26</sup> only 5 had reported to ICAO. Equally, the majority of the 38 CAT operators members of the International Air Carrier Association (IACA)<sup>27</sup> had not reported the number of their pilots to ICAO. The number of 42,205 ATPL (A) has hence to be considered underestimated by around 30%. This leads to the conclusion that the number of ATPL (A) in Europe is in the range of 60,000, as already estimated in Table 5 above.

Data provided to EASA by the International Gliding Commission<sup>28</sup> lead to an estimation (for 2006) of 83,840 sailplane pilots in the EASA States, which is compliant with the order of magnitude estimated in Table 5 above.

**In conclusion, the figures contained in the last column to the right in Table 5 will be used in the rest of this document.**

### 2.3.2 FCL Safety level in Europe

#### 2.3.2.1 Source of safety information

According to Article 15.4 of the Basic Regulation<sup>29</sup>, the Agency publishes every year an "Annual Safety Review" report. To do so the Agency has created a data base with information coming from various sources such as:

<sup>26</sup> <http://www.elfaa.com/members.htm>

<sup>27</sup> <http://www.iaca.be/index.cfm?E9B31D6E-65B8-CFEE-A4A1-D03907F4E828>

<sup>28</sup> <http://www.fai.org/gliding/about>

<sup>29</sup> Replacing analogous Article 11.4 of Regulation (EC) No 1592/2002.



- the ICAO Accident/Incident Data Reporting system (ADREP), in particular with reference to commercial air transport by large airplanes;
- the European Civil Aviation Conference (ECAC) and the EASA Member States, with reference to smaller airframes; and
- any other possible and credible data source (e.g. "independent accident/incident investigators"), when available.

For the purposes of present RIA, the Safety Analysis Department of the Agency has made available preliminary data which will contribute to the "Annual Safety Review 2007" and in addition produced a specific internal document IPR 01/2008, containing information about accidents, in the period 1998-2007, in the EASA Member States and in the USA. In this IPR the following groups were considered:

- commercial air transport by large aeroplanes (i.e. MTOM > 5700 Kg and certified under CS-25 or equivalent);
- complex motor-powered aircraft<sup>30</sup> with a MTOM of less than 5700 Kg;
- non-complex or non-motorised aircraft.

Furthermore, information published by the European Commission (DG-TREN) or made available to the Agency by national authorities (e.g. UK CAA) has been used.

Finally, in order to possibly estimate future emerging risks, Deliverable D2 "The Performance Target", released by the SESAR Consortium<sup>31</sup> in November 2006 has been considered, as well as the "Annual Safety Report 2007"<sup>32</sup> issued by the Safety Regulation Commission of EUROCONTROL, or information available through the web, as for instance provided by the Flight Safety Foundation.

### 2.3.2.2 Commercial air transport by large aeroplanes

In paragraph 1.2 above the Agency has explained that the following topics are out of scope of the present RIA:

- Commercial Pilots (CPL) and Air Transport Pilots (ATPL) of aeroplanes, since the rules applicable to them are substantially the same as contained in former JAR-FCL 1, which in turn had been transposed in all member States<sup>33</sup>;
- Multi-Crew Pilot Licences (MPL) whose requirements are equally unchanged from JAR-FCL 1.

The "Annual Safety Review 2006"<sup>34</sup> published by EASA contains data showing that the safety of scheduled public air transport has dramatically improved from 1945 onwards. In particular, the rate of passenger fatalities per 100 million passenger miles, was around 5 in the late 1940s, and decreased to about 0.5 (i.e. ten times better) in 1968, while since 1997 it has been constantly in the range of 0.05: i.e. 100 times better than in 1945, ten times better than in 1968, but constant for about ten years.

In addition, figure 3 in the mentioned review shows that only about 5% of the fatal accidents occurred worldwide with public transport operators (aeroplanes above 2,250 Kg MTOM) affected operators registered in the EU. Finally, figure 10 in the same report shows that the rate of fatal accidents, for CAT, in the EU, has been among the lowest in the world, in the period between 2000 and 2005.

Finally, DG-TREN, on page 3.7.6 of its "Statistical Pocketbook 2007"<sup>35</sup>, has reported that in 2006 and 2007, respectively 1 and 4 fatalities/year have been caused by accidents occurred with commercial operators registered in the EU 27. The excellent safety record summarised herein, also related to ATPL and CPL factors (although of course not exclusively), demonstrates that there is no major safety concern in the EU for these types of pilot licences. In turn, the Agency is not proposing to substantially change the rules already promulgated by JAA for these categories of pilots; rules which have been already largely implemented by Member States.

<sup>30</sup> As defined by Article 3(j) of the Basic Regulation.

<sup>31</sup> [http://www.sesar-consortium.aero/mediasandfiles/File/05\\_docs/DLM-0607-001-02-00.pdf](http://www.sesar-consortium.aero/mediasandfiles/File/05_docs/DLM-0607-001-02-00.pdf)

<sup>32</sup> [http://www.eurocontrol.int/src/gallery/content/public/documents/report/srcdoc43\\_e1.0\\_r1%20-%20EPR%20Final.pdf](http://www.eurocontrol.int/src/gallery/content/public/documents/report/srcdoc43_e1.0_r1%20-%20EPR%20Final.pdf)

<sup>33</sup> Comparative study on national requirements regarding personnel licences for flight crew in the current legislation of the Member States of the European Economic Area, dated 11 November 2005 and carried out by the JAA on behalf of the European Commission.

<sup>34</sup> [http://www.easa.europa.eu/ws\\_prod/g/doc/COMMS/Annual%20Safety%20Review%202006.pdf](http://www.easa.europa.eu/ws_prod/g/doc/COMMS/Annual%20Safety%20Review%202006.pdf)

<sup>35</sup> [http://ec.europa.eu/dgs/energy\\_transport/figures/pocketbook/doc/2007/pb\\_3\\_transport\\_2007.pdf](http://ec.europa.eu/dgs/energy_transport/figures/pocketbook/doc/2007/pb_3_transport_2007.pdf)

**In conclusion the safety analysis supports the decision to consider ATPL (A), CPL (A) and MPL (A) out of scope of present RIA.**

### 2.3.2.3 Helicopters

The data collected by the Agency for accidents occurred with helicopters registered in the EASA Member States, with a MTOM greater than 2250 Kg, during commercial air transport operations, are summarised in Table 6 below:

Period		Number of accidents		Ratio Total/fatal accidents	Fatalities			Ratio fatalities/fatal accident
		Total	Fatal		On board	Ground	Total	
1996 - 2005	Av.	7	3	2.3	11	0	11	3.7
	Tot.	70	30	2.3	110	0	110	3.7
2006		15	4	3.7	13	0	13	3.2
2007		7	1	7	7	0	7	7
<b>TOTAL</b>		<b>92</b>	<b>35</b>	<b>2.6</b>	<b>130</b>	<b>0</b>	<b>130</b>	<b>3.7</b>

**Table 6: Helicopter (MTOM > 2250 Kg) accidents in EASA Member States**

In the period 1998-2007 the Agency noticed that, for helicopters used in CAT operations world wide, registered in EASA Member States and with MTOM > 2250, the **top causal factors for fatal accidents** were in the order:

- "Unknown" (UNK);
- Controlled Flight Into Terrain (CFIT);
- Loss of Control – In Flight (LOC-I);
- "Other" (OTHR);
- Low altitude operations (LALT).

**Pilot training and airmanship may be then the root causes for a significant proportion** of the mentioned fatal events.

Furthermore, for 2006 and 2007 the Agency collected data about accidents affecting helicopters of any mass. These data, although covering only two years, are reported in Table 7 below:

Period		Number of accidents		Ratio Total/fatal accidents	Fatalities			Ratio fatalities/fatal accident
		Total	Fatal		On board	Ground	Total	
2006		116	14	8.3	47	0	47	3.4
2007		96	16	6	43	0	43	2.7
<b>TOTAL</b>		<b>212</b>	<b>30</b>	<b>7.1</b>	<b>90</b>	<b>0</b>	<b>90</b>	<b>3.0</b>

**Table 7: Accidents for helicopters (any mass) registered in EASA Member States**

From the data presented in Table 7 above, although limited, the following coarse estimations can be derived for **helicopters of any mass**, registered in EASA Member States:

- Average number of accidents in the EASA Member States:  $212/2 = 106/\text{year}$ ;
- Average number of fatal accidents in the EASA Member States:  $30/2 = 15/\text{year}$ ;
- **Ratio total accidents/fatal accidents:  $212/30 = 7.1$ ;**
- Average number of victims per helicopter fatal accident:  $90/30 = 3.0$ .

It has to be noted that, according to Agency data, 78% of the accidents recorded in 2006 and 2007 affected helicopters below 2,250 Kg MTOM and 19% helicopters with  $2,251 < \text{MTOM} < 5,700$  Kg.

In addition, only 12% of such accidents occurred during commercial air transport operations, while 32% during aerial work and 56% during general aviation operations. More in particular, 47% of helicopter accidents occurred during recreational flights and 25% during instruction in flight. So, for the largest part, these accidents involved general aviation operations and “non-complex” helicopters<sup>36</sup>.

Since the privileges granted by the LPL licence for helicopters (i.e. FCL.105.H) are limited to single engine piston helicopters with a maximum certificated takeoff mass of 2000 kg, the **data in this paragraph can be applicable to both PPL (H) and LPL (H).**

No reliable data about causal factors are presently available for the largest part of accidents occurred to “lighter” helicopters. However, **from the above it can be assumed that around 35% of helicopter accidents are related to FCL factors**, so possibly leading to:

- **37.1 helicopter accidents per year, linked to FCL factors;**
- **5.2 fatal helicopter accidents per year, linked to FCL factors;**
- **15.7 victims/year following fatal helicopter accidents, linked to FCL factors.**

#### 2.3.2.4 Complex (but not large) motor-powered aircraft

In the second group of aircraft considered in the internal document IPR 01/2008, EASA has included the “complex motor-powered” but not “large” aircraft (i.e. with a Maximum Take Off Mass (MTOM) not greater than 5700 kg). Such aircraft, according to Article 3(j) of the EASA Basic Regulation are:

- (i) an aeroplane:
  - certificated for a maximum passenger seating configuration of more than nineteen, or
  - certificated for operation with a minimum crew of at least two pilots, or
  - equipped with (a) turbojet engine(s) or more than one turboprop engine, or
- (ii) a helicopter certificated:
  - for a maximum take-off mass exceeding 3175 kg, or
  - for a maximum passenger seating configuration of more than nine, or
  - for operation with a minimum crew of at least two pilots, or
- (iii) a tilt rotor aircraft.

The number of accidents per year, occurred to airframes in this group, registered in the USA or Europe, from 1998 to 2007, is presented in Table 8 below:

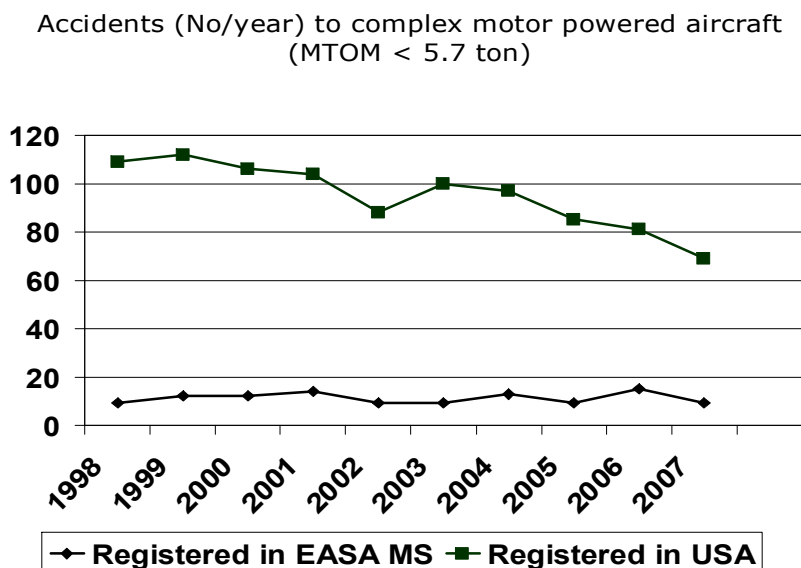
EASA MS		USA	
Year	No	Year	No
1998	9	1998	109
1999	12	1999	112
2000	12	2000	106
2001	14	2001	104
2002	9	2002	88
2003	9	2003	100
2004	13	2004	97
2005	9	2005	85
2006	15	2006	81
2007	9	2007	69
<b>TOTAL</b>	<b>111</b>	<b>TOTAL</b>	<b>951</b>
<b>AVERAGE</b>	<b>11.1/year</b>	<b>AVERAGE</b>	<b>95.1/year</b>

**Table 8: Number of accidents/year for complex (but not large) motor-powered aircraft**

**It is assumed that these aircraft are, for the greatest part, employed in “non-commercial operations” by general aviation. Their pilots may hold a CPL or PPL, either (A) or (H).**

<sup>36</sup> As defined by Article 3(j) of Basic Regulation 216/2008.

The above data can also be presented in graphical form as in Figure 2 below:



**Figure 2: Number of accidents/year for complex motor-powered aircraft**

From figure 1 it can be observed that in the USA, along the considered decade, there has been a visible reduction in the absolute number of accidents, which however is one order of magnitude greater than in Europe. In fact the number of accidents between the two regions differs significantly with the USA having an almost tenfold higher number of accidents. This is because a much higher number of aircraft in this second group are operated in the USA and many of them in General Aviation. On the contrary, **in the EU 27 + 4** the same number remained constant: **around 11.1 accidents per year**.

For this type of aircraft a ratio of **one fatal accident out of about 5.5 accidents** is assumed, identical to the ration for larger aircraft: i.e. leading to **2 fatal accidents per year**.

Few samples of such "complex" aeroplanes are presented in Table 9 below:

Aircraft	Engines	MTOM (Kg)	Passengers
Beech Premier	Two turboprops	5,670	6
Beech King Air	Two turboprops	4,580	7
Citation CJ2+	Two turboprops	5,669	6
Diamond D-jet	Single jet engine	2,317	4

**Table 9: typical "complex" (but not "large") aeroplanes**

It can therefore be assumed that **a fatal accident** for this category of aeroplanes will cause in average **5 victims**. This might lead to (2 x 5) 10 victims per year in this group of aircraft, often piloted by persons holding a PPL (A) or a CPL(A).

Again more than one "category" can be assigned to a single accident, so the total in the following Table 10 is higher than the actual number of accidents presented above:

EASA MS			USA		
Category		No accidents	Category		No accidents
SCF-NP	failure (non-power plant)	27	LOC-I	Loss control – in flight	146
ARC	Abnormal rwy contact	21	SCF-NP	non-power plant	125
LOC-I	Loss of control – in flight	17	ARC	Abnormal rwy contact	113
CFIT	Controlled flt into terrain	10	RE	Runway excursion	111
SCF-PP	Power plant failure	9	CFIT	Contr. flt into terrain	85
UNK	Unknown/undetermined	9	SCF-PP	Power plant	73
RE	Runway excursion	9	FUEL	Fuel related	62
<b>PARTIAL TOTAL</b>		<b>102</b>	<b>PARTIAL TOTAL</b>		<b>715</b>
LOC-G	Loss of control - ground	4	OTHR	Other	44
FUEL	Fuel related	4	LOC-G	Loss control - ground	36
OTHR	Other	3	ICE	Icing	36
F-POST	Fire/smoke (post-impact)	3	UNK	Unknown	33
RAMP	Ground Handling	2	USOS	Undershoot/overshoot	22
F-NI	Fire/smoke (non-impact)	2	GCOL	Ground Collision	21
LALT	Low altitude operations	1	F-NI	Fire/smoke (non-imp.)	15
ICE	Icing	1	RAMP	Ground Handling	14
MAC	AIRPROX/midair collision	1	F-POST	Fire/smoke (post-imp.)	14
TURB	Turbulence encounter	1	ADRM	Aerodrome	13
WSTR					
W	Windshear/thunderstorm.	1	MAC	AIRPROX/midair collision	12
ADRM	Aerodrome	1	WSTRW	Windshear/thunderstorm	11
USOS	Undershoot/overshoot	1	RI-A	Rwy incursion - animal	10
<b>GROSS TOTAL</b>		<b>127</b>	<b>GROSS TOTAL</b>		<b>986</b>
<b>% TOP 7 OVER TOTAL</b>		<b>80 %</b>	<b>% TOP 7 OVER TOTAL</b>		<b>72 %</b>

**Table 10: Most frequent accidents categories for aircraft below 5,700 kg but belonging to Article 3 (j) in Regulation 216/2008**

In the top 7 categories of accidents the ranking does not vary as much between EASA MS and the US for this group of aircraft.

**From Table 10 it can therefore be observed that in the EASA Member States around 80% (of the total number of accidents) belong to the seven “top” categories: this means (80% of 11.1) about 8.9 accidents/year. 1.6 (i.e. 8.9/5.5) are estimated to have been fatal.**

Furthermore, among the categories listed above, it can be assumed that in a number of cases, causal factors linked to FCL factors are likely for at least the following three (out of seven) categories:

- ARC: Abnormal runway contact;
- LOC-I : Loss of control – in flight;
- CFIT: Controlled flight into terrain;
- RE: Runway excursion.

It is also true that for the said categories, causal factors linked to air navigation services or aerodrome may well be present. It is then assumed that, among the 8.88 accidents/year in the EASA members States, for the seven “top” categories in the period 1998-2007, **about 35% can be linked to FCL causes: i.e. 3.1 accidents/year and, out of them (3.1/5.5) 0.6 fatal accidents/year (and 3 victims)** for this category of relatively “light” but “complex” motor-powered aircraft, the vast majority of which is used for air taxi, business aviation or for similar operations for which a PPL (A) is sufficient.

#### 2.3.2.5 Non complex aeroplanes

The privileges for LPL (A) proposed by the Agency in NPA 2008-17 (i.e. FCL.105.A) are to fly single-engine piston aeroplanes or touring motor gliders (TMG) with a maximum certificated takeoff mass of

2000 kg or less and carrying a maximum of 3 persons. These aircraft are considered “non-complex motor-powered” according to mentioned Article 3(j) of the Basic Regulation.

Therefore, the holder of a **LPL (A) can only pilot “non-complex” aircraft**, as well as, eventually, aircraft comprised in Annex II of the basic EASA Regulation (if the Member State chooses to regulate this way), the latter however out of scope for the Agency.

Available data has been published in the Agency’s “Annual Safety Review 2006” and referred only to that year. This data is summarised in Table 11 below:

Type of aircraft	Number of accidents		Ratio Total/fatal accidents	Fatalities	Ratio fatalities/fatal accident
	Total	Fatal		Total	
Fixed wing aeroplanes	385	55	7.0	102	1.9
Ultra light / micro light aeroplanes <sup>37</sup>	356	64	5.6	81	1.3
<b>TOTAL</b>	<b>741</b>	<b>119</b>	<b>6.2</b>	<b>183</b>	<b>1.5</b>

**Table 11: Summary of accidents (year 2006) in EASA Member States for “non-complex” aeroplanes (including Annex II aircraft)**

Even if the data available are not exhaustive (e.g. “non-complex” aircraft may be even beyond 2,000 Kg MTOM, while lighter machine can be piloted also by PPL or CPL), for the time being the following estimations can be derived for “non-complex” aeroplanes in EASA Member States:

- Average number of accidents in the EASA Member States: 385/year
- Average number of fatal accidents in the EASA Member States: 55/year
- **Ratio total accidents/fatal accidents: 7.0**
- Average number of victims per fatal accident: 1.9

EASA has also compared a number of accidents occurred in the EU 27 + 4, versus some accidents occurred in the USA. The following accident categories have been assigned, as presented in following Table 12:

<sup>37</sup> Excluded from Agency’s competence, if MTOM below 500 kg, according to paragraph (e) of Annex II to Basic Regulation 216/2008.

EASA MS			USA		
Accident Category		No accidents	Accident Category		No accidents
OTHR	Other	4	LOC-I	Loss control – in flight	35
CFIT	Controlled flt into terrain	4	SCF-PP	Power plant failure	31
ARC	Abnormal rwy contact	4	SCF-NP	Failure (non-power plant)	30
LOC-I	Loss of control – in flight	2	RE	Runway excursion	24
SCF-PP	Power plant failure	2	ARC	Abnormal rwy contact	23
RE	Runway excursion	2	FUEL	Fuel related	20
MAC	AIRPROX/midair collision	2	CFIT	Contr. flight into terrain	19
ICE	Icing	2	LOC-G	Loss control - ground	11
<b>PARTIAL TOTAL</b>		<b>22</b>	<b>PARTIAL TOTAL</b>		<b>203</b>
SCF-NP	failure (non-power plant)	1	UNK	Unknown	11
WSTR					
W	Windshear/thunderstorm.	1	OTHR	Other	10
RAMP	Ground Handling	1	LALT	Low altitude operations	9
			ICE	Icing	9
			F-NI	Fire/smoke (non-imp.)	8
			GCOL	Ground Collision	5
			USOS	Undershoot/overshoot	4
			MAC	AIRPROX/midair coll.	3
			F-POST	Fire/smoke (post-imp.)	3
			TURB	Turbulence encounter	1
			ADRM	Aerodrome	1
			WSTRW	Windshear/thunderst.	1
<b>GROSS TOTAL</b>		<b>25</b>	<b>GROSS TOTAL</b>		<b>268</b>
<b>% TOP 7 OVER TOTAL</b>		<b>88 %</b>	<b>% TOP 7 OVER TOTAL</b>		<b>76 %</b>

**Table 12: Most frequent accidents categories for “non-complex” aeroplanes**

Since the European data is not only limited, but also often not complete for this group of aircraft, the **USA “top”-eight categories** (i.e. the most frequently reported) are considered:

- Two of them are normally linked to technical factors: SCF-PP (power plant failure or anomaly) and SCF-NP (failure of other parts, different from power plant);
- **four may well be correlated to FCL factors: LOC-I (loss control – in flight), ARC (abnormal runway contact), CFIT (controlled flight into terrain) and LOC-G (loss control – ground);**
- but, even for the two latter categories (RE - Runway excursion and FUEL) FCL causal factors are likely to be present.

Many aircraft in this group are excluded from the EASA competence on the basis of Annex II to its Basic Regulation. However, it is herein assumed that the “top categories” in this light segment of recreational aviation are not significantly different for aircraft included or not in Annex II. While in any case PPL, LPL or even other pilots, hold licences whose limits of privileges do not correspond to the thresholds in Annex II of the Basic Regulation.

In conclusion, it is assumed in this RIA that **76% of the total accidents belong to the eight top categories** (like in the USA, whose data is more comprehensive): **i.e. 293** (i.e. 76% of 385) **accidents/year in the EASA Member States, of which (293/7.0) 42 fatal, causing (42 x 1.5) 63 victims.**

As said above, four of those “top” categories can be linked mainly to piloting skill, while two can also be connected to FCL factors. It is therefore assumed that at least **50% of the accidents for this group of aircraft are due to FCL causal factors**, therefore leading to the following estimations for aircraft registered in the EASA Member States:

- **146.5** (I.e. 50% of 293) **accidents of “non-complex” aeroplanes per year, linked to FCL factors;**
- **21 of them fatal;**
- **Representing 31.5 victims/year, linked to FCL related factors.**

Of course, these aircraft can be piloted also by persons holding a CPL or PPL and not a LPL. However, a sort of LPL (i.e. “national” PPL) had been introduced in UK in 2002 and in the Netherlands (i.e. “recreational” PPL) in the same period. From data made available by the UK CAA no trend can be identified to differentiate the safety of LPL versus the safety of PPL. In particular, a survey of **all accidents to aeroplanes below 5,700 kg** (not helicopters) in six months of recent UK AAIB Bulletins shows the following:

Type of licence	Accidents 1 <sup>st</sup> half 2008	Licences issued in 2007	Ratio New licences/accidents
ATPL	5	1,218	243.6
CPL	7	1,146	163.7
PPL	44	1,869	42.5
NPPL	14	749	53.5
Student Pilot	4	N.A.	N.A.

**Table 13: rate licences/accidents in UK in 2007/08**

From the above data it could perhaps be argued that ATPL and CPL show an apparent accident rate (versus the number of new licences) much lower than PPL or LPL (NPPL in UK semantic). However, this ratio is disputable, since in the number of accidents also those occurred to pilots already holding the licence from a certain time were included. However, should the data be considered relevant, it confirms that a RIA is not necessary for the former types of licences. On the contrary, the level of safety for PPL and LPL could still be significantly improved.

In any case, **there is no evidence that the LPL is less safe than the PPL.**

#### 2.3.2.6 Sailplanes and balloons

The data available to the Agency, although limited only to the year 2006, and maybe not even complete, is summarised in Table 15 below. In the absence of data more complete and of better quality, they will nevertheless be used in the present RIA.

Type of aircraft	Number of accidents		Ratio Total/fatal accidents	Fatalities Total	Ratio fatalities/fatal accident
	Total	Fatal			
Sailplanes	245	31	8	41	1.3
Balloons	15	0	∞	0	N.A.
<b>TOTAL</b>	<b>260</b>	<b>31</b>	<b>8.4</b>	<b>41</b>	<b>1.3</b>

**Table 15: Summary of accidents (year 2006) in EASA Member States for sailplanes and balloons**

From the previous paragraphs of this safety analysis it could be considered that there seems to be an inverse relationship between the size of the aircraft/complexity of operations and the proportion of accidents due to pilot issues/factors. Therefore, **for sailplanes and balloons, it is assumed that 80% of the total accidents are due to FCL causes.**

Consequently, the following estimations for sailplanes registered in the EASA Member States can be offered, although on the basis of very limited and possibly not complete data:

- **196 accidents of sailplanes per year, linked to FCL factors;**
- **24.5 of them fatal;**
- **Representing 31.8 victims/year, linked to FCL factors.**



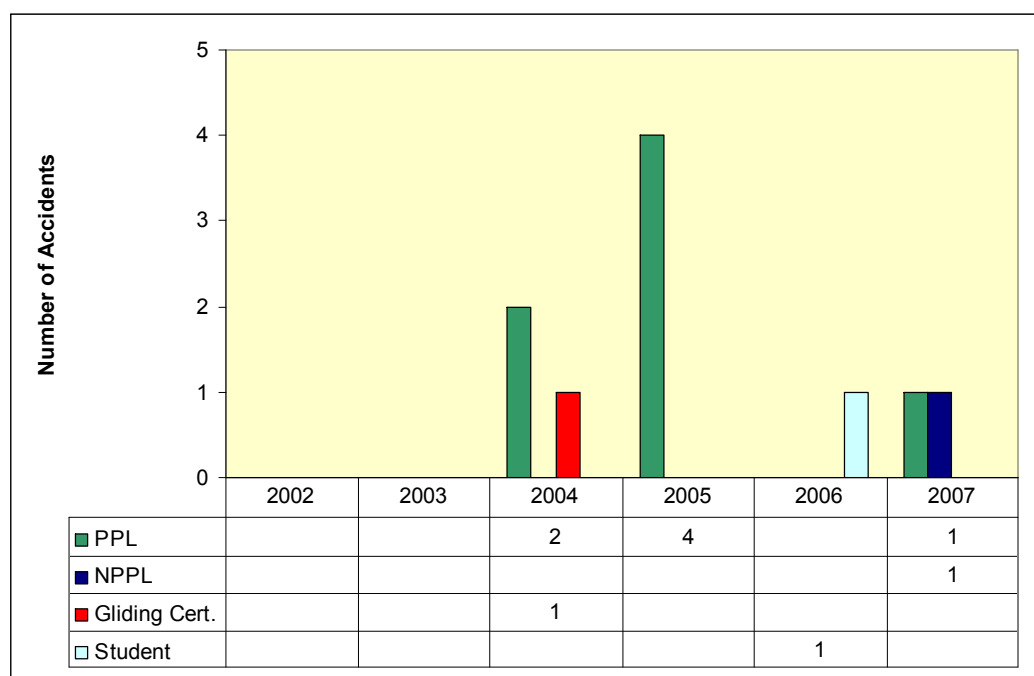
And for balloons:

- **12 accidents of balloons per year, linked to FCL factors;**
- **none of them fatal.**

#### 2.3.2.7 Number of accidents with medical related issues

Figure 4 shows the number of accidents with a medical related issue affecting the pilot-in-command (PIC) (PIC), as provided by the UK CAA. These cases include instances of incapacitation (5), prior medical conditions (1), illness during flight (1) and accidents where there was evidence of drugs (prescribed, recreational or illegal) in the bloodstream of the PIC that could have affected pilot performance (3).

Again, from the data available there is no evidence that the "lighter" medical requirements applicable to NPPL (equivalent of the LPL) in the UK, in comparison with those for the PPL, have lead to any degradation in safety.



**Figure 4: Number of accidents with a medical related issue**

#### 2.3.2.8 Air Traffic Management (ATM) complexity

In the history of aviation mid-air collisions have unfortunately been recorded with catastrophic consequences. In a number of cases the collision was between a large aeroplane used for CAT and a much smaller general aviation airframe. A summary of some of those events is presented in Table 16 below:

N o	Date	Location	CAT aircraft		Colliding G.A. Aircraft	Victims
			Air Operator	Type		
1	19 May 1960	Paris (FR)	Air Algerie	Caravelle	Stampe SV-4C biplane	1
2	9 Mar 1967	OH (USA)	TWA	DC9-15	Beechcraft 55 Baron	26
3	19 July 1967	NC (USA)	Piedmont	B-727	Cessna 310	82
4	9 Sept 1969	IN (USA)	Allegheny	DC9-31	Piper Pa-28 Cherokee	83
5	25 Sep 1978	CA (USA)	Pacific Southwest	B-727-214	Cessna 172	144
6	31 Aug 1986	CA (USA)	Aeromexico	DC9-32	Piper Pa-28-181 Cherokee	82
7	29 Sep 2006	Peixoto de Azevedo (Brazil)	Gol Transportes Aéreos	B-737-8EH	Embraer 135 BJ Legacy 600	154
7	<b>TOTAL (in 50 years world wide)</b>					<b>572</b>
	<b>Average victims per accident</b>					<b>82</b>

**Table 17: Summary of fatal mid-air collision between CAT and general aviation aircraft**

From the Table it can be observed that, world wide, 7 fatal mid-air collisions between a large CAT aeroplane and a general aviation aircraft occurred in almost 50 years: i.e., 0.14 collisions/year. One of them (i.e. around 15%) occurred in the EU.

**Assuming that for general aviation this will mainly involve complex motor-powered aeroplanes and non-complex motor-powered aeroplanes (see the involved GA aircraft types in table 17) the following calculation is based on the assumption that half of the total amount of accidents will be caused by a complex motor-powered and the other half by a non-complex motor-powered aircraft. The contribution of FCL factors can be estimated in the range of 35% for complex and 50% for non-complex aeroplanes: i.e. about 0.0037 mid-air collision per year in the EU 27 + 4 in the complex category and another 0.0052 mid-air collision in the non-complex category, with 0.105 victims in the case of complex motor-powered aircraft and 0.15 victims in the other category.**

However, the SESAR<sup>38</sup> Deliverable D2 defined as an initial indicative safety performance objective, built on the ATM2000+ Strategy objective: "To improve safety levels by ensuring that the numbers of ATM induced accidents and serious or risk bearing incidents (includes those with direct and indirect ATM contribution) do not increase and, where possible, decrease".

Then SESAR added that, considering the anticipated increase in the European annual traffic volume, the implication of the initial safety performance objective is that the overall safety level would gradually have to improve, **so as to reach an improvement factor of 3** in the short term, in order to meet the safety objective in 2020. **This is based on the assumption that safety needs to improve with the square of traffic volume increase in order to maintain a constant accident rate.** In other words, even only to maintain the same absolute numbers of accidents and victims, in face of more and more complex traffic patterns in a more and more congested airspace, it is necessary to significantly improve the safety levels. **A failure to do so could easily result in at least doubling the number of accidents and victims, due to the greater traffic density and more complex airspace structures.**

It is true that the SESAR Focus Area covers the occurrence and prevention of accidents only if involving aircraft with a MTOW > 2.25 tonnes, operating under IFR, with a direct and/or indirect ATM contribution: aircraft usually piloted by CPL or ATPL and not by non-commercial pilots. But the safety hazards also include potential collisions on the ground and in the air. The latter could even be caused by a light aircraft infringing the airspace limits within which it should remain. In this case a relatively small airframe could contribute to the loss of about 100 lives on-board a big airliner, entering not only airspace but perhaps also a runway without proper authorisation, as indeed it occurred, for instance at Linate (Italy) on 08 October 2001<sup>39</sup>.

In fact, in its "Annual Safety Report 2007", EUROCONTROL notices that after the significant increase (30%) in total numbers of **"Unauthorised Airspace Penetration"** recorded in 2005, the increase in the 2006 preliminary data was less marked at 4%, which, however, still corresponds to a **total of almost 1500 incidents/year**. Due to a missing differentiation between the different GA categories, having caused these airspace infringements, the following calculation (see table 17) is based on the assumption that 1100 airspace infringements were caused by non-complex motor-powered aeroplanes, 300 by complex aeroplanes and 100 by helicopters. Although in EUROCONTROL's opinion it was too early to say whether there was a trend, the said report presents data from which one can observe that there were **60 unauthorised penetrations in 2001 per million flight hours and 120 (i.e. twice as much) five years later (i.e. both in 2005 and 2006)**. Therefore, the "Annual Safety Report 2007" commended the awareness raised through the Safety Improvement Initiative on "Airspace Infringements", launched by the same EUROCONTROL and included such penetrations in the list of the **Key Risk Areas** for ATM/Airspace management.

The EUROCONTROL initiative on "Airspace Infringement"<sup>40</sup> had been launched after a recommendation to the EUROCONTROL Safety Team by the Safety Improvement Sub-Group (SISG) at the end of 2005. The SISG had analysed on a regular basis the safety data collected by the European States and had identified the so called "key risks areas", or, in other words, the priority areas, which require the focus of the

<sup>38</sup> [http://www.sesarju.eu/public/standard\\_page/background.html](http://www.sesarju.eu/public/standard_page/background.html)

<sup>39</sup> <http://aviation-safety.net/database/record.php?id=20011008-0>

<sup>40</sup> [http://www.eurocontrol.int/safety/public/standard\\_page/Airspace\\_Infringement\\_Initiative.html](http://www.eurocontrol.int/safety/public/standard_page/Airspace_Infringement_Initiative.html)

collective safety improvement efforts: airspace penetration was one of them. The focus of this safety initiative is to reduce the probability of infringement of controlled airspace, which can be defined as a flight into notified airspace made without prior approval from the designated ATC Unit. The "controlled airspace" comprises ICAO airspace classes A to E. Among the deliverables published so far, EUROCONTROL has developed a list of 10 "tips" for general aviation pilots<sup>41</sup>, which in particular include topics linked to the **competence of flight crews**, such as:

- better flight preparation;
- better awareness and reaction to changing weather;
- better interaction with ATC/ATS;
- ability to immediately re- plan the route, in consequence of an ATC instruction.

Finally, the emergence on the market of Very Light Jets and of civilian Unmanned Aircraft Systems (UAS) in the medium term, may lead to increase of traffic and complexity of operations even at low altitudes and in airspace Classes (i.e. F and G) where ATC is not provided to VFR flights. In such classes non-commercial pilots will be faced with new challenges which have to be taken into account. On the other side, technologies like satellite navigation will contribute to somehow blur the limit between VFR and IFR operations. All these new challenges need to be taken into consideration.

#### 2.3.2.9 Summary of FCL safety analysis

The most significant figures presented in the above paragraphs from 2.3.2.3 to 2.3.2.8 can be summarised in following Table 17, with reference to the EASA Member States:

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<sup>41</sup> <http://www.eurocontrol.int/safety/gallery/content/public/top10%20tips%20for%20GA%20pilots.pdf>

Item	CAT	Helicopters PPL (H) and LPL (H)	Complex motor- powered aircraft*	"non- complex" aeroplanes**	Sailplanes	Balloons
Average number of unauthorised airspace penetrations		100***	300***	1100***	Not estimated	Not estimated
Average number of accidents/yr	Out of scope of present RIA	106	11.1	385	245	15
Average number of fatal accidents/year		15	2	55	31	0
Ratio total accidents over fatal ones		7.1	5.5	7.0	8	N.A.
Victims/ fatal accident		3.0	5.0	1.9	1.3	N.A.
Average number mid-air collision CAT/GA		Not estimated	0.0105	0.0105	Not estimated	Not estimated
Average victims/mid-air collision CAT/GA		Not estimated	82	82	Not estimated	Not estimated
Percent accidents in the "top" categories		Not estimated	80%	76%	Not estimated	Not estimated
Average number of accidents/yr in the "top" categories		Not estimated	8.9	293	Not estimated	Not estimated
Average number of fatal accidents/yr in the "top" categories		Not estimated	1.6	42	Not estimated	Not estimated
<b>Percent of accidents or incidents linked to FCL factors</b>		<b>35%</b>	<b>35%</b>	<b>50%</b>	<b>80%</b>	<b>80%</b>
<b>Average number of unauthorised airspace penetrations linked to FCL</b>		35	105	<b>550</b>	Not estimated	Not estimated
<b>Average number of accidents/yr linked to FCL</b>		<b>37.1</b>	<b>3.1</b>	<b>146.5</b>	<b>196</b>	<b>12</b>
<b>Average number of fatal accidents/yr linked to FCL</b>		<b>5.2</b>	<b>0.6</b>	<b>21</b>	<b>24.5</b>	<b>0</b>
<b>Average number of victims/yr linked to FCL</b>		<b>15.7</b>	<b>3</b>	<b>31.5</b>	<b>31.8</b>	<b>0</b>
<b>Average number of mid air collision/yr, CAT/GA, linked to FCL</b>		Not estimated	<b>0.0037</b>	0.0052	Not estimated	Not estimated
<b>Average number of victims/yr for mid air collisions linked to FCL</b>		Not estimated	<b>0.105</b>	0.15	Not estimated	Not estimated

\* which can be flown e.g. by CPL (A) or PPL (A), but not by LPL (A)

\*\* flown also by LPL (A)

\*\*\* estimation made by the Agency

**Table 17: Summary of FCL safety analysis**

2.3.2.10 Cost of safety events

In order to estimate the "cost of accidents", it is necessary to first establish some basic figures. The main sources for this have been:

- Economic parameter tables directly provided by the USA FAA to EASA<sup>42</sup>;
  - The document titled "Standard Inputs for EUROCONTROL Cost Benefit Analyses" edition 2007<sup>43</sup>.
- From the former the inflation rates applicable in the USA are presented in Table 18 below:

Year	Inflation rate
2000	2.180
2001	2.409
2002	1.750
2003	2.131
2004	2.837
2005	3.025
2006	3.186

**Table 18: Inflation rate in the USA**

Then the **exchange rate (2007) of 1.370 US \$ per 1 €** has been assumed. In the FAA data all the figures were obviously in US \$ and in many cases calculated in past years, so they had to be corrected taking into account the inflation.

For EUROCONTROL the data was in € and edited in 2007, so it has been used as published. The said data has been completed by the Agency, through data available on the web in August 2008, as presented in Table 19 below:

Parameter	USA FAA				EUROCONTROL
	Published	Referred to year	Value in 2007		
	kUS \$		kUS \$	k€	k€
Statistical value of human life					2,300
Cost of major injury					479.8
Cost of minor injury					35.4
Replacement cost of a large CAT aeroplane	28,000	2003	31,263	22,820	
Replacement cost of a “small” helicopter	856.89	2003	956.74	698	
Replacement cost of a “complex” (but not “large”) aircraft	2,022	2003	2,215	1,616	
Replacement cost of a “non complex” aeroplane	256.89	2003	286.83	209	
Replacement cost of a sailplane				50 <sup>44</sup>	
Replacement cost of a balloon			12 <sup>45</sup>	9	
Repair cost of a “small” helicopter (15% of value)				105	
Repair cost of a “complex” (but not “large”) aircraft	85.15	1999	101.23	74	
Repair cost of a “non complex” aeroplane (15%)				31	
Repair cost of a sailplane (15%)				7	
Repair cost of a balloon (15%)				1	
Investigation cost for large CAT aeroplane	449	2002	510	372**	
Accident Investigation cost for GA motorised aircraft	35.1	2002	39.2	29	
Accident Investigation cost for sailplanes or balloons				6*	

\* estimated by Agency

\*\* = 401 k€ investigation cost for a mid-air collision between a large aeroplane and a GA aircraft

**Table 19: Economic parameters to assess the "cost of accidents"**

<sup>42</sup> U:\Process support\RIA\1 Data\FAA\Data\TABLE INDEX.xls

<sup>43</sup> U:\Process support\RIA\1 Data\EuroControl\Standard-values-EUROCONTROL.pdf

<sup>44</sup> Estimated in August 2008 from <http://www.gliderforum.com/thread-view.asp?threadid=2452&posts=5>

<sup>45</sup> Estimated in August 2008 from <http://www.aerostat.com/81-95.html>

The report "US Air Carrier Operations – Calendar year 2003"<sup>46</sup> issued by the National Transport Safety Board (NTSB) of the USA, contains data about the consequences of accidents occurred to commercial operators of large aeroplanes (regulated by FAA "Part-121" in the USA) for the period 1994-2003. This data is summarised in Table 20 below:

Consequences of accidents					
To aircraft	To humans				TOTAL
	Fatal	Serious injuries	Minor injuries	No injuries	
<b>Destroyed</b>	<b>16</b>	1	5	0	22
<b>Substantial damage</b>	2	11	<b>37</b>	<b>160</b>	210
<b>Minor damage</b>	6	278	0	8	41
<b>None</b>	2	<b>159</b>	0	2	163
<b>TOTAL</b>	26	198	42	170	<b>436</b>
<b>Percentage</b>	6%	45%	<b>10%</b>	<b>39%</b>	100%

**Table 20: Consequences of accidents**

From the above data it can be observed that:

- **Aircraft were normally destroyed only in conjunction with a fatal accident;**
- A significant number of injuries occurred with no damage to aircraft: this is the typical case caused by turbulence in flight, when a passenger may suffer serious injuries; however, since such cases are not linked to FCL factors, these accidents can be disregarded in the present RIA;
- **Around 49% of the accidents lead to injuries and substantial damage to aircraft.**

This estimation, although coarsely approximated and applicable to large aeroplanes, will be used in the following Table in order to provide estimations on the order of magnitude. Furthermore, in the case of accidents involving minor injuries it is assumed that the number of injured people will be equal to the number of potential victims had the accident been fatal. Based on these data, assumptions and estimations, the cost of non-fatal accidents can be estimated as in Table 21 below:

Item	Helicopters	Complex aeroplanes PPL (A)	Non complex LPL (A)	Sailplanes	Balloons	TOTAL COST K€
Average number of accidents/yr linked to FCL	37.1	3.1	146,5	196	12	
Average number of accidents/yr linked to FCL with minor injuries & subst. damage (49%)	18.2	1.5	73	96	12*	
Number of minor injuries/accident	3	5	1.5	1.3	0	
Minor injuries/year	54.5	7.5	109	125	0	
Cost of injuries (k€)	1,929	265	3,858	4,425	0	<b>10,477</b>
Cost of substantial damage (k€)	2,589	111	2,263	672	6	<b>5,641</b>
Cost of destroyed balloons (51%)					54	<b>54</b>
Cost of investigation (k€)	528	43	2,117	576	72	<b>3,336</b>
<b>TOTAL COST (k€)</b>	<b>5,046</b>	<b>419</b>	<b>8,238</b>	<b>5,673</b>	<b>132</b>	<b>19,508</b>

\* 100% in case of balloons

**Table 21: Cost of non-fatal accidents/year**

The above data does not consider other costs which could emerge as a consequence of an accident, such as used fire extinguishing agents, disruption of operations at aerodromes, damage to third party's

<sup>46</sup> <http://amelia.db.erau.edu/reports/ntsb/arg/ARC07-01.pdf>

property on the ground, search and rescue and so on. **Although the above estimations only offer an order of magnitude, they are then considered to be largely underestimated, and therefore suitable to avoid over-optimistic conclusions from the present RIA.**

Along the same lines, the cost of fatal accidents involving one single general aviation aircraft can be estimated as in Table 22 below:

Item	Helicopters	Complex motor powered aeroplanes	Non complex aeroplanes	Sailplanes	Balloons	TOTAL COST
						K€
Average number of fatal accidents/yr linked to FCL	5.2	0.6	21	24,5	0	
Victims/ fatal accident	3	5	1.9	1.3	0	
Average number of victims/yr linked to FCL	15.7	3	31.5	31,8	0	
Cost of fatalities(k€)	36,110	6,900	72,450	73,140	0	<b>188,600</b>
Cost of destroyed aircraft (k€)	3,629	970	4,389	1,225	0	<b>10,213</b>
Cost of investigation (k€)	151	17	609	147	0	<b>924</b>
<b>TOTAL COST (k€)</b>	<b>39,890</b>	<b>7,887</b>	<b>77,448</b>	<b>74,512</b>	<b>0</b>	<b>199,737</b>

**Table 22: Cost of fatal accidents**

Similarly, the cost of fatal mid-air collisions involving one large CAT aeroplane and one general aviation aircraft can be estimated in Table 23 below:

Item	Helicopters	Complex motor-powered aeroplanes PPL (A)	Non-complex aeroplanes LPL (A)	Sailplanes	Balloons	TOTAL COST
						K€
Average number of unauthorised airspace penetrations/yr linked to FCL	35	105	550	N/A	N/A	
Average number of mid-air collisions/yr, CAT vs GA, linked to FCL	0	0.0037	0.0052	0	0	
Victims/mid-air collision	0	82	82	0	0	
Average number of victims/yr linked to FCL	0	0.105	0.15	0	0	
Cost of fatalities(k€)	0	241	345	0	0	<b>586</b>
Cost of destroyed large aeroplane (k€)	0	84	119	0	0	<b>203</b>
Cost of destroyed GA aircraft (k€)	0	6	1	0	0	<b>7</b>
Cost of investigation (k€)*	0	1.5	2	0	0	<b>3.5</b>
<b>TOTAL COST (k€)</b>	<b>0</b>	<b>332.5</b>	<b>467</b>	<b>0</b>	<b>0</b>	<b>799.5</b>

**Table 23: Cost of fatal mid-air collisions/year between a large CAT aeroplane and a GA aircraft linked to FCL causal factors**

\* =401 k€ investigation cost for a mid-air collision between a large aeroplane and a GA aircraft

### 2.3.2.11 Conclusions on the FCL safety analysis

In the above paragraphs the number of yearly accidents and victims linked to FCL factors (excluding ATPL and CPL(A) which are out of scope) has been estimated. The figures were based on data collected so far. No extrapolation has been attempted to cater for the increase of traffic: this means that the estimations are very conservative. More than 700 **accidents per year** can be expected in the EASA Member States for helicopters, "complex" (but not "large") aeroplanes, "non-complex" aeroplanes, sailplanes and balloons. At least **394 of them can be linked to FCL**.

**Around 51 fatal accidents per year, involving a single aircraft, can be linked to FCL factors, leading to a total number of 82 victims/year.** Also the probability of a mid-air collision between a relatively small general aviation aircraft and a large CAT aeroplane is sizable.

**It can be estimated that the cost of aviation accidents due, directly or indirectly, to FCL factors in the EU 27 + 4, could total around 19.5 M€/year for non-fatal accidents, 199.7 M€ for the fatal ones involving a single aircraft and 0.8 M€/year for mid-air collisions. The total is 220 M€/year.**

**The above figure is largely underestimated and therefore very conservative** for the purpose of the present RIA. Nevertheless, it will be used in the absence of more complete and accurate data.

Furthermore, in the timeframe envisaged by SESAR (i.e. until 2020) air traffic is expected to further increase, while the trajectories of large CAT aeroplanes will be less constrained and the airspace structures more complex. **The probability that a non-commercial pilot, under VFR, could infringe airspace limits and penetrate in volumes of airspace (Classes A, B, C or D) without prior ATC clearance, needs to be controlled,** in order to reduce the risk of collision with a commercial airframe, which in turn could be a catastrophic event.

But the air traffic and airspace complexity will not be limited to controlled airspace (typically said ICAO airspace Classes A, B, C or D), since **Very Light Jets (VLJ) will increasingly operate also in airspace Classes F and G in order to reach minor aerodromes, while in the same airspace Classes even civilian UAS might appear.** All this demands better training, checking and proficiency for non-commercial pilots.

### 2.3.3 Issues related to the LPL

The notion of "leisure" (or "recreational") pilot is not contained in ICAO Annex 1, since it is not significantly relevant for world-wide international aviation.

In the EU the situation is different, because of the increasing demand for recreational aviation using very light airframes, the Schengen Treaty on free movement of people, and the political objectives of the Union aiming at uniform protection of and uniform exercise of privileges for all citizens across the 27 EU Member States. And in fact, as recalled in paragraph 1.1 above, the legislator has included in the Basic Regulation provisions for the creation of a new "Leisure Pilot Licence" (LPL) aiming at offering to more citizens the possibility of flying, for recreational purposes, at an affordable price. In particular, this licence will grant to holders privileges to fly non-complex motorised aircraft up to 2000 kg MTOM in non-commercial operations. Therefore, the potential **option "do nothing" (i.e. no new licence created) is simply not feasible, since the legislator, after appropriate debate, has already concluded and adopted it.**

The Agency, on the basis of said Basic Regulation and in the absence of specific ICAO requirements for this type of licence, has then to develop detailed requirements for it. In doing so, it will be necessary to comply with the essential requirements (ERs) for pilot licensing, as adopted by the legislator<sup>47</sup>.

On this matter the Agency has already consulted stakeholders through A-NPA 14/2006 mentioned in paragraph 2.2.2 above, which included Question N. 6 on pilots for General Aviation, reproduced herein:

<sup>47</sup> Annex III to Basic regulation (EC) 216/2008: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2008:079:0001:0049:EN:PDF>



**Question 6**

*The Agency is interested in knowing the opinion of stakeholders on what they think should be the conditions and privileges of a European Private Pilot Licence<sup>48</sup>, with particular emphasis on:*

- a) The type of aircraft it would allow flying and in particular whether an upper weight limit would be appropriate? If so, what it could be?*
- b) The ratings that could be attached to such a licence;*
- c) The way medical assessments could be done and the possible role of general practitioners.*

The received replies have been analysed in the related Comment response Document (CRD)<sup>49</sup>. This led to the following conclusions:

- In general, the vast majority of the stakeholders highly supported the envisaged new concept for a European "simple" pilot licence, although a minority did not support the creation of a European Pilot Licence as described in the A-NPA. Some of them suggested to enshrine in the EU legislation the JAR-FCL for powered aircraft and, for the other categories, to stick to an ICAO based licence;
- The vast majority also expressed support for the proposed medical assessment, which can be carried out by a general medical practitioner with some kind of additional self declaration by the pilot.
- The analysis of replies to **Question 6(a)** showed that:
  - The slight majority of stakeholders considered that the future European (leisure) pilot licence should be introduced for aircraft with a MTOM up to 5700 kg. However, a considerable number of stakeholders proposed to develop such a licence for non-complex aircraft only up to 2000 kg MTOM. Some of these stakeholders recommended a further subdivision for aircraft up to 750kg or 1000 kg MTOM. Most of the stakeholders are in favour of a licence for the following aircraft categories:
    - Powered aircraft (aeroplanes);
    - Balloons;
    - Sailplanes.
  - Only very few stakeholders saw a need for such a licence for helicopter pilots.
- The analysis of replies to **Question 6(b)** showed that:
  - The vast majority of stakeholders considered that all the existing types of ratings should be maintained for the future European LPL. The majority of stakeholders mentioned ratings for instrument flying, instructing, aerobatic, night-flying and towing. Some other ratings were proposed.
  - However, a significant minority proposed to create a basic licence and additional ratings for the different aircraft categories.
  - 2 stakeholders disagreed with the concept of ratings at all.
- The analysis of replies to **Question 6(c)** showed that:
  - The majority of stakeholders (a major part were identical responses – see 6(a/b/c) general comments) consider that a medical assessment carried out by a general practitioner accompanied by some kind of self-declaration would be the right solution for this new European licence. Many of them mentioned that an approved standard of aviation medicine knowledge must be ensured.
  - A notable number of stakeholders are in line with a process based mainly on self-declaration of the pilot. Many of them considered in addition to that (or especially for the initial medical check) an assessment by the general practitioner. Amongst these only a few recommended an initial check by an AME or AMC with a subsequent procedure involving general practitioners based on self declaration.
  - Finally, only a very small number of stakeholders expressed their disagreement with the proposal to introduce a system based on the general practitioner. They stated that for this licence the existing medical system of AMEs and AMCs should be used.

However, the legislator has left open the option on whether existing ICAO SARPs, although not specifically addressed to LPL, would have to be followed. The Agency considers that only creating the new

<sup>48</sup> later named as "Leisure Pilot Licence"

<sup>49</sup> [http://www.easa.europa.eu/ws\\_prod/r/doc/CRD-14-2006%20Inventory%20of%20Answers.pdf](http://www.easa.europa.eu/ws_prod/r/doc/CRD-14-2006%20Inventory%20of%20Answers.pdf)

LPL, but in **full compliance with the ICAO SARPs applicable to more demanding flying activities, will not solve the problems** (i.e. open the possibility to fly for recreational purposes to more people, and in particular young people) that were identified as the basis for the legislator's decision to create a new licence. So, even this theoretical option is not feasible.

European private pilots had for a long time complained that the requirements of JAR-FCL (including those on medical fitness) for the PPL, were too stringent for people that intended to fly solely for recreational purposes. Moreover, in many cases the JAR-FCL requirements went beyond the minimum world-wide standards established by ICAO.

The same conclusion has been confirmed by the Agency after the consultation on A-NPA No 14/2006, in which the Agency asked the opinion of stakeholders on a future European recreational licence. Therefore, the only available solution is indeed to create a new Leisure Pilot Licence (LPL) based on the acquired experience, matured from the present existing national models (e.g. RPL in the NL and NPPL in UK), without using ICAO SARPs, which in any case address other more demanding types of pilot licences. **Only the creation of the new LPL reaches the objectives established by the legislator, and addresses the concerns of stakeholders.**

In conclusion, there is **no purpose of discussing any longer "whether"** the LPL should be introduced.

Of course, its creation shall happen while maintaining adequate standards of safety. Therefore, **a number of issues have to be considered** before adopting the necessary Implementing Rules (IRs) and Acceptable Means of Compliance (AMCs) **on "how"** this LPL could be implemented. The major issues identified by the Agency<sup>50</sup> with the help of the MDM.032 sub-group of external experts, and which deserve further consideration in this respect, are:

- **minimum age** required to hold a LPL, bearing in mind that for the aeroplane or helicopter licences ICAO recommended 17 years<sup>51</sup>, while some EU States already allowed a minimum age of 16 years;
- possibility of an "entry level" or **Basic LPL with reduced training** (e.g. 20h instead of 30h flight training for the full LPL(A)<sup>52</sup>) **and reduced privileges**<sup>53</sup> (e.g. only local flights within 50 KM distance of the aerodrome of departure with no intermediate landings);
- **concept of the "Full" LPL (A)** the requirements for which will still be less stringent than the present ICAO requirements for PPL (e.g. 30h instead of 40h flight training hours for the full LPL(A)<sup>54</sup>);
- **concept of the "Full LPL" (H)**<sup>55</sup> which might entail some slight deviations from the ICAO requirements for PPL(H), such as no type rating but only extension to another type<sup>56</sup>;
- **concept of LPL(S)**<sup>57</sup>, whose requirements (e.g. number of hours and take-offs) could be higher than in ICAO Annex 1;
- **concept of the LPL(B)**<sup>58</sup> for balloons, which, due to the development of such an activity and due to the "lesson learned" (e.g. errors during filling or during the approach) could be more detailed or slightly higher than ICAO requirements;
- **Validity of the LPL**<sup>59</sup> with potential significant economic impact, not necessarily justified for this type of licences;
- **Frequency of the proficiency checks**<sup>60</sup> which has also to be defined balancing the safety requirements with a burden proportionate to the complexity of involved operations and connected social risks, which, in the case of private flying, not only by LPL but also by PPL, SPL or BPL are definitely less relevant than public commercial air transport or paying passengers by large aeroplanes;
- Procedures for potential **extension of the LPL (A), (H), (S) and (B) privileges** to other types or classes of aircraft in their respective category.

All the listed issues are discussed in the following paragraphs of the present RIA.

<sup>50</sup> NPA 2008-17b: Subpart B Leisure Pilot Licence LPL

<sup>51</sup> NPA 2008-17b: Subpart B Section 1 FCL.100

<sup>52</sup> NPA 2008-17b Subpart B FCL.110.A

<sup>53</sup> NPA 2008-17b Subpart B Section 2 Specific requirements for the Basic LPL

<sup>54</sup> NPA 2008-17b Subpart B FCL.110.A

<sup>55</sup> NPA 2008-17b Subpart B Section 4

<sup>56</sup> FCL.135BA/H

<sup>57</sup> NPA 2008-17b Subpart B Section 5

<sup>58</sup> NPA 2008-17b Subpart B Section 6

<sup>59</sup> NPA 2008-17b Subpart B FCL.140.A / FCL.140.H / FCL.140.S / FCL.140.B

<sup>60</sup> NPA 2008-17b Subpart B FCL.140.A (a)(2) / FCL.140.H (a)(2) / FCL.140.S (a)(2) & (b)(2) / FCL.140.B (a)(2)

### 2.3.4 Issues related to pilots licences covered by ICAO Annex 1

ICAO Annex 1 includes standards and recommended practices (SARPs) applicable to a number of categories of pilot licences. Each pilot licence is associated with an aircraft category, medical requirements and privileges, including in some cases commercial privileges. The licences contemplated by ICAO Annex 1 are summarised in Table 24 below:

Aircraft category	Pilot Licence		Medical requirements	Commercial privileges
Aeroplanes	ATPL (A)	Airline Transport Pilot Licence (aeroplane)	Class 1	Granted
	CPL (A)	Commercial Pilot Licence (aeroplane)	Class 1	Granted
	MCPL (A)	Multi-Crew Pilot Licence (aeroplane)	Class 1	Granted
	PPL(A)	Private Pilot Licence (aeroplane)	Class 2	Excluded (par. 2.3.2.1 in Annex 1)
Airships	CPL (As)	Commercial Pilot Licence (airship)	Class 1	Granted
	PPL(As)	Private Pilot Licence (airship)	Class 2	Excluded (par. 2.3.2.1 in Annex 1)
Helicopters	ATPL (H)	Airline Transport Pilot Licence (helicopter)	Class 1	Granted
	CPL (H)	Commercial Pilot Licence (helicopter)	Class 1	Granted
	PPL(H)	Private Pilot Licence (helicopter)	Class 2	Excluded (par. 2.3.2.1 in Annex 1)
Powered lift	ATPL (PL)	Airline Transport Pilot Licence (powered lift)	Class 1	Granted
	CPL (PL)	Commercial Pilot Licence (powered lift)	Class 1	Granted
	PPL(PL)	Private Pilot Licence (powered lift)	Class 2	Excluded (par. 2.3.2.1 in Annex 1)
Sailplanes	SPL	Sailplane Pilot Licence	Class 2	<b>NOT</b> excluded (par. 2.9.2.1 in Annex 1)
Balloons	BPL	Balloon Pilot Licence	Class 2	<b>NOT</b> excluded (par. 2.10.2.1 in Annex 1)

**Table 24: Types of pilot licences in ICAO Annex 1**

Pilots wishing to provide instruction in flights to student pilots are required by standard 2.1.8.1 to obtain a proper authorisation from their competent authority.

Pilots of sailplanes or balloons, remaining compliant with ICAO SARPs, can provide commercial services, including, when holding the proper authorisation, remunerated instruction in flight.

In paragraph 2.3.1 above it has been estimated that today, in the EU 27 + 4, there are more than nine thousand pilots of balloons and more than seventy thousand for sailplanes. Therefore thousands of European citizens may be impacted by the rules applicable to these activities.

Based on the proposals of the rulemaking group, the Agency came to the conclusion that there is no need to differentiate between PPL and LPL (e.g. in terms of training experience/recency/etc.) in the case of balloons and sailplanes, in line with the ICAO philosophy of only one type of licence for them. It has only to be noted that BPL and SPL might have to fulfil some further requirements in order to exercise commercial privileges (see FCL.205.S or FCL.205.B), as well as the privilege for instructors to receive remuneration for instruction flights (FCL.205.S(c)). However, these privileges are so limited that they might not require a "commercial" pilot licence (CPL).

In ICAO Annex 1 there are only two types of licences for airship pilots. It is therefore not so obvious that all the possible different types of licences (i.e. LPL, PPL and CPL) are necessary and therefore the related issues need to be analysed, including the instrument rating which applies to airships.

### 2.3.5 Ratings, Instructors and Examiners

Pilots can, of course, hold a number of additional ratings. During the discussions in the group of experts for task FCL.001, different potential ratings were considered, such as aerobatics, sailplane and banner towing, night rating and mountain rating. The need for such additional ratings requires attention in the present RIA.

In addition, pilots wishing to provide instruction in flights to student pilots are required by ICAO standard 2.1.8.1 in Annex 1, to obtain a proper authorisation from their competent authority.

Pilot of sailplanes (SPL) or balloons (BPL), remaining compliant with ICAO SARPs, can provide commercial services, including, when holding the proper authorisation, remunerated instruction in flight. In paragraph 2.3.1 above it has been estimated that today, in the EU 27 + 4, there are more than nine thousand pilots of balloons and more than seventy thousand for sailplanes. Therefore, thousands of European citizens may be impacted by the rules applicable to these activities.

The Agency has proposed as well to extend the privileges of a PPL holder to possibly "receive remuneration for the provision of flight instruction for the LPL or the PPL"<sup>61</sup>. This proposal was in line with the findings by the FCL.001 group in order to provide a solution for the shortage of instructors for general aviation in Europe. In fact, the proposed rule would create a legitimate source of income for PPL/SPL/BPL holders.

In turn, this suggests the need to alleviate some of the requirements for the instructors (e.g. level of theoretical knowledge). At the same time, also the issue of revalidating or maintaining the instructor certificate has to be analysed, since open to different alternatives.

Furthermore, a new system is also proposed for examiners in terms of responsibilities, privileges, role of the authorities and oversight. Also this category of pilots therefore deserves attention in the present RIA.

### 2.3.6 Medical issues

All pilots need to be physically and mentally fit, and their fitness needs to be periodically verified against a set of identified requirements, by properly qualified physicians and according to defined procedures. Therefore many possibilities exist in terms of:

- Medical requirements for each category of pilots (e.g. how stringent should be the requirements for the LPL, considering the very limited social risk?);
- Medical professionals authorised to issue medical certificates to pilots;
- Validity of said certificates;
- Validity of certificates for Aeromedical examiners.

In ICAO Annex 1 all commercial pilots of motorised aircraft (i.e. aeroplanes, helicopters, airships and powered lift, but not sailplanes and balloons) are required to hold a Class 1 medical certificate. The JAA in the past and EASA today have proposed to maintain this principle. However, the specific requirements in JAR-FCL 3 went significantly beyond the minimum standards defined by ICAO and applicable world wide. In its NPA on FCL, the Agency has proposed to maintain such more stringent requirements, already implemented in the vast majority of the cases by the competent authorities.

Class 2 requirements in ICAO Annex 1 are applicable to private pilots of motorised aircraft as well as to pilots of sailplanes and balloons. Here again the Class 2 requirements contained in JAR-FCL 3 went significantly beyond the minimum standards defined by ICAO and applicable world wide. In this case however, the Agency is proposing to relax the JAR-FCL 3 requirements, while minimising the additional requirements in respect of ICAO Annex 1.

Furthermore, medical requirements specifically addressed to LPL have to be identified. They could refer to one of the classes already defined by either ICAO or JAR-FCL 3, or be based on a new set of less stringent requirements, developed for this category of purely recreational pilots of non-complex machines.

Class 2 medical certificates have always been issued by an Aeromedical Examiner (AME) on the basis of the ICAO and JAR-FCL provisions. The Agency is not proposing any changes to this situation in the draft implementing rules ("Part-FCL"). However, under JAR-FCL 3, the decision on fitness in contentious cases

<sup>61</sup> NPA 2008-17b different subparts: for example FCL.205.A(b)

for Class 1 and Class 2 certificates was taken by the medical specialist in the Authority. This is no longer considered appropriate for Class 2 medical certificates, where the final decision, including the placement of limitations, is proposed to be made by the AME of the pilot.

On the contrary, initial Class 1 certificates were issued by the Authority according to JAR-FCL 3 requirements. The Agency proposes this procedure to be changed. From the pilot's point of view nothing will change, since the applicant will have to undergo his/her examination for the initial Class 1 at an Aeromedical centre (AeMC) as before. From his/her point of view nothing changes with respect to the JAR-FCL 3 requirements except that the medical certificate may be issued in a shorter period of time.

Finally, also the periods of validity of the certificates for pilots as well as for Aeromedical Examiners were considered. Also in these cases, several possibilities exist, as it can be seen from the information provided in Table 25, below, which details the requirements presently included in ICAO Annex 1:

Licence	Age	Period of validity
ATPL (A), ATPL (H), ATPL (PL)	< 40	12 months (= 1 year)
CPL (A), CPL (As), CPL (H), CPL (PL)	< 40	12 months (= 1 year)
All ATPL and CPL engaged in single-crew CAT passenger operations	> 40	6 months
MCPL (A)	< 60	12 months (= 1 year)
All ATPL, CPL and MCPL (A) engaged in CAT operations	> 60	6 months
PPL(A), PPL(As), PPL(H), PPL(PL)	< 40	60 months (= 5 years)
SPL	< 40	60 months (= 5 years)
BPL	< 40	60 months (= 5 years)
All PPL, SPL and BPL	> 40	24 months (= 2 years)
All PPL, SPL and BPL	> 50	12 months (= 1 year): this is not a standard, but a Recommendation in 1.2.5.2.5
<b>LPL</b>	<b>NOT COVERED by ICAO ANNEX 1</b>	
AME	Not applicable	Undefined. Standard 1.2.4.4.1 requires refresher training but leaves procedures to be defined by States

**Table 25: Validity of medical certificates in ICAO Annex 1**

All issues analysed in this paragraph will be further discussed in this RIA.

### 2.3.7 Conclusions and justification for EU intervention

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

- Further improve the safety in relation to FCL matters for any type of air operations (i.e. beyond air transport) and any type of aircraft and in face of the foreseen developments;
- Reasonably improve the safety of all general aviation, through rules proportionate to the social risk involved and suitable to allow economic sustainability by the entities concerned;
- Reduce the cost deriving from FCL related accidents within the EU 27 + 4, which can be estimated in the order of 302.5 M€/year;
- Extend the safety regulatory framework for EU 27 + 4, beyond the scope of ICAO Annex 1 (e.g. introduce the LPL with clear legal certainty and uniform and proportionate rules, in compliance with the principles of "free movement" enshrined in the EU Treaty<sup>62</sup>);
- Base the regulatory framework on a solid legal basis as provided by Regulation EC No 216/2008;
- Comply with the tasks assigned by the legislator.

<sup>62</sup> Article 3 of the Treaty of the European Union: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2008:115:0013:0045:EN:PDF>

## **2.4 Objectives and indicators**

### *2.4.1 Taxonomy of objectives*

The possible impacts of any new rules are 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, due to their very broad nature (e.g. “freedom of movement inside the EU”), could be influenced very significantly by other policies. Therefore, it is not proper to consider them when assessing the impact of the proposed EASA implementing rules for FCL.

The main use of the “general” objectives is only to support the definition of the “specific” objectives for the proposed EASA rules on FCL. These specific objectives will be used in the present RIA to compare the various options, while the result indicators correlated to them and already identified herein, could be used in the future for mid term reviews. Finally, the operational indicators in paragraph 2.4.5 are not used for the present RIA. Nevertheless, they could be used by the Commission to continuously benchmark the progress of the proposed initiative.

The intended promulgation of the EASA implementing rules for FCL is addressing the problems that are associated with the current lack of common rules for some pilot categories or pilot activities. Common rules in turn provide a solid legal basis for standardisation in safety oversight.

The identified objectives can be classified according to the three levels normally used for impact assessment by the services of the European Commission, such as:

- The **general objectives**, which represent the overall policy goals;
- The **specific objectives**, which are the more immediate objectives of the planned rulemaking initiative contributing to achieve the general 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, although the latter do not give an indication on the impact of the new rules on the entire society.

Objectives and indicators for the newly proposed EASA rules for Flight Crew Licensing (FCL) are presented in following paragraphs 2.4.2 to 2.4.5.

### *2.4.2 General objectives*

The general societal objectives of the European Commission are described in the Commission’s work programme and the Annual Policy Strategy<sup>63</sup>, in turn broadly based on the “Lisbon strategy”. The strategic objectives defined by the Commission at the start of its mandate – promoting prosperity, solidarity, freedom, protection of the citizens and a stronger Europe in the world – remain the core direction for the Commission’s work even in 2009.

More in particular, the following nine general objectives can be extracted from said Annual Policy Strategy:

1. develop *high standards* in areas such as *safety* and protection of the environment;
2. protect public *health*;
3. promote active labour market policies in place which provide for “flexicurity” - giving people the ability to find a job, everywhere in the EU, based on *uniform regulatory frameworks*;
4. sustain free movement of people, and in particular *cross-border mobility of young people*;
5. or even *when they travel to countries outside the EU*;
6. more systematically and in an integrated way, monitor key *service markets*;
7. deliver policies of direct interest for citizens and in particular simplify their life by *reducing administrative burdens*;
8. raise the Union’s external profile, linked to the Treaty of Lisbon which should significantly strengthen the EU’s commitment to effective multilateralism and in this context help to *shape global regulations*, by interaction with key actors for international regulation (e.g. ICAO) in order to promote convergence of standards and equivalence of rules;
9. develop closer political and economic ties with partners around the world and in particular further *strengthen relations with the United States* and other key industrialised partners.

<sup>63</sup> COM(2008) 72 of 13 February 2008: Annual Policy Strategy for 2009.

### 2.4.3 Specific objectives

The specific objectives are related to specific civil aviation objectives, which are on one side connected to the general objectives listed in the paragraph above and on the other linked to the EASA Basic Regulation. The identified 19 specific objectives, which will be used in this RIA to compare the various options, can be summarised as in Table 26 below:

General objectives		Related specific objectives	
N.	Content	N.	Content
1	high standards of safety	1	Adequate validity of LPL
		2	Proportionate proficiency checks for non commercial pilots
		3	Skill test for instructors
		4	Proficiency checks for instructors
2	protect health of citizens	5	Proportionate medical rules
3	labour mobility	6	Adequate number of categories for flight instructors
		7	Common requirements for examiners
		8	Instrument rating for helicopters
4	cross-border mobility of young people	9	Introduce LPL
5	facilitation of travel outside the EU	10	Ensure compliance with ICAO standards
		11	Sufficient language proficiency
6	develop internal market for services	12	Ensure compliance with other EU laws or rules
		13	Extension of LPL privileges
		14	Privileges for PPL, SPL, BPL and airship pilots
7	Reduce administrative burden	15	Number of pilot licences
		16	Basic "entry" level for LPL (A) and (H)
		17	Limit additional pilot ratings
8	shaping global regulations	18	Influence development of ICAO standards
9	close ties with the United States	19	Harmonise EASA and FAA rules

**Table 26: Specific objectives linked to the Annual Policy Strategy of the Commission**

### 2.4.4 Operational objectives

Obviously, the expected objectives of the EASA implementing rules for FCL are closely linked to the problems analysed in paragraph 2.3. The policy chosen is meant to remedy or mitigate the existing problems and to lead to improvements. There is also a strong link to the impacts that describe the expected effects of the intervention which can be 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 adoption of common EU rules for FCL. 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:

- Common rules for FCL throughout the Community have been developed in accordance with the new BR and proportionate to the complexity of the operation/aircraft;
- Related AMCs are available;
- Continuous monitoring of safety carried out by EASA for all types of pilot licences is ensured;
- Standardisation in the FCL domain is ensured.

### 2.4.5 Indicators

Three different levels of indicators can respectively be identified:

- *Overall objective* 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 EASA common rules for FCL;
- *Specific objective* indicators: i.e. immediate objectives of the proposed policy that need to be reached in order to achieve the general goals. They are expressed in effects directly correlated to the proposed measures, although they could also be influenced by other policies (e.g. tax regime on general aviation, which can well influence the development of such a sector);

- *Operational objective* indicators: i.e. the precise actions or direct effects which the policy proposed by the Agency is expected to produce on FCL rules. The achievement is under direct control of the Commission and can be easily verified.

Indicators allow monitoring if, and in how much, the objectives are achieved in the medium term. Defining them in advance is important, to allow periodic assessment of the effects produced. The indicators on the level of specific and general objectives are closely related to the identified problems and the expected impacts, while the operational objectives result in simpler and more observable indicators related to the fulfilment of actions by EASA. The outcome indicators, linked to the general objectives and proposed by the Agency are presented in following Table 27:

Identified Problems	General Objectives	Overall Indicators
Need to improve safety of non-commercial pilots	high standards of safety	Absolute number of accidents for general aviation in EU 27 + 4 decreasing by 1% per year until 2020
Common and proportionate medical requirements for all categories of pilots	health of citizens	Increased number of general aviation pilots from 2008 to 2015
Proportionate rules for FCL, where possible simpler than for commercial air transport in order to sustain diversified development of aviation	labour mobility	Increased number of flight instructors and examiners working in a country different from that of origin from 2008 to 2015
	cross-border mobility of young people	Intra EU flights by PPL and LPL per year
	facilitation of travel outside the EU	Number of pilots licensed in the EU and working in the rest of the world
	internal market for services	Number of G.A. aircraft registered in the EASA Member States per year
	reduced administrative burden	Rules perceived as proportionate by stakeholders
Compliance with ICAO standards and global harmonisation	shaping global regulations	Influence evolution of the ICAO standards for FCL
Lack of proportionate and common rules for general aviation	close ties with the United States	Harmonisation with FAA rules

**Table 27: 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 28 below:

Identified Problems	Specific Objectives	Specific Indicators
Need to improve safety of non-commercial pilots	Adequate validity of LPL	Number of yearly (and seasonally) accidents/incidents related inter alia to LPL factors
	Proportionate proficiency checks for non commercial pilots	Number of failed proficiency checks for LPL, SPL, BPL and PPL
	Skill test for instructors	Number of flight instructors
	Proficiency checks for instructors	Number of failed proficiency checks for flight instructors
Common and proportionate medical requirements for all categories of pilots	Proportionate medical rules	Number of LPL revoked for medical reasons Number of AMEs Number of accident/incidents due to medical reasons



Proportionate rules for FCL, where possible simpler than for commercial air transport in order to sustain diversified development of aviation	Adequate number of categories for flight instructors	Number of instructors for LPL and mountain rating
	Common requirements for examiners	Number of examiners
	Instrument rating for helicopters	Number of helicopter pilots holding instrument rating
	introduce LPL	Number of LPL
Compliance with ICAO standards and global harmonisation	Ensure compliance with ICAO standards	Common rules compliant as much as possible with ICAO Annex 1
	Sufficient language proficiency	Number of failed reassessments of language proficiency
	Influence development of ICAO standards	Convergence of future amendments of Annex 1 with EU common rules on FCL
	Harmonise EASA and FAA rules	Common rules harmonised with FAA provisions
Lack of proportionate and common rules for general aviation	Compliance with other EU regulations	Compliance of implementing rules with EASA Basic Regulation
	Extension of LPL privileges	Number of hours flown by LPL
	Privileges for PPL, SPL, BPL and airship pilots	Number of PPL, SPL; BPL providing remunerated instruction in flight
	Number of pilot licences	Number of "Full" LPL
	Basic "entry" level for LPL (A) and (H)	Number of basic LPL (A) and (H)
	Limit additional pilot ratings	Number of ratings for aerobatics, towing and mountain flying

**Table 28: 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 29:

Operational Objectives	Operational Indicators
common rules for FCL throughout the Community	Publish NPA on implementing rules for FCL
	Publish related CRD
	Agency's Opinion delivered to Commission.
	Rules adopted by Commission.
availability of related AMCs	Publish AMC for FCL
continuous monitoring of safety carried out by EASA for all types of air operations	Regular publication of annual safety analysis, containing information on FCL causal factors
	Regular publication of annual safety analysis, containing information on safety of non-commercial operations of complex-motor-powered aircraft
	Regular publication of annual safety analysis, containing information on safety of non-commercial operations of non-complex aircraft
standardisation in the FCL domain	Designate auditors able to participate to standardisation inspections in the FCL domain
	Regularly carry out standardisation inspections in the FCL domain

**Table 29: Identified problems, operational objectives and output indicators**

## **2.5 Options available**

Normally the specific objectives identified in paragraph 2.4.3 could be pursued through a number of alternative options. In few cases, however, there is no real choice, as highlighted in Table 30 below:

N.	Specific objective	Reason for not existence of alternative options
1	Adequate validity of LPL	Alternative options can exist
2	Proportionate proficiency checks for non commercial pilots	Alternative options can exist
3	Skill test for instructors	Alternative options can exist
4	Proficiency checks for instructors	Alternative options can exist
5	Proportionate medical rules	Alternative options can exist
6	Adequate number of categories for flight instructors	Alternative options can exist
7	Common requirements for examiners	Alternative options can exist
8	Instrument rating for helicopters	Alternative options can exist
9	Introduce LPL	LPL has been introduced by the legislator through the Basic Regulation. Therefore, no alternatives exist on "whether" LPL has to be introduced. However, many details are open to different alternatives; in respect of the "how" the LPL can be introduced.
10	Ensure compliance with ICAO standards	Maximum compatibility will be pursued
11	Sufficient language proficiency	Alternative options can exist
12	Compliance with EU regulations	No alternatives exist, but to comply
13	LPL privileges	Alternative options can exist
14	Privileges for PPL, SPL, BPL and airship pilots	Alternative options can exist
15	Number of pilot licences	Alternative options can exist
16	Basic "entry" level for LPL (A) and (H)	Alternative options can exist
17	Limit additional pilot ratings	Alternative options can exist
18	Influence development of ICAO standards	No concrete alternative option identified
19	Harmonise EASA and FAA rules	Maximum compatibility will be pursued

**Table 30: Specific objectives for which alternatives exist or not**

For 15 of the identified specific objectives alternative solutions could be envisaged. Furthermore, some of them (e.g. "how" to introduce LPL or what we mean by "proportionate medical rules") lead to the need to analyse a number of different issues (e.g. minimum age; privileges, validity of certificates, etc.) for which alternatives can be envisaged. In order to keep the present RIA manageable, the Agency has, however, preliminarily screened the issues for which a "full" RIA is necessary (i.e. following the methodology in paragraph 2.1.2 above) from those for which a more superficial assessment will suffice (according to the principle of "proportionate" RIA). In the former group, 8 major issues have been identified and their impact will consequently be analysed, in paragraphs 2.6 to 2.13. All the remaining less relevant issues will be discussed in paragraph 2.14 below.

All the issues (major and minor) have been grouped with reference to:

- "how" to implement the LPL;
- Issues for other pilot licences;
- Issues for instructors and examiners;
- Medical issues.

The options, which have been identified within each of the four groups listed immediately above, are presented respectively in Tables 31, 32, 33 and 34 below:

N.	Specific objective	Alternative options		Full RIA necessary	
		N.	Description	YES/NO	Par.
16	Basic "entry" level for LPL (A) and (H)	16A	Do nothing (no Basic LPL)	YES	2.6
		16B	Same privileges/less training than "Full" LPL		
		16C	Less training/less privileges		
13	Extension of the privileges to other types or classes for LPL (A), (S) and (B)	13A	Type and class ratings always required, as in ICAO for PPL	YES	2.7
		13B	Automatic extension to all aircraft in the category (e.g. to all aerostats of any class)		
		13C	Controlled extension (i.e. automatic only to other types in the same class of the category)		
9.1	"how" to introduce LPL (minimum age)	9.1A	17 years like for PPL in ICAO	NO	2.14.1.1
		9.1B	16 years like in some MS		
9.2	"how" to introduce LPL (Full LPL (A))	9.2A	Same requirements as for PPL in ICAO	NO	2.14.1.2
		9.2B	More stringent requirements as than in ICAO		
		9.2C	Develop specific requirements, taking ICAO as basis		
9.3	"how" to introduce LPL (Full LPL (H))	9.3A	Same requirements as for PPL in ICAO	NO	2.14.1.3
		9.3B	More stringent requirements as than in ICAO		
		9.3C	Develop specific requirements, taking ICAO as basis		
9.4	"how" to introduce LPL (LPL (S))	9.4A	Less stringent requirements than in ICAO	NO	2.14.1.4
		9.4B	Same requirements as for Sailplane Pilot Licence in ICAO		
		9.4C	Develop specific requirements taking ICAO as basis		
9.5	"how" to introduce LPL (LPL (B))	9.5A	Less stringent requirements as in ICAO	NO	2.14.1.5
		9.5B	Same requirements as for Free Balloon Pilot Licence in ICAO		
		9.5C	Develop specific requirements, taking ICAO as basis		
9.6	"how" to introduce LPL (concept of LPL/PPL for airships (As))	9.6A	Both LPL and PPL for airships	NO	2.14.1.6
		9.6B	Only PPL for airships		
		9.6C	Neither LPL or PPL for airships		
1	validity of LPL	1A	Periodic revalidation required	NO	2.14.1.7
		1B	Undetermined validity and no currency requirements		
		1C	Undetermined validity plus currency requirements		

Table 31: Identified alternative options on "how" to implement LPL

N.	Specific objective	Alternative options		Full RIA necessary	
		N.	Description	YES/NO	Par.
15.1	Number of pilot licences	15.1A	No limitation to number of licences	NO	2.14.2.1
		15.1B	One license per aircraft category		
		15.1C	One license covering all privileges		
15.2	Pilot licences for powered lift aircraft	15.2A	Do nothing	NO	2.14.2.7
		15.2B	Completely regulate new licence category		
		15.2C	Create only ATPL and type rating for this category		
		15.2D	Create only type rating (PL) accessible to ATPL (A) or (H)		
11	Language proficiency	11A	Periodicity of re-assessment decided by national authorities	NO	2.14.2.2
		11B	Common EU periodicity of re-assessment, different from ICAO		
		11C	Common EU periodicity of re-assessment, following ICAO		
2	Proficiency checks for non commercial pilots (PPL, SPL, BPL and LPL)	2A	No proficiency checks	YES	2.8
		2B	Training flight with instructor		
		2C	Check with examiner every 2 years		
		2D	Check with examiner every 6 years		
		2E	Check with examiner every 12 years		
8	Instrument rating for helicopters	8A	Rating for each helicopter type	NO	2.14.2.3
		8B	One Instrument rating for an entire category of helicopters		
17.1	Additional pilot ratings (related to activity)	17.1A	Only night rating	NO	2.14.2.4
		17.1B	Many additional ratings		
		17.1C	Three additional ratings		
17.2	Additional pilot ratings (IR for CPL (As))	17.2A	Same requirements as in ICAO	NO	2.14.2.6
		17.2B	Specific EU requirements		
14.1	Privileges for PPL (As), SPL and BPL (commercial privileges)	14.1A	Do nothing	NO	2.14.2.5
		14.1B	CPL for all		
		14.1C	CPL (As) and extension of privileges for BPL and SPL		
14.2	Privileges for PPL, SPL, and BPL (remunerated instruction)	14.2A	Exclude this possibility	YES	2.9
		14.2B	Possible when instructor possesses sufficient CPL theoretical knowledge		
		14.2C	Extension possible through an instructor certificate		

Table 32: Identified alternative options for other categories of pilots

N.	Specific objective	Alternative options		Full RIA necessary	
		N.	Description	YES/NO	Par.
6.1	Categories for flight instructors/examiners	6.1A	Do nothing	NO	2.14.3.1
		6.1B	Give privileges to existing categories		
		6.1C	New categories of instructors/examiner for all new licences and ratings		
		6.1D	Only two new categories (instructor for LPL and mountain instructor)		

6.2	Categories for flight instructors (MCCI for helicopters)	6.2A	Do nothing	NO	2.14.3.3
		6.2B	Delete MCCI also for aeroplanes		
		6.2C	Establish MCCI also for helicopters		
3	Skill test for instructors	3A	Do nothing	NO	2.14.3.2
		3B	Skill test for all instructor categories with an examiner		
		3C	No skill test for MCCI, STI and MI		
		3D	Assessment of competence for the MCCI, STI and MI by an instructor nominated by the authority		
		3E	Assessment of competence for the MCCI, STI and MI by an examiner or FI during training course		
4	Proficiency for instructors	Tens of different options could be envisaged. They are analysed in paragraph 2.10.1 below.		YES	2.10
7	Requirements for examiners	7A	No common legally binding rules	YES	2.11
		7B	Privileges based on JAR-FCL requirements		
		7C	Establish new specific common requirements and privileges		

**Table 33: Identified alternative options for instructors and examiners**

N.	Specific objective	Alternative options		Full RIA necessary	
		N.	Description	YES/NO	Par.
5.1	Proportionate medical rules (requirements for LPL)	5.1A	ICAO Class 2	YES	2.12
		5.1B	Class 2 as per JAR-FCL 3		
		5.1C	Specific medical requirements for LPL		
		5.1D	No medical certificate at all		
5.2	Proportionate medical rules (requirements for BPL and SPL involved in commercial activities)	5.2A	Class 1 medical requirements	NO	2.14.4.1
		5.2B	Class 2 medical requirements		
		5.2C	Develop specific medical requirements		
5.3	Proportionate medical rules (initial issue Class 1)	5.3A	Only authorities	NO	2.14.4.2
		5.3B	AeMC and AME		
		5.3C	Only AeMC for initial issue and also AME for revalidation		
5.4	Proportionate medical rules (validity Class 2)	5.4A	Follow JAR-FCL 3 provisions	NO	2.14.4.3
		5.4B	Follow ICAO standards		
5.5	Proportionate medical rules (decisions for Class 2)	5.5A	Decision only by authority	YES	2.13
		5.5B	Decision by AeMC or AME		
		5.5C	Decision only by AeMC		
5.6	Validity of AME certificate	5.6A	Periodic revalidation	NO	2.14.4.4
		5.6B	Unlimited validity and no additional requirements		
		5.6C	Unlimited validity plus demonstration of currency		

**Table 34: Identified alternative options for medical issues**

## **2.6 Basic LPL for aeroplanes and helicopters**

### *2.6.1 Alternative options*

The possible concept of the "Basic" LPL for aeroplanes (A) and helicopters (H) is the answer to the requests (with reference to CRD to A-NPA 14/2006<sup>64</sup>) to create a licence with an easier access than that provided by the JAR-FCL PPL in order to revitalise general aviation in Europe. In other words, the **Basic LPL could be a relatively cheap "entry" licence** for newcomers to aviation, including young people.

In order to achieve the above goal, necessarily these Basic LPL (A) and LPL (H) will have to be based on requirements less stringent than the PPL in ICAO Annex I, such as:

- "At least" 20h of flight training instead of 30h required for the "full" LPL<sup>65</sup>, which means that the Flight Instructor (FI) may decide that more hours are necessary, on a case-by-case basis, before the applicant could be ready for flying solo and ready for the proficiency check;
- Reduced navigation training;
- Fewer amount of solo flight time;
- No solo cross country flights during the flight training.

However, reduced training requirements may also possibly lead to reduced privileges compared to the "full" LPL which could mean<sup>66</sup>, for instance:

- Possibility to carry a maximum of 1 passenger;
- Authorisation to execute local flights within a range of no more than 50 kilometres from aerodrome;
- No authorisation to intermediately land, under normal conditions, at an aerodrome different from the departure one.

The Agency, in respect of this possible Basic LPL (A) and LPL (H) has therefore identified the following possible alternative options:

- **16A: "Do nothing"** option; i.e. **no Basic LPL** created (only the "full" LPL possible);
- **16B:** Create Basic LPL (A) and Basic LPL (H), with the **same privileges**, but with **easier training requirements** than the full LPL (i.e. 20h instead of 30h flight training for the full LPL, reduced navigation training, fewer amount of solo flight time and no solo cross country flights during the flight training);
- **16C:** Create Basic LPL, with **easier training requirements** than the full LPL (as in option 16B), but with **reduced privileges** (i.e. carrying a maximum of 1 passenger, limited to local flights within no more than 50 kilometres from aerodrome and with no intermediate landings).

### *2.6.2 Target group and number of entities concerned*

#### *2.6.2.1 Competent Authorities*

According to Article 7.2 of the Basic Regulation, all the pilots need a licence (except when under training) and, according to Article 21 therein, all such licences are issued by competent authorities at national level<sup>67</sup>. In other words, whichever is the preferred option, there will be no impact at all on the tasks, budget or staff of the Agency.

The number of affected competent authorities is therefore, in case of any of the three possible options, **equal to the number of EASA Member States: 27 + 4 = 31**. In fact, even in the case of option 16A the authorities will have to issue a number of LPL licences.

#### *2.6.2.2 LPL pilots for aeroplane and helicopters*

In paragraph 2.3.1 above it has been estimated that in 2007 there were, in the EU 27 + 4:

<sup>64</sup> [http://www.easa.europa.eu/ws\\_prod/r/doc/CRD-14-2006%20Explanatory%20Note.pdf](http://www.easa.europa.eu/ws_prod/r/doc/CRD-14-2006%20Explanatory%20Note.pdf)

<sup>65</sup> NPA 2008-17b Subpart B FCL.110.A

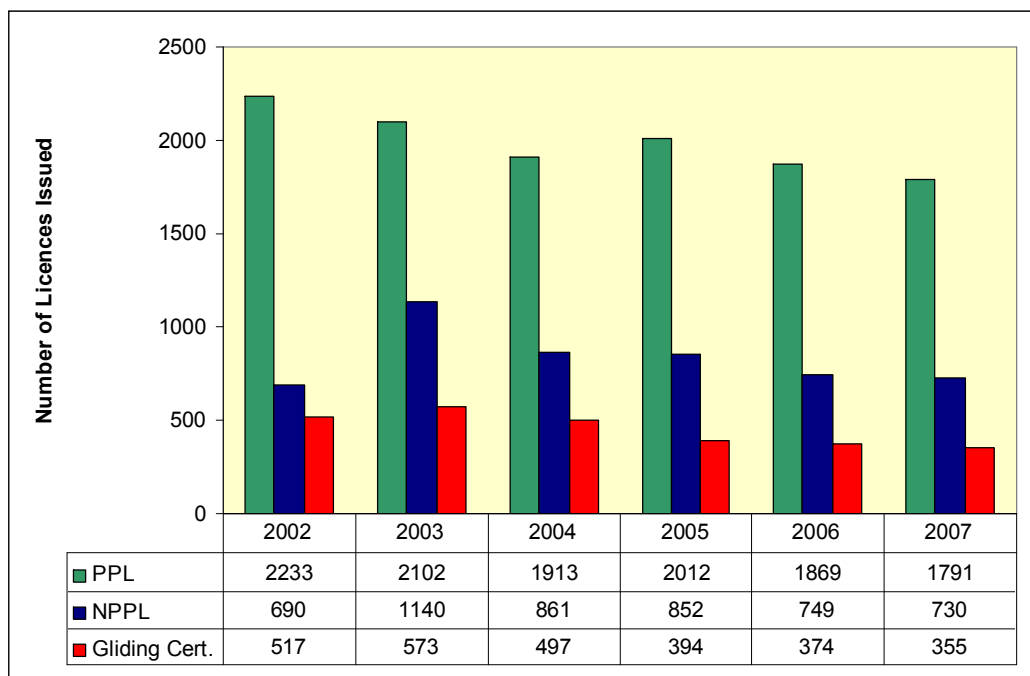
<sup>66</sup> NPA 2008-17b Subpart B Section 2 FCL.105BA/H Basic LPL privileges

<sup>67</sup> In fact Article 7.2 mandates the licence for all pilots, while Article 21 does not give any tasks to the Agency in this respect. Throughout the Basic Regulation all the certificates which are necessary, but for whose issuance the Agency is not tasked, are by definition issued by competent authorities.

- PPL (A): 163,621;
- PPL (H): 9,774.

Neither "Full" nor "Basic" LPLs are today established in the EU. So, 0 LPL licences are in existence. However, in the context of the present RIA it is relevant to estimate how many citizens could exploit the possibility of flying for recreational purposes, once the EU-LPL will be in force.

A licence similar to the LPL, called "national" PPL has been introduced **in the UK in 2002**. From then onwards, excluding the "peak" year 2003 in which 1140 NPPL were issued, the number of new NPPL issued in the UK per year was in the range of 700-900 and in average **837/year**, as shown in Figure 5 below, provided by the UK CAA:



**Figure 5: Number of flight crew licences issued in UK**

Similarly, in the NL a "Recreational" Pilot Licence (RPL), with less stringent requirements than for a PPL, has been created. Data on the total amount of valid and active pilot licenses was provided by the NL CAA (referring to the date of 15 July 2008) and by the UK CAA (referring to the date of 31 December 2007).

This data is summarised in Table 35 below:

Type of licence	NL	UK	TOTAL	% of LPL over PPL
JAR PPL (A)		9,000	9,000	
UK PPL (A)		14,000	14,000	
PPL(A)	6,129		6,129	
<b>Total PPL (A)</b>	<b>6,129</b>	<b>23,000</b>	<b>29,129</b>	
NPPL (A)		4,550	4,550	
RPL(A)	2,895		2,895	
<b>Total licences similar to LPL (A)</b>	<b>2,895</b>	<b>4,550</b>	<b>7,445</b>	<b>+ 25%</b>
PPL(H)	173			
RPL(H)	5			<b>+ 3%</b>

**Table 35: Number of PPL, NPPL and RPL in NL and UK**

From the Table above it can be estimated that, in the NL, the RPL (H) lead to 3% more helicopter pilots and, in both countries, a sort of "Full" LPL (A) has led to 25% more recreational pilots in about five years. In the absence of better data this percentage effect will be assumed for the EU 27 + 4 in the five years following the adoption of the proposed FCL implementing rules.

Herein it is hence assumed that the same percentage increases to the figures for PPL (A) and (H) in the EU 27 + 4 presented above in this paragraph, could materialize, in order of magnitude and in about 5 years, in the case of **option 16A (i.e. only "Full" LPL, with no "Basic" entry level possible), i.e.:**

- **New Full LPL (A): 25% of 163,621 = around 40,000 in 5 years (i.e. around 8,000/year);**
- **New Full PPL (H): 3% of 9,774 = around 300 (i.e. 60/year).**

**In case of either option 16B or 16C** (both based on the same reduced requirements), young people wishing to fly will have to overcome a lower threshold in terms of cost, time and difficulty. Even more LPL (Basic and Full) could then materialise, mainly issued to young people. The Agency therefore assumes that in this case:

- **12,000 Basic LPL (A)/year will be issued during the first five years; and**
- **80 Basic LPL (H)/year.**

In this case however, it has to be considered that a number of holders of the Basic LPL might decide to upgrade their licence to "Full" LPL (only ten more hours of instruction in flight required). Therefore, the Agency estimates that about 1/3 of the holders of the Basic LPL will avail themselves of this possibility, so leading to the following estimated **number of upgrades:**

- **Upgrades to Full LPL (A): around 4,000/year**
- **Upgrades to Full PPL (H): around 25/year.**

#### 2.6.2.3 Directly generated employment

Additional pilots will of course create direct and indirect economic as well as social impacts. Indirect economic impact, such as, for instance, more activity for bars and restaurants located at Aero Clubs, more educational material purchased, more fuel used, more travel to/from aerodromes and so on, are significant for local economies, but difficult to assess at EU 27+4 level. For the present RIA they are therefore considered outside the scope of assessment.

On the other hand, it will be attempted to estimate the direct economic and social impact on flight instructors, examiners, medical physicians and aircraft/engine maintenance engineers. For these categories the number of involved entities (not in terms of head count but in terms of Full Time Equivalents (FTEs)) is estimated.

For this RIA the Agency assumes that **1 FTE represents in average:**

- **200 effective man/days of labour** (i.e. 356 days in the year – 104 Saturdays and Sundays – 30 days of leave/Bank holidays – 2 days sick leave – 20 days spent for administrative/routine overhead tasks, which do not really represent the "product" of the labour);
- **1500** (i.e.  $200 \times 7.5$  hours/day) effective **working hours/year**;
- Out of which **500 flying hours/year** in the case of professional pilots (including flight instructors and examiners); in terms of FTEs, whether this 500 flying hours are produced by one person (for whom this will be a full time job) or by a number of different physical persons (e.g. part time instructors during the week end) is irrelevant.

The minimum required instruction flight hours proposed by the Agency are:

- 20 for the Basic LPL (A);
- 35 for the Basic LPL (H);
- 30 for the Full LPL (A);
- 45 for the Full LPL (H).

However, for the instruction for the LPL, it is assumed that a certain amount of said instruction flight hours will be provided by Light Aircraft Flight Instructors (LAFI) which are not allowed to receive any remuneration for their instructing work, or by FI's providing this training on a voluntary, unpaid basis in an aero club environment. Therefore, the resulting **additional demand for Flight Instructors** should be estimated on the basis of the assumption that only around 50% of the total instruction flight time for the future LPL will be done for remuneration and will count as working time for the FTE calculation of instructors. Combining these just mentioned figures (which are conservative since in a number of cases



more instruction in flight might be necessary), the number of new FTEs required as flight instructors, are estimated in Table 36 below:

OPTION			Estimated Number of FTEs as Flight Instructors (FI)			
Id.	Description		New LPL/yr	Minimum instruction flying hours/ student pilot	Total minimum number of instruction flying hours/year	FI FTEs (50%)
<b>16 A</b>	"Do nothing" (i.e. no Basic LPL)	New Full LPL (A)	8,000	30	240,000	
		New Full LPL (H)	60	45	2,700	
	<b>TOTAL</b>				<b>242,700</b>	<b>243</b>
<b>16 B &amp; 16 C</b>	Basic LPL (A) and LPL (H) with less training	New Basic LPL (A)	12,000	20	240,000	
		Upgrades to Full LPL (A)	4,000	10	40,000	
		New Basic LPL (H)	80	35	2,800	
		Upgrades to Full LPL (H)	25	10	250	
	<b>TOTAL</b>				<b>283,050</b>	<b>283</b>

**Table 36: Number of flight instructor FTEs**

Along the same lines it is assumed (and again this is a conservative estimate since in a number of cases the practical skill test will have to be repeated) that for each licence or upgrade, 1 flying hour with one examiner is required. Therefore, the number of new FTEs required as examiners is estimated in Table 37 below:

OPTION			Estimated Number of FTEs for Examiners			
Id.	Description		New LPL/yr	Minimum exam flying hours/ student pilot	Total minimum number of exam flying hours/year	Examiners FTEs
<b>16 A</b>	"Do nothing" (i.e. no Basic LPL)	New Full LPL (A)	8,000	1	8,000	
		New Full LPL (H)	60	1	60	
	<b>TOTAL</b>				<b>8,060</b>	<b>16</b>
<b>16 B &amp; 16 C</b>	Basic LPL (A) and LPL (H) with less training	New Basic LPL (A)	12,000	1	12,000	
		Upgrades to Full LPL (A)	4,000	1	4,000	
		New Basic LPL (H)	80	1	80	
		Upgrades to Full LPL (H)	25	1	25	
	<b>TOTAL</b>				<b>16,105</b>	<b>32</b>

**Table 37: Number of examiner FTEs**

In NPA 2008-17 the Agency has proposed for the LPL applicants/holders one initial medical examination by a General Medical Practitioner (GMP), with validity extended until the age of 45 years reached by the

pilot. A periodic re-validation of the medical certificate will be required above this age. In the present RIA, it is therefore conservative to assume that all new applicants for LPL will be younger than 45 years of age.

One visit to a GMP, in the majority of cases of young persons in a good health state, will take around 0.5 hours. In a number of cases, however, more time by the physician will be necessary. It is then assumed that a medical visit for LPL will take, in average, 0.6 hours.

Therefore, the number of new FTEs required as GMPs is estimated in Table 38 below:

OPTION			Estimated Number of FTEs for physicians (GMP)			
Id.	Description		New LPL/yr	Average duration (hours) of the visit	Total number of hours or medical examination/year	Physician FTEs
<b>16 A</b>	"Do nothing" (i.e. no Basic LPL)	New Full LPL (A)	8,000	0.6	4,800	
		New Full LPL (H)	60	0.6	36	
	<b>TOTAL</b>				<b>4,836</b>	<b>3</b>
<b>16 B &amp; 16 C</b>	Basic LPL (A) and LPL (H) with less training	New Basic LPL (A)	12,000	0.6	7,200	
		New Basic LPL (H)	80	0.6	48	
	<b>TOTAL</b>				<b>7,248</b>	<b>5</b>

**Table 38: Number of FTEs for physicians (GMP)**

Finally, also the number of FTEs created for aircraft (and engines) maintenance engineers has to be estimated. The number of maintenance hours required for each flying hour is very difficult to estimate, since it is influenced by the aircraft category, class and type, by the age of the airframe, by its conditions, by the regulatory requirements, by the operational use or by the environment where the aircraft is usually parked and so on. However, in 2006 IATA collected data on maintenance cost from 28 airlines around the world, representing about 15% of the commercial air transport fleet<sup>68</sup>. According to this information, an average IATA airline spent, in 2006, 870 US \$ in direct maintenance costs per flight hour. Considering the inflation (3.186%) and exchange (1.370) rates estimated in paragraph 2.3.2.9 above, this value of 870 US \$ in 2006 translates into 897.72 US \$ (2007) and around 655 € (2007) of maintenance costs per flight hour for large aeroplanes used in CAT.

According to data provided to the Agency by the FAA, the labour cost of aviation mechanics, technicians and engineers, in 2002 in the USA, was in the range of 50,000 US \$ per year. Applying to this value the inflation rates said above, the yearly cost can be estimated in 56,800 US \$ in the USA in 2007. At the exchange rate of 1,370 US \$ per €, this translates into 41,460 € per year. However, since usually in the EU the Governments provide more services and more social security in return of higher tax and higher social charges, the labour cost for aircraft maintenance is rounded up to 45 k€/FTE.

Hence it is concluded that **in the EU (in 2007) the average cost of one maintenance hour** was  $45,000/1500 = 30 \text{ €}$ , unless carried out by the pilot owner.

Furthermore, it is assumed that the cost of maintenance for large aeroplanes in CAT (655 €/flight hour as estimated above) is constituted for 70% by spare parts and materials and for 30% by labour. Then, for said aeroplanes 196.5 € are spent in maintenance labour cost per each flight hour (i.e. 30% of 655), representing (196.5/30):

### **6.5 maintenance hours per flight hour for large aeroplanes used in CAT**

<sup>68</sup> [http://aviationweek.typepad.com/mro/2006/12/870\\_per\\_flight\\_.html](http://aviationweek.typepad.com/mro/2006/12/870_per_flight_.html)

The above figure is of course not directly applicable to the “non-complex motorized” aircraft (below 2,000 Kg MTOM) flown by the LPL, since in this respect, some considerations might apply:

- these aircraft are much simpler than the larger aeroplanes;
- their avionic equipment is reduced to the bare minimum;
- although some maintenance (scheduled in calendar terms and not in terms of hours flown) will be anyway necessary, even if the aircraft does not fly very much.

Combining all these considerations, the Agency estimates that:

**for the aircraft flown by LPL holders, in average, no more than 1 maintenance hour is necessary per flight hour.**

However, while for the flight instructors, examiners and GMPs the number of “new” licences per year is relevant, in this case also the number of hours flown by the already licensed LPL will be relevant. The minimum number of flight hours required per year to maintain the licence is 6. However, LPL could fly in average 1 hour during 15 week-ends/year: **i.e. 15 flight hours/year by the holder of a LPL issued the previous year**. Therefore, the number of hours flown in average per year can be estimated as in Table 39 below:

OPTION		Year					Average
Id.	Description	2010	2011	2012	2013	2014	
<b>16A</b> “Do nothing” (i.e. no Basic LPL)	New Full LPL	8,060	8,060	8,060	8,060	8,060	8,060
	Previously issued LPL	0	8,060	16,120	24,180	32,240	N.A.
	<b>TOTAL active LPL</b>	8,060	16,120	24,180	32,240	40,300	<b>24,180</b>
	Instruction/ examination flight hours	250,760	250,760	250,760	250,760	250,760	250,760
	Recreational flight hours (only by previously issued LPL)	0	120,900	245,800	362,700	483,600	242,600
	<b>TOTAL flight hours/year</b>						<b>493,360</b>
	<b>TOTAL maintenance hours/year</b>						<b>493,360</b>
<b>16B &amp; 16C</b> Basic LPL (A) and LPL (H) with less training	New Basic LPL	12,080	12,080	12,080	12,080	12,080	12,080
	Previously issued LPL	0	12,080	24,160	36,240	48,320	N.A.
	<b>TOTAL active LPL</b>	12,080	24,160	36,240	48,320	60,400	36,240
	Instruction/ examination flight hours (including upgrades)	444,055	444,055	444,055	444,055	444,055	444,055
	Recreational flight hours (only by previously issued LPL)	0	181,200	362,400	543,600	724,800	362,400
	<b>TOTAL flight hours/year</b>						<b>806,455</b>
	<b>TOTAL maintenance hours/year</b>						<b>806,455</b>

**Table 39: Number of flight hours per year by LPL and related maintenance hours**

In conclusion, the following new FTEs will be required for aircraft maintenance:

- 493,360 hours/1500 hours/year = 329 FTEs in case of option 16A;
- 806,455/1500 = 538 FTEs in case of either option 16B or 16C.

However, for the non-complex machines flown by LPL, it is assumed that around 50% of said maintenance labour will be provided by the pilot owner during his/her spare time. Therefore, the resulting **additional demand for flight mechanics/engineers** is estimated to be:

- **164 FTEs in case of option 16A;**
- **269 in case of either option 16B or 16C.**

#### 2.6.2.4 Summary of affected entities

In conclusion, on the basis of the information in sub-paragraphs 2.6.2.1, 2.6.2.2 and 2.6.2.3 above, the number of concerned entities is estimated as in Table 40 below:

OPTION		Estimated Number						
Id.	Description	Auth.	New LPL (A)	New LPL (H)	FTEs			
					FI	Exam.	Phys.	Maint. Eng.
16 A	"Do nothing" (i.e. no Basic LPL)	31	8,000 /yr	60/yr	243	16	3	164
16 B	Basic LPL (A) and LPL (H) with same privileges but less training	31	12,000 /yr	80/yr	283	32	5	269
16 C	As 15B but less privileges	31	12,000 /yr	80/yr	283	32	5	269

**Table 40: Number of affected entities for the "Basic" LPL**

### 2.6.3 Safety impact

Very little data (reference to paragraph 2.3.2.3 above) is available to discriminate between helicopter PPL and LPL. In any case, the expected number of LPL (H) is much lower than those of LPL (A). Therefore, in this paragraph consideration will be given only to LPL (A).

In paragraph 2.3.2.5 above it has been stated that today, for aeroplanes, the ATPL and CPL show an accident rate (versus the number of new licences) much lower than PPL or LPL (NPPL in UK semantic and RPL in the NL). On the contrary, the level of safety for PPL and LPL could still be significantly improved. However, **there is no evidence available today showing that the LPL is significantly less safe than the PPL**. So even in this case, the issue is not to assess "whether" the LPL shall be introduced, but to compare the potential safety impacts of the three identified alternative options for the future.

In this perspective, it is necessary to fully consider the differences between the Basic LPL (A), Full LPL (A) and PPL (A) (the **latter in practice conforming to the ICAO SARPs for PPL (A)**), as proposed by the Agency in NPA 2008/17 (which is option 15C: less training and less privileges). The relevant features to consider are the initial flight training requirements, the privileges and the number of flight hours required per year to maintain the licence valid. So far, aviation experience has shown that the latter, from the safety perspective, can be even more important than anything else for the light general aviation. These features are summarised in Table 41 below:

		Basic LPL (A) (option 16C)	Full LPL (A)	PPL (A) (ICAO)
<b>Initial training in flight</b>	Total flight time	20 hours	30 hours	40 hours (35)
	Dual instruction in flight	10 hours	15 hours	No minimum
	Solo under supervision	4 hours	6 hours	10 hours
	Supervised cross-country flying	0	3 hours	5 hours
	Flight simulator	0	0	max. 5 hours
<b>Currency</b>	Minimum yearly flight hours	6	6	6
<b>Privileges</b>	Engine(s)	Single-engine piston	Single-engine piston	Any (including twin or multi jets)
	MTOM	< 2000 Kg	< 2000 Kg	Unlimited
	Passengers	Max 1	Max 3	Unlimited
	Local Flights	Permitted	Permitted	Permitted
	Destination aerodrome different from departure aerodrome	Not permitted	Permitted	Permitted
	Range from departure aerodrome	Max 50 Km	Unlimited	Unlimited
	Intermediate landings	Not permitted	Permitted	Permitted

**Table 41: Different privileges and requirements for Basic LPL (A), Full LPL (A) and PPL**

From the table it can be observed that in **option 16C**:

- Only three hours of dual navigation training are required, but no solo cross country during initial training; however, privileges are restricted to local flights within a maximum distance of 50 Km from the aerodrome of departure and without any intermediate landing;
- The number of hours initially required for instruction in flight is 50% less than for PPL, but again the privileges are limited to non-complex aircraft below 2000 kg MTOM;
- The LPL (basic or Full) is not covered by ICAO Annex 1, but the privileges granted by LPL (A) are significantly more limited than those granted by the ICAO/PPL;
- Pilots having acquired the Basic LPL, will most probably acquire more flying solo experience, before undertaking new training for the upgrade to "Full" LPL (while in case of option 16A they will get the "full" privileges immediately after the issuance of the first licence);
- **The same number of a minimum of 6 flight hours/year is normally required to keep the licence current** (although in case this requirement is not fulfilled alternative additional flight training with an instructor may be used).

In case of **option 16B**, same privileges than the "Full" LPL, but with less initial training, the aircraft types and the number of passengers will remain essentially the same, but the Basic LPL (A) pilot would be **allowed to fly at an unlimited distance** from the departure aerodrome, landing also at any different aerodrome he wishes. It is believed that only 20 initial hours of local initial training are not sufficient for this.

Furthermore, in option 16A there will be no Basic LPL, while the total training will be only 25% less than for the ICAO PPL (A), but, on the contrary the privileges, in terms of type and class of aeroplane, are restricted to non-complex aircraft below 2000 kg MTOM.. However, in the case of option 16A the student pilot will "jump" directly to the privileges of the "full" LPL (e.g. cross country flying and landing at unfamiliar aerodromes). On the contrary, in the case of option 16C, s/he will have time for acquiring piloting experience before (or in parallel) to undertaking further training for the "Full" LPL. In other words, option 16C is slightly better than 16A in safety terms.

In conclusion, therefore, 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 specific objectives from paragraph 2.4.3, scores can be attributed for the safety impact of the three options related to the Basic LPL as presented in following Table 42:

Specific Objectives	Scoring of options		
	16A	16B	16C
	No Basic LPL	Less training and same privileges	Less training and less privileges
Introduce LPL	2	- 3	3
Compliance with ICAO standards	1	0	0
LPL privileges	3	- 3	2
Basic level for LPL	1	- 3	2
<b>TOTAL</b>	<b>7</b>	<b>- 9</b>	<b>7</b>
<b>AVERAGE SCORE (Tot/4 quantified parameters)</b>	<b>1.75</b>	<b>- 2.25</b>	<b>1.75</b>
<b>WEIGHTED AVERAGE (Score x 3 for safety)</b>	<b>5.25</b>	<b>- 6.75</b>	<b>5.25</b>

**Table 42: Scoring of the safety impact for the Basic LPL**

From the above Table 42 it can be concluded that option 16B is not acceptable from the safety perspective. On the contrary, both options 16A and 16C score significantly positively.

#### 2.6.4 Environmental impact

In paragraph 2.6.3.2 it has been estimated that the options under consideration will produce the following number of additional flight hours/year:

- 493,360 in case of option 16A (do nothing);
- 806,455 in case of either option 16B or 16C.

- The additional number of flights created by Basic LPL as compared to the “do nothing” option is therefore 313.095 per year.

It is further assumed that all these hours will be flown by single-engine piston aeroplanes of less than 2,000 Kg MTOM.

In order to estimate the environmental impact of the Basic LPL we consider only the greenhouse gas emissions. Due to the engine type and typically low cruise altitudes of these aircraft there will be negligible amounts of additional NO<sub>x</sub> emissions in the upper troposphere that would have a significant negative impact on the atmospheric ozone. Thus, only CO<sub>2</sub> emissions are considered below.

The Intergovernmental Panel on Climate Change (IPCC) suggests that for piston engine airplanes, which use aviation gasoline, estimates of greenhouse gas emission can be based solely on fuel consumption, without considering the landing and take-off cycles.<sup>69</sup> In general, these types of engines running on aviation gasoline (AvGas) are considered to contribute less than 1% to aviation’s total emissions.

As regards climate impact of the new type of pilot licence, the additional traffic created by the licence is relevant, i.e. 313.095 flight hours/year. Single-piston aeroplanes use aviation gasoline, which has an average density of 0,76 kg/litre.

Density AvGas (d)	kg/l	0,76
CO <sub>2</sub> emission factor ( c )	kg CO <sub>2</sub> /kg fuel	3,16
Additional traffic (Option 15 B&C)	hrs/year	313.095
CO <sub>2</sub> offsetting cost	EUR/t	23

**Table 43: Key data for environmental impact assessment**

As aviation fuels generate 3.16 kg of CO<sub>2</sub> per kg of fuel burnt, one can calculate the amount of CO<sub>2</sub> created by the additional traffic, if the fuel burn per hour is known:

$$(1) \quad \Delta\text{CO}_2 = f * d * c * T$$

Where:

CO<sub>2</sub>: Amount of CO<sub>2</sub> produced in kg  
 f: Fuel burn in l/hrs  
 d: AvGas fuel density in kg/l  
 c: CO<sub>2</sub> Emission factor in kg of CO<sub>2</sub> per kg of fuel  
 T: Additional traffic in hours per year

As there is no reliable information concerning the fleet composition of aircraft less than 2 t MTOW, the range of aircraft and related fuel burn is given from “very efficient”, i.e. light powered sailplanes or Touring Motor Gliders to “very inefficient”, i.e. older piston engines. As a median the Cessna 172 is considered a typical aircraft flown by a majority of potential LPL pilots.

The total amount of CO<sub>2</sub> created by the new license type is thus estimated at roughly 28 tonnes per year. Compared to the total CO<sub>2</sub> emissions of the aviation sector, of approximately 120 million tonnes, this is a negligible fraction.

Environmental Impact Option 15B,C		Aircraft Type (MTOW<2t)		
		Most Efficient Motor Gliders	Median Cessna 172	Most inefficient
Fuelburn (f)	l/hrs		11	37
CO <sub>2</sub>	kg/hrs	26,4	88,9	144,1
Additional CO <sub>2</sub> created (CO <sub>2</sub> )	kg	8.271.218	27.821.371	45.115.737
	t	8.271	27.821	45.116

**Table 44: Summary results of environmental impact assessment**

<sup>69</sup> [IPCC\(2006\)](#): Guidelines for National Greenhouse Gas Inventories, page 3.57, so-called 1<sup>st</sup> Tier methodology.

Overall, the environmental impact of the new license type can be considered very small as regards Green House Gases (GHG). However, as far as noise emissions are concerned, on certain airfields with high noise exposure to the population, negative effects cannot be excluded. These local effects, however, need to be considered by local authorities and not in the present document.

In conclusion, any of the three options will have a slight negative impact on environment (score -1), which, multiplied by 3, corresponds to a "weighted" score of - 3.

#### *2.6.5 Economic Impact*

##### 2.6.5.1 Regulatory cost for the Agency

Whichever option is selected, the tasks of the Agency in respect of rulemaking, safety analysis and standardisation will remain unchanged, with respect to today's situation.

No certification role at all is established for the Agency in respect of pilot licences. In other words, there is no economic impact on the Agency apart from the immediate costs to develop the new rules (already considered in the Agency budget), which means no financial flow from either the LPL or the taxpayers towards it.

##### 2.6.5.2 Additional income for the competent authorities

Normally, competent authorities charge for the personnel licences which they issue. In particular the UK CAA, in August 2008, was informing stakeholders that the administrative charge for the grant of an NPPL (equivalent to the EU LPL) was 46 £<sup>70</sup>. This charge covers the purely administrative costs inside the UK CAA, since the application shall be "supported by a recommendation made by a person approved by the UK CAA for the purpose". In other words, the cost of the examination in flight is not included in the mentioned charge. For a "variant" (e.g. upgrade from "basic" to "Full") the published charge was 34 £.

On 07 August 2008 the exchange rate was 0.7925 £ for 1 €.

Therefore 46 £ = **around 58 € to be paid by the applicant to the authority for the initial issue of the LPL and 43€ for the upgrade from Basic to Full LPL.**

It is assumed that, in terms of order of magnitude, similar charges will be established by all the competent authorities in the EU 27 + 4.

Therefore, the additional income for the authorities deriving from the increase in the number of applications can be estimated as in Table 45 below:

<sup>70</sup> <http://www.caa.co.uk/docs/1352/PLS%20Enclosure%200708.pdf>

OPTION			New LPL/yr	Income for authorities	
Id.	Description			Administrative charge for one application	TOTAL additional income
				€	K€
16A	"Do nothing" (i.e. no Basic LPL)	New Full LPL (A)	8,000	58	464
		New Full LPL (H)	60	58	3.5
	TOTAL				
16B & 16C	Basic LPL (A) and LPL (H) with less training	New Basic LPL (A)	12,000	58	696
		Upgrades to Full LPL (A)	4,000	43	172
		New Basic LPL (H)	80	58	4.6
		Upgrades to Full LPL (H)	25	43	1
	TOTAL				

**Table 45: Additional income for the competent authorities**

Since the proposed rules follow the structure and philosophy of long established ICAO and JAR-FCL rules, although some requirements (e.g. hours of training in flight) will change, it is assumed that the effort necessary for the authorities to familiarise themselves with the new rules and adapt to them will be marginal. And, in any case, this will be over compensated by the savings deriving from the centralisation of rulemaking. These effects, however, are linked to the Basic Regulation itself and not to the detailed implementing rules: therefore these costs are not estimated in detail herein.

Furthermore, it is assumed that in any of the three options under consideration, the charges paid by the applicants will cover 100% of the internal costs of the authorities to administer the licences. Therefore, there is no financial flow from the taxpayers to the authorities in relation to any of the three options under consideration. Should one or more States decide differently, this will not be Community responsibility and therefore it does not belong to the present RIA.

#### 2.6.5.3 Additional demand

In paragraph 2.6.2.4 above, the number of affected entities has been estimated for the three options under consideration. These entities included direct employment estimated in terms of FTEs for:

- Instructors;
- Examiners;
- General medical practitioners;
- Aircraft maintenance engineers.

**For the latter, in paragraph 2.6.2.3 the cost of one FTE has already been estimate in 45,000€.** Now it is assumed that for the other three categories of professionals, the cost on one FTE is in the order of 50,000 € (including remuneration, tax, social charges and company overheads).

Therefore, the total additional demand generated by the new LPL can be estimated as in Table 46 below:



OPTION		Additional demand								
Id.	Description	FI		Exam.		Physicians		Maintenance Engineers		TOTAL
		FTEs	K€	FTEs	K€	FTEs	K€	FTEs	K€	K€
16A	"Do nothing" (i.e. no Basic LPL)	243	12,125	16	800	3	150	164	7,380	20,455
16B	Basic LPL (A) and LPL (H) with same privileges but less training	283	14,150	32	1,600	5	250	269	12,105	28,105
16C	As 15B but less privileges	283	14,150	32	1,600	5	250	269	12,105	28,105

**Table 46: Additional demand created**

In turn it is assumed that this additional demand will generate income for States, on the basis of income tax, value added tax or other, in the order of 20%.

Therefore, the additional tax generated by each of the options is then:

- 4,091 k€/year in the case of option 16A;
- 5,621 k€/year in case of either option 16B or 16C.

#### 2.6.5.4 Safety dividend

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.

Nevertheless, in paragraph 2.3.2.9 the number of accidents for "non-complex" motorized aeroplanes (typically flown by the LPL) has been estimated, while in subsequent paragraph 2.3.2.10 the cost of fatal and non-fatal aviation accidents which are linked to FCL causal factors has been estimated as well.

Furthermore, in 2.6.3 it has been concluded that option 16C is the best in safety terms, 16A positive in that respect, while 16B is significantly negative. **It can therefore be assumed that 16C will have a positive effect on safety of the order of 5% (for this segment of aviation there are ample margins to improve safety), 16A a less significant positive effect (i.e. 2%) while 16B will have a negative effect of -5%.**

The above coarse estimation can be translated in terms of avoided accidents, victims and costs, as in Table 47 below:

Parameter	Baseline	16A	16B	16C
		No Basic LPL	Less training and same privileges	Less training and less privileges
<b>Safety effect</b>		<b>2% better</b>	<b>- 5% (worse)</b>	<b>5% better</b>
Accidents/year linked to FCL	146.5	143.6	153.8	139.2
Difference in accidents per year		- 2.9	<b>+ 7.3</b>	- 7.3
Fatal accidents/year linked to FCL	21	20.6	22	21
Difference in fatal accidents per year		- 0.4	<b>+ 1.0</b>	- 1.0
Victims/year	31.5	30.9	32.5	29.3
Difference in victims per year		- 0.6	<b>+ 1.6</b>	- 1.6
Cost of injuries (k€)	3,858			
Cost of substantial damage (k€)	2,263			
Cost of investigation (k€) non-fatal	2,117			
<b>TOTAL cost non-fatal accidents (k€)</b>	<b>8,238</b>	<b>8,073</b>	<b>8,649</b>	<b>7,827</b>
Difference in cost of non-fatal accidents per year		<b>- 165</b>	<b>+ 411</b>	<b>- 411</b>
Cost of fatalities (k€)	72,450			
Cost of destroyed aircraft (k€)	4,389			
Cost of investigation fatal accidents	609			
<b>TOTAL cost fatal accidents (k€)</b>	<b>77,448</b>	<b>75,900</b>	<b>81,320</b>	<b>73,576</b>
Difference in cost of fatal accidents per year		<b>- 1,548</b>	<b>+ 3,872</b>	<b>- 3,872</b>
<b>GRAND TOTAL (k€)</b>	<b>85,686</b>	<b>83,973</b>	<b>89,969</b>	<b>81,403</b>
<b>Total Difference (k€)</b>		<b>- 1,713</b>	<b>+ 4,284</b>	<b>- 4,284</b>

Table 47: Safety dividend (accidents linked to FCL)

#### 2.6.5.5 Environmental burden

As discussed above the environmental burden created by the measure is considered very small and thus no "monetisation" is attempted.

#### 2.6.5.6 Summary of economic impact

The economic flows estimated above can be presented in the Figures 6, 7 and 8 below:

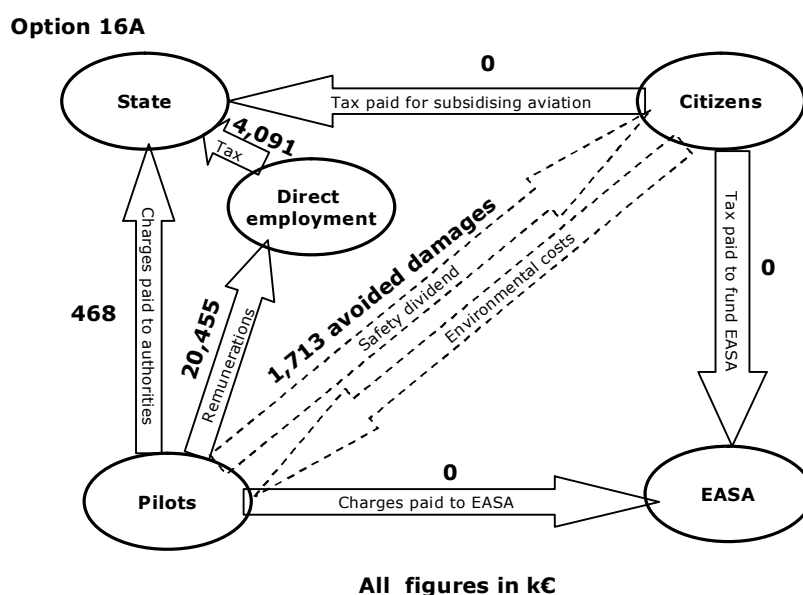
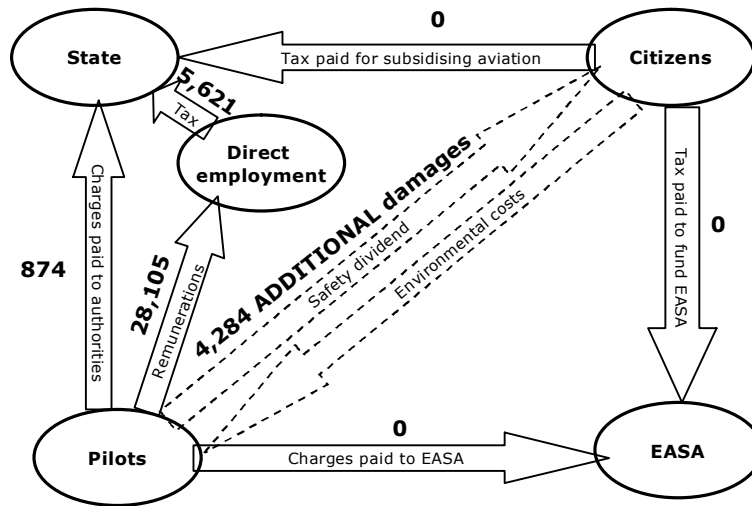
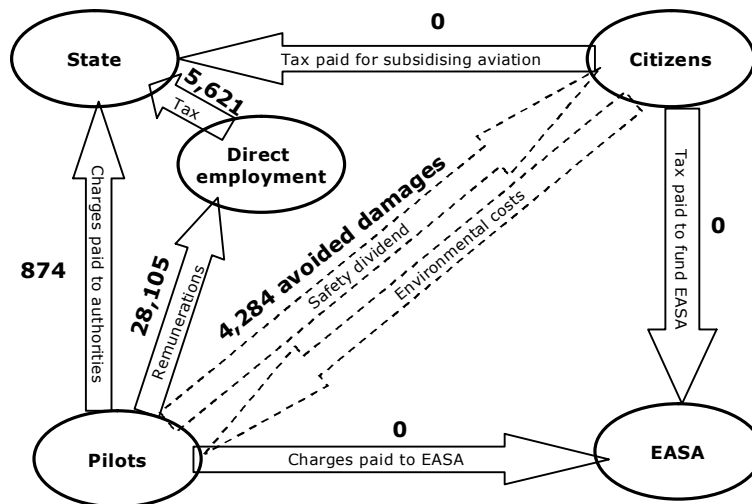


Figure 6: Economic flows for option 16A

**Option 16B**

All figures in k€

**Figure 7: Economic flows for option 16B****Option 16C**

All figures in k€

**Figure 8: Economic flows for option 16C**

The orders of magnitude estimated in the three graphs above can be summarised as in Table 48 below:

Parameter	16A	16B	16C
	No Basic LPL	Less training and same privileges	Less training and less privileges
From taxpayers to national authorities (k€)	0	0	0
From taxpayers to EASA	0	0	0
<b>Total from taxpayers to fund aviation (k€)</b>	<b>0</b>	<b>0</b>	<b>0</b>
From applicants to national authorities	- 468	- 874	- 874
From applicants to EASA	0	0	0
<b>Total from applicants to authorities</b>	<b>- 468</b>	<b>- 874</b>	<b>- 874</b>
<b>TOTAL from citizens to public sector</b>	<b>- 468</b>	<b>- 874</b>	<b>- 874</b>
Safety dividend	1,713	- 4,284	4,284
Environmental burden	0	0	0
<b>Benefit for society (k€)</b>	<b>1,245</b>	<b>- 5158</b>	<b>3,410</b>
Additional demand	20,455	28,105	28,105
Tax generated by additional demand	4,091	5,621	5,621

Table 48: Main economic flows

In other words:

- No money at all will flow from citizens (taxpayers or applicants) to the Agency for any of the options under consideration;
- No money at all will flow from taxpayers to the aviation competent authorities for any of the options under consideration;
- 468 k€/year will flow from applicants to the aviation competent authorities for option 16A, to pay for the services they require; 874 k€/year in case of either option 16B or 16C. It is assumed that this flow will cover the additional costs created to the competent authority.
- In the case of **option 16A** there will be a **net benefit for the society (safety benefit – administrative costs – environmental burden) of around 1.25 M€/year**; a **net benefit of 3.4 M€/year in case of option 16C** and a **damage of about 5.2 M€/year in case of option 16B**;
- Furthermore, option 16A will generate around 20 M€/year of additional demand (and therefore close to 4.1 M€/year additional tax), while either of options 16B and 16C will generate around 28 M€/year of additional demand (and therefore close to 5.6 M€/year additional tax).

The monetary terms in the present paragraph, as well as the additional number of LPL licences estimated in paragraph 2.6.2.1, are then translated into scoring, with reference to the applicable specific objectives in following Table 49:

Specific Objectives	Scoring of options		
	16A	16B	16C
	No Basic LPL	Less training and same privileges	Less training and less privileges
LPL privileges	1	- 3	2
Number of pilot licences	1	3	2
Basic level for LPL	0	- 3	2
<b>TOTAL</b>	<b>2</b>	<b>- 3</b>	<b>6</b>
<b>AVERAGE SCORE (Tot/3 quantified parameters)</b>	<b>0.67</b>	<b>- 1</b>	<b>2</b>
<b>WEIGHTED AVERAGE (Score x 2 for economy)</b>	<b>1.34</b>	<b>- 2</b>	<b>4</b>

Table 49: Scoring of the economic impact

In conclusion, option 16C scores better than 16A in economic terms, while option 16B is negative in this respect.

## 2.6.6 Social Impact

### 2.6.6.1 Competent authorities

In paragraph 2.6.5.2 it has been estimated that option 16A will imply an additional income of 468 k€/year for the competent authorities, to pay for the services associated with the issue of the new LPL. The additional income will amount to 874 k€/year in the case of either option 16B or 16C.

Assuming that **for the authorities one FTE represents 60,000 €/year** (including State organisation overhead), this translates (since new services are demanded) in additional employment in the public sector:

- $468/60 = \text{around } 8 \text{ FTEs in case of option 16A;}$
- $874/60 = \text{around } 15 \text{ FTEs in case of either option 16B or 16C.}$

### 2.6.6.2 FTEs deriving from additional demand

The number of FTEs deriving from additional demand has already been estimated in paragraph 2.6.2.4 above, as:

- 259 new FTEs for flight instructors/examiners, 3 new FTEs for physicians and 164 for aircraft mechanics/engineers in case of option 16A;
- 315 new FTEs for flight instructors/examiners, 5 new FTEs for physicians and 269 for aircraft mechanics/engineers in case of either option 16B or 16C.

### 2.6.6.3 Other social impacts

In paragraph 2.6.3 it has however been estimated that option 16A could lead to saving some LPL lives per year and that option 16C would be even better. New LPL holders will, in the majority of the cases, be young people. On the contrary, option 16B might lead to more dead young people beginning their aviation experience.

This has to be translated into socially negative qualitative terms for option 16B.

Furthermore, while both options 16A and 16C are positive in the above respect, it has to be noted that the latter allows, for less time and cost, young people to start enjoying the experience of flying, and so decide, after direct personal experience, whether to invest more in their pilot's qualification. This is an additional social advantage of option 16C in comparison with the others.

### 2.6.6.4 Summary of social impact

The orders of magnitude of the additional jobs estimated in 2.6.6.1 and 2.6.6.2 above can be summarised in Table 50 below:

FTEs	16A	16B	16C
	No Basic LPL	Less training and same privileges	Less training and less privileges
national authorities	8	15	15
EASA	0	0	0
<b>TOTAL newly created jobs in the public sector</b>	<b>8</b>	<b>15</b>	<b>15</b>
Flight instructors/examiners	259	315	315
Physicians	3	5	5
Aircraft mechanics/engineers	329	537	537
<b>TOTAL newly created jobs in the private sector</b>	<b>591</b>	<b>857</b>	<b>857</b>
<b>TOTAL newly created jobs</b>	<b>599</b>	<b>872</b>	<b>872</b>

**Table 50: Social impact in terms of FTEs**

From the above Table 50 it can be observed that option 16A could create almost 600 jobs, mainly in the private aviation sector, while either option 16B or 16C may lead to 872 additional jobs, again mainly in the private aviation sector.

The above quantitative considerations, and the qualitative considerations in 2.6.6.3, are then translated into scores for the applicable result indicators in following Table 51:

Specific Objectives	Scoring of options		
	16A	16B	16C
	No Basic LPL	Less training and same privileges	Less training and less privileges
introduce LPL	2	0	3
LPL privileges	2	- 1	3
Number of pilot licences	1	2	2
Basic level for LPL	1	3	3
<b>TOTAL</b>	<b>6</b>	<b>4</b>	<b>11</b>
<b>AVERAGE SCORE (Tot/4 quantified parameters)</b>	<b>1.5</b>	<b>1</b>	<b>2.75</b>
<b>WEIGHTED AVERAGE (Score x 2 for social impact)</b>	<b>3</b>	<b>2</b>	<b>5.5</b>

**Table 51: Scoring of the social impact**

In conclusion, option 16C scores much better than either 16A or 16B in social terms.

#### *2.6.7 Regulatory harmonisation*

##### *2.6.7.1 Compatibility with other EU regulations*

No issues of compatibility with other EU rules have been identified for any of the three options under consideration.

##### *2.6.7.2 Compatibility with ICAO standards*

The minimum level of pilot licence standardised by ICAO is the PPL. The LPL is not contemplated by ICAO, since it is not significantly relevant for international aviation. This would mean that, in accordance with the Chicago Convention, holders of an EU LPL will need the permission of third countries before flying over their territory.

However, in ICAO Annex 1 there is always a proportion between the training requirements and the privileges granted to the pilots.

In the case of option 16A (i.e. no basic LPL) there would be acceptable compatibility with the spirit of the ICAO provisions: i.e. minimum 30 hours of training in flight instead of 40, but privileges strictly limited to "non-complex" aircraft, while PPL can fly, according to ICAOP Annex 1, any class or type of aircraft, providing that this is not for commercial purposes.

Option 16B has to be considered negative in respect of compatibility with the proportionality required by ICAO between the training requirements and the privileges, since it will permit the same privileges as option 16A with less training.

Finally, option 16C would be even better than 16A, since it introduces one more step for proportionate increase of requirements and privileges.

##### *2.6.7.3 Comparison with the FAA rules*

Recreational pilots are also contemplated by the FAA Part 61 in the USA<sup>71</sup> and therein also there is implicitly a "Basic" level (i.e. 30 hours of minimum flight training required, but no privilege to fly cross-country). However according to this "Basic" level recreational pilots in the USA may fly at greater

<sup>71</sup> <http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?c=ecfr&sid=40760189a03dfea0b501608f33820a45&rgn=div5&view=text&node=14:2.0.1.1.2&idno=14#14:2.0.1.1.2.4.1.1>

distances from the aerodrome (50 NM instead of 50 km), while there is no limit for the MTOM of the aircraft. In other words the FAA requires more training for the "Basic" level, but grants more privileges.

Therefore holders of the Basic EU LPL may not be always authorized to act as pilot in command in the USA, which applies to options 16B and 16C. They have therefore to be considered slightly negative in this respect.

On the other side option 16A (i.e. no Basic LPL) will be closer to the FAA "recreational pilot licence.

#### 2.6.7.4 Summary of impact on regulatory harmonisation

The above considerations are then translated into scores related to the applicable specific objectives in following Table 52:

Specific Objectives	Scoring of options		
	16A	16B	16C
	<b>No Basic LPL</b>	<b>Less training and same privileges</b>	<b>Less training and less privileges</b>
Compatibility with other EU rules	0	0	0
Compliance with ICAO standards	1	- 1	2
Harmonise EASA and FAA rules	1	- 1	- 1
<b>TOTAL</b>	<b>2</b>	<b>- 2</b>	<b>1</b>
<b>AVERAGE SCORE (Tot/2 quantified parameters)</b>	<b>1</b>	<b>- 1</b>	<b>0.5</b>
<b>WEIGHTED AVERAGE (Score x 1 for regulatory harmonisation)</b>	<b>1</b>	<b>- 1</b>	<b>0.5</b>

**Table 52: Scoring of impact on regulatory harmonisation**

Therefore option 16B has to be considered slightly negative in terms of global harmonisation, while 16A and 16C have both a slightly positive score.

#### *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 Basic LPL (A) and basic LPL (H)		16A	16B	16C
Key Performance Area	Weight	No Basic LPL	Less training and same privileges	Less training and less privileges
Safety	3	5.25	- 6.75	5.25
Environmental	3	- 3	- 3	- 3
Economic	2	1.34	- 2	4
Social	2	3	2	5.5
Global harmonisation	1	1	- 1	0.5
<b>WEIGHTED TOTAL</b>		<b>7.59</b>	<b>- 10.75</b>	<b>12.25</b>

**Table 53: Multi Criteria Analysis for the Basic LPL (A) and basic LPL (H)**

**From Table 52 above one can observe that** option 16B is not acceptable from the safety point of view and negative from other perspectives, while **that option 16C scores about 60% better than option 16A.**

In particular, option 16C:

- Has a positive score for the safety;
- Is slightly negative for environment (i.e. more hours flown), although in quantitative terms this is marginal over the total of aviation environmental impact and, moreover, the greenhouse gas is released in the lower layers of the atmosphere;
- Does not increase the cost for taxpayers, while implying a proportionate transfer of money from the applicants towards the competent authorities (not EASA) in order to obtain their licences;

- Creates additional demand in the internal market;
- Creates around 850 additional jobs in the private aviation sector (and very few in the competent authorities);
- Is acceptable in terms of regulatory harmonisation.

## **2.7 Extension of the LPL privileges to other types or classes**

### *2.7.1 Alternative options*

Different systems can be implemented for extending the privileges of the LPL holder, to other classes or types of aircraft, in the same category, than those used in the proficiency check.

In the case of the PPL for (A), (H) and (As) ICAO SARPs in Annex 1 require that in order to extend the privileges of the licence to other classes or types of aircraft than the ones used for the proficiency check for the issue of the licence, the pilot has always to obtain a specific type or class rating.

In turn in ICAO terms, "rating" means an authorization entered on or associated with a licence and forming part thereof, stating special conditions, privileges or limitations pertaining to such licence. In order to obtain it a pilot shall have:

- **gained, under appropriate supervision (i.e. with an instructor), experience** in the applicable type of aircraft;
- **demonstrated the skill (i.e. examination in flight)** and knowledge required for the safe operation of the applicable type of aircraft;
- **applied to the competent authority** to obtain the rating.

This system has for instance been proposed by the Agency, for the extension of the privileges of the LPL(H), for which no classes are identified. The pilots' privileges will in fact initially be limited to the specific type of helicopter in which the skill test was taken. This limitation may be withdrawn when the LPL (H) pilot has positively passed a skill test, after having complied with additional training requirements:

- 5 hours of dual instruction flight time, including:
  - (1) 15 takeoffs and landings; and
  - (2) 15 supervised solo takeoffs and landings.

Of course this process to extend the privileges represents a cost for pilots, requiring specific training, examination and administrative expenditure for each additional rating. Hence this is justified when the difficulties of transitioning to a new type of aircraft imply a significant safety risk to be mitigated through training and examination. This indeed was deemed to be the case for LPL (H).

On the contrary, this process might not be justified in some cases for LPL (A) licence holders, who fly light and simple aeroplanes, with very similar characteristics. Equally it may not be justified for LPL (S), including authorizations to different launch methods, and/or LPL (B). And in fact, in the case of balloons and sailplanes, even ICAO does not require additional ratings to extend privileges of the PPL to other types of aircraft within the same category (in ICAO there are no defined classes for sailplanes or balloons).

In NPA 2008-17 the Agency has identified aircraft classes for LPL, as presented in Table 53 below:

<b>Aircraft classes for LPL</b>			
<b>Aeroplanes</b>	<b>Helicopters</b>	<b>Sailplanes</b>	<b>Balloons</b>
Single engine piston	No classes identified	(powered) Sailplanes	Hot-air balloons (max 4,000 m <sup>3</sup> )
			Hot-air air-ships (max 4,000 m <sup>3</sup> )
Touring Motor Glider (TMG)		TMG	Gas balloons (max 1,200 m <sup>3</sup> )

**Table 54: Aircraft classes for LPL in EASA**

Taking the above into consideration, the Agency has therefore identified the following possible alternatives for the potential extension of the respective privileges of LPL (A), (S) and (B), to other types or classes of aircraft in the same category.



- **Option 13A:** Establish a system **modelled on that standardised by ICAO for the PPL:** i.e. **new rating required for each new class or type** of aircraft in the same category,
- **Option 13B:** Create a new system whereby the privileges of the licence **automatically include the privileges to fly all types** of aircraft **in any class**
- **Option 13C:** Create a new system for the **controlled extension** of privileges (or different launch methods) to other types of aircraft within the same class (e.g. all single engine piston aeroplanes below 2000 Kg MTOM).

The different training/examination burden represented by each option is presented in Table 55:

Requirements		13A			13B			13C		
		Always new rating			Automatic extension			Controlled extension		
		(A)	(S)	(B)	(A)	(S)	(B)	(A)	(S)	(B)
Hours dual instruction in flight	to extend to a new type	3	6	5*	0	0	0	0	0	0
	to extend to a new class	3	6	5*	0	0	0	3	6	5***
Examination (Skill test)	to extend to a new type	YES	YES	YES	No	No	No	No	No	No
	to extend to a new class	YES	YES	YES	No	No	No	YES	YES	YES
Application for new rating	to extend to a new type	YES	YES	YES	No	No	No	No	No	No
	to extend to a new class	YES	YES	YES	No	No	No	YES	YES	YES

\* flights

\*\* launches

\*\*\* in the case of an extension to hot-air airships: hours/for all other balloon extensions: flights

**Table 55: Different requirements for the three options**

## 2.7.2 Target group and number of entities concerned

### 2.7.2.1 Competent Authorities

According to Article 7.6(a) of the Basic Regulation, the Commission has to adopt supplementing measures (i.e. implementing rules) also for the different ratings for pilots' licences, adequate for the different types of activities performed. As the licences, also the ratings (or any required extension) are issued by competent authorities at national level. In other words, **whichever is the preferred option there will be no impact at all on the tasks, budget or staff of the Agency.**

The number of affected competent authorities is therefore, in case of either option 13A or 13C, **equal to number of EASA Member States: 27 + 4 = 31**. Vice versa in the case of option 13B, since no new ratings, or other formal approval or authorization or extension, will be required, none of the authorities will be involved.

### 2.7.2.2 Affected LPL (A), (S) and (B)

In paragraph 2.6.2.2 above it has been estimated that about 12,000 new LPL (A) licences could be issued in the EU 27 + 4, during the first five years after approval of the EASA implementing measures, as a direct impact of them: **in total 60,000 LPL (A).**

It is assumed that all of them, in average, will require extension to a new type twice during their operational life: **120,000 new type ratings required for LPL (A) in option 13A**. Furthermore it is assumed that about 30% of them will require to extend their privileges to a different class in the same category (e.g. from TMG to single engine piston aircraft) = **40,000 new class rating for LPL (A) in same option 13A.**

In paragraph 2.3.1 above the number of **sailplane pilots in the EU 27 + 4 has been estimated in the order of magnitude of 70,000**. The vast majority of them hold a SPL, with associated medical

requirements, as defined by ICAO which does not differentiate between PPL (S) and CPL (S). Herein this SPL is considered equivalent to the proposed PPL (S) and it is then assumed that, in five years:

- 20% of the existing SPL will prefer to revert to the cheaper (and less medically demanding) LPL (S) = 14,000 conversions from SPL to LPL (S);
- A slightly greater number of (mostly young) people, will exploit the opportunity offered by a quicker and cheaper LPL (S) = **16,000 new LPL (S) licences**.

In other words it is estimated that **in the EU 27 + 4, in five years, there will be 30,000 LPL (S) licences. But only the 16,000 new LPL(S) licences must be considered** for the following calculation of additional ratings because the SPL holders (if they decide not to revert their licence) will require the same amount of ratings anyway.

Among the latter, in case of **option 13A**:

- **8,000 (i.e. 50%)** will require, during the said five years, a new rating (i.e. in Option 13A) to **fly a different sailplane type** (the Agency is aware that this option will be a departure from present practice, but nevertheless desires to analyse its pros and cons versus the other options);
- **3,200 (i.e. 20%)** will require a **class rating for TMG**.

Finally for option 13A, it has to be remembered that in said paragraph 2.3.1 the number of balloon pilots in the EU 27 + 4 has been estimated in about 9,000. Again almost the totality of them holds a BPL as defined by ICAO (no difference between PPL (B) and CPL (B)), which is considered equivalent to PPL (B) as proposed by the Agency.

Among those again, it is assumed that about 20% will revert to LPL (B) (i.e. 1,800), while a slightly greater number of young people will acquire the LPL (B) in five years (i.e. 2,200) for a total **in the EU 27 + 4, in five years, of about 4,000 LPL (B) licences. Here again only the 2,200 new licences must be considered** as the reverted LPL licences must be excluded from the calculation (as explained above for the SPL – LPL(S) conversions).

And among them, in case of **option 13A**:

- **1,100 (i.e. 50%)** will require, during the said five years, a new rating (i.e. in Option 13A) to **fly a different balloon type** (the Agency is aware that this option will be a departure from present practice, but nevertheless desires to analyse its pros and cons versus the other options);
- **440 (i.e. 20%)** will require a **rating for a different class** (e.g. from hot-air to gas).

In case of **option 13B**, LPL (A), (S) and (B) will get immediately and automatically the privileges to fly any other aircraft type of any class in their respective category. E.g. balloon pilots having passed their initial skill test on a gas balloon will have the privilege to fly also hot-air airships without further training, test or authorisation. Equally sailplane pilots, e.g. having passed their skill test on a non-motorized aircraft, will be automatically entitled to fly TMGs. In summary, in **option 13B** no new rating will be required to fly any type of aircraft in any class = **zero LPL affected**.

Finally, to estimate the number of LPL (A), (S) and (B) affected by **option 13C**, it has to be noted that in this case, **no type rating** will be required (e.g. like today for (B) and (S)), but **only an extension of privileges for different classes**

The different training/examination burden represented by each of the three selected options is presented in Table 56 below:

Number of affected pilots		13A	13B	13C
Total LPL	Requiring extension of privileges	Always new rating	Automatic extension to all classes	Controlled extension to types
(A): 60,000	new type	120,000	0	0
	new class	40,000	0	40,000
(S): 16,000	new type	8,000	0	0
	new class	3,200	0	3,200
(B): 2,200	new type	1,100	0	0
	new class	440	0	440
<b>78,200</b>	<b>TOTAL</b>	<b>193,740</b>	<b>0</b>	<b>64,640</b>

**Table 56: Number of pilots affected by different options**2.7.2.3 Directly generated employment

It is assumed herein that there will be neither direct impact on the physicians, nor on aircraft/engine maintenance engineers, deriving from any of the possible options to extend the privileges of LPL.

On the contrary the major impact will be on flight instructors and examiners. For these categories the number of involved entities (not in terms of head count but in terms of Full Time Equivalents (FTEs) is estimated immediately below.

Throughout the rest of present RIA the Agency assumes that **1 FTE represents in average:**

- **200 effective man/days of labour** (i.e. 356 days in the year – 104 Saturdays and Sundays – 30 days of leave/Bank holidays – 2 days sick leave – 20 days spent for administrative/routine overhead tasks, which do not really represent the “product” of the labour);
- **1500** (i.e. 200 x 7.5 hours/day) effective **working hours/year**;
- Out of which **500 flying hours/year** in the case of professional pilots (including flight instructors and examiners); in terms of FTEs, whether this 500 flying hours are produced by one person (for whom this will be a full time job) or by a number of different physical persons (e.g. part time instructors during the week end) is irrelevant.

The minimum required instruction flight hours (or launches, or flights for balloons) to be considered for one individual seeking one extension of privileges, based on the proposals in mentioned NPA 2008-17, have been presented in paragraph 2.7.1 above, as a function of the three options under consideration.

Taking into account the consideration that only 50% of the instructors providing this kind of flight instruction will receive any remuneration for their work (see 2.6.2.3) and combining these just mentioned figures, the number of new FTEs required by flight instructors, are estimated in Table 57 below:

OPTION	Rating (or authorized extension)	New ratings		Instr. flying hours/ pilot	Instruction flying hours/year	Estimated Number of FTEs for Instructors (50%)
		in 5 years	Per year			
<b>13A</b> Always new rating	Type LPL (A)	120,000	24,000	3	72,000	
	Class LPL (A)	40,000	8,000	3	24,000	
	Type LPL (S)	8,000	1,600	6	9,600	
	Class LPL (S)	3,200	640	6	3,840	
	Type LPL (B)	1,100	220	5**	1,100	
	Class LPL (B)	440	880	5**	440	
	<b>TOTAL</b>	<b>172,740</b>	<b>34,548</b>	<b>//</b>	<b>110,980</b>	<b>111</b>
<b>13B</b> Automatic extension						
	<b>TOTAL</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>13C</b> Controlled extension	Type LPL (A)	0	0	0	0	
	Class LPL (A)	40,000	8,000	3	24,000	
	Type LPL (S)	0	0	0	0	
	Class LPL (S)	3,200	640	6	3,840	
	Type LPL (B)	0	0	0	0	
	Class LPL (B)	440	88	5**	440	
	<b>TOTAL</b>	<b>43,640</b>	<b>8,728</b>	<b>//</b>	<b>28,280</b>	<b>28</b>

\* the minimum figure from paragraph 2.7.1 is considered from here onwards, to be conservative in the estimations.

\*\* based on an estimated average flight time of one hour for a balloon training flight

**Table 57: Number of flight instructor FTEs**

Along the same lines it is assumed (and again this is optimistic since in a number of cases the exam in flight will have to be repeated) that for each rating or extension, 1 flying hour (or one flight except for

exams in sailplanes where up to three flights have to be conducted) with one examiner is required. Therefore, the number of new FTEs required by examiners is estimated in Table 58 below:

OPTION	Rating (or authorized extension)	New ratings		Test flying hours/ pilot	Test flying hours/year	Estimated Number of FTEs for Examiners
		in 5 years	Per year			
<b>13A</b> Always new rating	Type LPL (A)	120,000	24,000	1	24,000	
	Class LPL (A)	40,000	8,000	1	8,000	
	Type LPL (S)	8,000	1,600	1	1,600	
	Class LPL (S)	3,200	640	1	640	
	Type LPL (B)	1,100	220	1	220	
	Class LPL (B)	440	88	1	88	
	<b>TOTAL</b>	<b>172,740</b>	<b>34,548</b>	<b>//</b>	<b>34,548</b>	<b>69</b>
<b>13B</b> Automati c extension						
	<b>TOTAL</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>13C</b> Controlle d extension	Type LPL (A)	0	0	0	0	
	Class LPL (A)	40,000	8,000	1	8,000	
	Type LPL (S)	0	0	0	0	
	Class LPL (S)	3,200	640	1	640	
	Type LPL (B)	0	0	0	0	
	Class LPL (B)	440	88	1	88	
	<b>TOTAL</b>	<b>43,640</b>	<b>8,728</b>	<b>//</b>	<b>8,728</b>	<b>17</b>

**Table 58: Number of examiner FTEs**

#### 2.7.2.4 Summary of affected entities

In conclusion, on the basis of the information in sub-paragraphs 2.7.2.1, 2.7.2.2 and 2.7.2.3 above, the number of concerned entities is estimated in Table 59 below:

OPTION		Estimated Number			
Id.	Description	Auth.	LPL	FTEs	
				FI	Exam.
<b>13A</b>	Always new rating	<b>31</b>	<b>172,740</b>	<b>111</b>	<b>69</b>
<b>13B</b>	Automatic extension	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>13C</b>	Controlled extension	<b>31</b>	<b>43,640</b>	<b>28</b>	<b>17</b>

**Table 59: Number of affected entities for the extension of the privileges of LPL**

#### 2.7.3 Safety impact

For SPL and BPL, no need for type rating has been determined in ICAO Annex 1, but therein there is the requirement for class rating: i.e. an approach identical to option 13C under consideration. Equally, ICAO Annex 1 does not require type rating for PPL (A) in case of single-engine and single pilot aircraft.

Therefore **option 13C**, which follows the same approach (i.e. class rating but not type rating) is not less safe than present situation. However an **additional safety benefit** can be envisaged, since the scope of the EASA rules and their legal clarity and uniform application, goes beyond the scope of ICAO standards: the latter limited to international aviation.

On the contrary, and bearing in mind that the largest proportion of yearly accidents in the EU (ref. par. 2.3.2.9 above) affects "non-complex" motor powered aeroplanes or sailplanes, **option 13B**, which will

allow e.g. a sailplane pilot to take off on board a TMG without any formal training or check or authorization, has to be considered **less safe** than the present situation.

Finally, **option 13A**, which imposes type ratings even to pilots of balloons, sailplanes and the light and simple single-engine piston aeroplanes, departing from presently established practice, has to be considered potentially **the safest**.

The above qualitative considerations, versus the applicable specific objectives, lead to the scores presented in following Table 60:

Specific Objectives	Scoring of options		
	13A	13B	13C
	Always new rating	Automatic extension	Controlled extension
LPL privileges	3	- 2	3
Additional pilot ratings	3	- 2	0
<b>TOTAL</b>	<b>6</b>	<b>- 4</b>	<b>3</b>
<b>AVERAGE SCORE (Tot/2 quantified parameters)</b>	<b>3</b>	<b>- 2</b>	<b>1.5</b>
<b>WEIGHTED AVERAGE (Score x 3 for safety)</b>	<b>9</b>	<b>- 6</b>	<b>4.5</b>

**Table 60: Scoring of the safety impact**

#### *2.7.4 Environmental impact*

**All the three options under consideration are considered environmentally neutral.** In fact the extension of privileges of the LPL affects recreational pilots which have already got their initial licence and their first rating. These pilots normally fly (often during week ends in summer) within the limits of their spare time and money available. In other words the few flying hours which they could spend for formal instruction and skill test, would be flown anyway, in quantitative terms, for recreational purposes.

#### *2.7.5 Economic Impact*

##### 2.7.5.1 Regulatory cost for the Agency

Whichever option is selected, the tasks of the Agency in respect of rulemaking, safety analysis and standardisation will remain unchanged, with respect to today's situation.

No certification/role at all is established for the Agency in respect of pilot licences. In other words there is not economic impact on the Agency, which means no financial flow from either the LPL or the taxpayers towards it.

##### 2.7.5.2 Additional income for the competent authorities

Normally, competent authorities charge not only for the personnel licences which they issue, but also for the inclusion, renewal or variation of a rating. In particular the UK CAA, in August 2008, was informing stakeholders that the administrative charge for the second or subsequent class rating variation in an NPPL (equivalent to the EU LPL) was 34 £<sup>72</sup>. This charge covers the purely administrative costs inside the UK CAA, since the application shall be "supported by a recommendation made by a person approved by the UK CAA for the purpose". In other words the cost of the examination in flight is not included in the mentioned charge.

On 07 August 2009 the exchange rate was 0.7925 £ for 1 €.

Therefore 34 £ = **around 43 € to be paid by the applicant for a new rating or authorization aiming at extending the privileges of a LPL.**

It is assumed that, in terms of order of magnitude, similar charges will be established by all the competent authorities in the EU 27 + 4.

<sup>72</sup> <http://www.caa.co.uk/docs/1352/PLS%20Enclosure%200708.pdf>

Therefore, the additional income for the authorities deriving from the number of applications for new ratings or authorizations can be estimated in Table 61 below:

OPTION	Rating (or authorised extension)	New ratings		Additional income	
				Administrative charge for one application	TOTAL additional income
		in 5 years	Per year	€	K€
<b>13A</b> Always new rating	Type LPL (A)	120,000	24,000	43	
	Class LPL (A)	40,000	8,000	43	
	Type LPL (S)	8,000	1,600	43	
	Class LPL (S)	3,200	640	43	
	Type LPL (B)	1,100	220	43	
	Class LPL (B)	440	88	43	
	<b>TOTAL</b>	<b>172,740</b>	<b>34,548</b>	<b>43</b>	<b>1,485</b>
<b>13B</b> Automatic extension					
	<b>TOTAL</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>13C</b> Controlled extension	Type LPL (A)	0	0	43	
	Class LPL (A)	40,000	8,000	43	
	Type LPL (S)	0	0	43	
	Class LPL (S)	3,200	640	43	
	Type LPL (B)	0	0	43	
	Class LPL (B)	440	88	43	
	<b>TOTAL</b>	<b>43,640</b>	<b>8,728</b>	<b>43</b>	<b>375</b>

**Table 61: Additional income for authorities to include new ratings or extensions**

It is herein assumed that in any of the three options under consideration, the charges paid by the applicants will cover 100% of the internal costs of the authorities to administer the ratings, extensions of the privileges and their variations. Therefore there is no financial flow from the taxpayers to the authorities in relation to any of the three options under consideration. Should one or more States decide differently, this will not be Community responsibility and therefore it does not belong to the present RIA.

#### 2.7.5.3 Additional demand

In paragraph 2.7.2.4 above the number of affected entities has been estimated for the three options under consideration. These entities included direct employment estimated in terms of FTEs for:

- Flight instructors; and
- Flight examiners.

Herein it is assumed again that, for these categories of professionals, the cost on one FTE is in the order of 50,000 €. **The fact that some instructors or examiners may work free of charge for their Aero Club as explained already in 2.6.2.3 and 2.7.2.3, is very difficult to quantify and does not affect the results of the present RIA, whose main purpose is to comparatively assess different options, using the same assumptions for each of them.** The following calculation is based therefore again on the assumption, that around 50 % of these instructors will receive remuneration for this kind of instruction work.

Therefore, the total additional demand generated by the new LPL can be estimated as in Table 62 below:

OPTION	Additional demand					
Id.	Description	FI		Exam.		TOTAL
		FTEs	K€	FTEs	K€	K€
13A	Always new rating	111	5,550	69	3,450	9,000
13B	Automatic extension	0	0	0	0	0
13C	Controlled extension	28	1,400	17	850	2,250

**Table 62: Additional demand created**

In turn it is assumed that this additional demand will generate income for States, on the basis of income tax, value added tax or other, in the order of 20%.

Therefore the additional tax generated by is then:

- 1,800 k€/year in the case of option 13A;
- 0 in case of option 13B;
- 0,450 k€/year in case of option 13C.

#### 2.7.5.4 Safety dividend

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.

Nevertheless in paragraph 2.3.2.9 the number of accidents for "non complex" motorized aeroplanes (typically flown by the LPL (A) has been estimated, as well as the number of accidents for sailplanes and balloons. In subsequent paragraph 2.3.2.10 the cost of fatal and non-fatal aviation accidents has been estimated as well.

Furthermore, in 2.6.3 it has been observed that option 13C could bring benefits in safety terms and 13A even more. On the contrary, option 13B is significantly negative. **It can therefore be assumed that 13C will have a marginal positive effect on safety of the order of 1% (for this segment of aviation there are ample margins to improve safety), 13A a more significant positive effect (i.e. 5%) while 13B will have a negative effect of -5%.**

The above coarse estimation can be translated in terms of avoided accidents, victims and costs, as in Table 63 below:

Parameter	Baseline*	13A	13B	13C
		Always new rating	Automatic extension	Controlled extension
<b>Safety effect</b>		<b>5% better</b>	<b>- 5% (worse)</b>	<b>1% better</b>
<b>Accidents/year linked to FCL</b>	357.5	339.6	375.4	353.9
<b>Difference in accidents per year</b>		- 17.9	+ 17.9	- 3.6
<b>Fatal accidents/year linked to FCL</b>	45.5	43.2	47.8	45
<b>Difference in fatal accidents per year</b>		- 2.3	+ 2.3	- 0.5
<b>Victims/year</b>	63	60	66	62
<b>Difference in victims per year</b>		- 3	+ 3	- 1
<b>Cost of injuries (k€)</b>	8,283			
<b>Cost of substantial damage (k€)</b>	2,941			
<b>Cost of investigation (k€) non-fatal</b>	2,765			
<b>TOTAL cost non-fatal accidents (k€)</b>	<b>13,989</b>	<b>13,290</b>	<b>14,688</b>	<b>13,850</b>
<b>Difference in cost of non-fatal accidents per year</b>		<b>- 699</b>	<b>+ 699</b>	<b>- 139</b>

<b>Cost of fatalities (k€)</b>	145,590			
<b>Cost of destroyed aircraft (k€)</b>	5,614			
<b>Cost of investigation fatal accidents</b>	756			
<b>TOTAL cost fatal accidents (k€)</b>	<b>151,960</b>	<b>144,362</b>	<b>159,558</b>	<b>150,441</b>
<b>Difference in cost of fatal accidents per year</b>		<b>- 7,598</b>	<b>+ 7,598</b>	<b>- 1,519</b>
<b>GRAND TOTAL (k€)</b>	<b>165,949</b>	<b>157,652</b>	<b>174,246</b>	<b>164,291</b>
<b>Total Difference (k€)</b>		<b>- 8,297</b>	<b>+ 8,297</b>	<b>- 1,658</b>

\* sailplanes plus balloons plus "non-complex" motorised aeroplanes

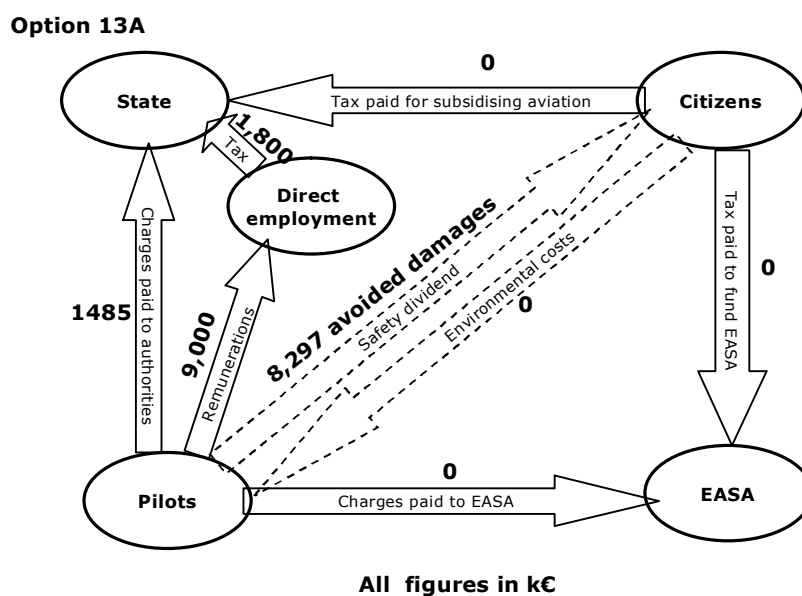
**Table 63: Safety dividend (accidents linked to FCL factors)**

#### 2.7.5.5 Environmental burden

For the considerations exposed in 2.7.4 there is no economic burden deriving from the environmental impact of any of the three options under consideration.

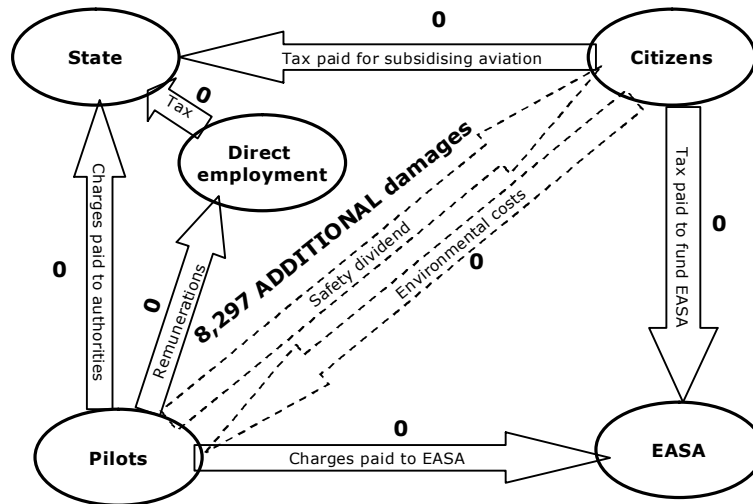
#### 2.7.5.6 Summary of economic impact

The economic flows estimated above can be presented in the Figures 9, 10 and 11 below:

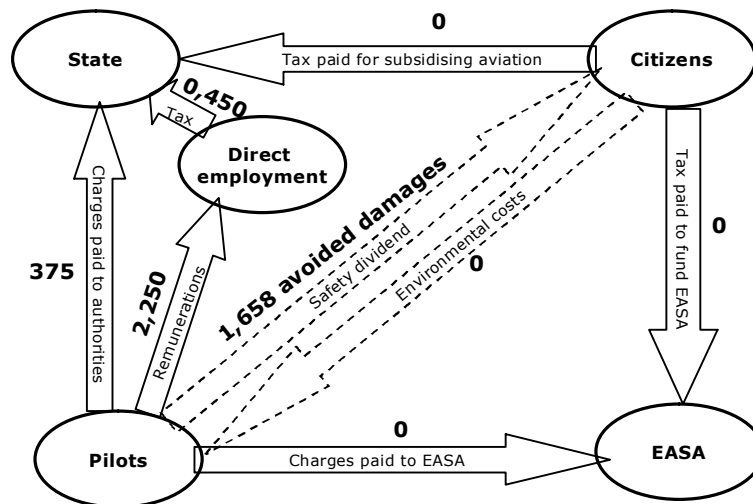


**Figure 9: Economic flows for option 13A**



**Option 13B**

All figures in k€

**Figure 10: Economic flows for option 13B****Option 13C**

All figures in k€

**Figure 11: Economic flows for option 13C**

The orders of magnitude estimated in the three graphs above can be summarised in Table 64 below:

Parameter	13A	13B	13C
	Always new rating	Automatic extension	Controlled extension
From taxpayers to national authorities (k€)	0	0	0
From taxpayers to EASA	0	0	0
<b>Total from taxpayers to fund aviation (k€)</b>	<b>0</b>	<b>0</b>	<b>0</b>
From applicants to national authorities	- 1,485	0	- 375
From applicants to EASA	0	0	0
<b>Total from applicants to authorities</b>	<b>- 1,485</b>	<b>0</b>	<b>- 375</b>
<b>TOTAL from citizens to public sector</b>	<b>- 1,485</b>	<b>0</b>	<b>- 375</b>
Safety dividend	8,297	- 8,297	1,658
Environmental burden	0	0	0
<b>Benefit for society (k€)</b>	<b>8,297</b>	<b>- 8,297</b>	<b>1,658</b>
Additional demand	9,000	0	2,250
Tax generated by additional demand	1,800	0	0,450

Table 64: Economic flows

In other words:

- No money at all will flow from citizens (taxpayers or applicants) to the Agency for any of the options under consideration;
- No money at all will flow from taxpayers to the aviation competent authorities for any of the options under consideration;
- 375 k€/year will flow from applicants to the aviation competent authorities for option 13C, to pay for the services they require; 1,485 k€/year (more than three times as much) in case of option 13A and zero in case of 13B;
- In case of **option 13A** there will be a **net benefit for the society (safety benefit – administrative costs) of around 8.3 M€/year**; a **net benefit of 1.6 M€/year in case of option 13C** and a **damage of about 8.3 M€/year in case of option 13B**;
- Furthermore, option 13A will generate around 9 M€/year of additional demand (and therefore about 1.8 M€/year additional tax), while 13B will generate no additional demand at all; option and 13C will generate around 2.2 M€/year of additional demand (and therefore close to 0.45 M€/year additional tax).

The monetary terms and the considerations presented above can be translated into scoring, versus the applicable specific objectives, as in the following Table 65:

Specific Objectives	Scoring of options		
	13A	13B	13C
	Always new rating	Automatic extension	Controlled extension
LPL privileges	0	- 3	1
Additional pilot ratings	- 2	0	2
<b>TOTAL</b>	<b>- 2</b>	<b>- 3</b>	<b>3</b>
<b>AVERAGE SCORE (Tot/2 quantified parameters)</b>	<b>- 1</b>	<b>- 1.5</b>	<b>1.5</b>
<b>WEIGHTED AVERAGE (Score x 2 for economy)</b>	<b>- 2</b>	<b>- 3</b>	<b>3</b>

Table 65: Scoring of the economic impact

## 2.7.6 Social Impact

### 2.7.6.1 Competent authorities

In paragraph 2.7.5.2 it has been estimated that option 13A will imply an additional income of 1,485 k€/year for the competent authorities, to pay for the services associated with the inclusion of new ratings or extension of privileges for the LPL (A), (S) and (B). Nothing has been estimated in case of option 13B and 375k€/year, in case of option 13C.

Assuming that **for the authorities one FTE represents 60,000 €/year**, this translates (since new services are demanded) in additional employment in the public sector:

- $1,485/60 = \text{around } 25 \text{ FTEs in case of option 13A};$
- **0 FTEs for option 13B;** and
- $375/60 = \text{around } 6 \text{ FTEs in case of option 13C}.$

In any of the three options there are no tasks or jobs inside the Agency.

#### 2.7.6.2 FTEs deriving from additional demand

The number of FTEs deriving from additional demand has already been estimated in paragraph 2.7.2.3 above, as:

- 111 new FTEs for flight instructors and 69 new FTEs for flight examiners, in case of option 13A;
- No additional demand in case of 13B; and
- 28 new FTEs for flight instructors and 17 new FTEs for flight examiners in case of option 13C.

#### 2.7.6.3 Other social impacts

In paragraph 2.7.3 the safety impact of the different options was already discussed. Additionally it could be estimated that both options 13A and 13C could lead to saving very few LPL lives per year (13A more than 13C), while option 13B could cause additional, if even a very limited quantity, new victims. New LPL will in the majority of the cases be by young people. This has to be translated into socially negative qualitative terms for option 13B.

Furthermore, while both options 13A and 13C are positive from the safety perspective, it has to be noted that the former will increase the cost for pilots of general aviation around four times in comparison to the latter. Furthermore these additional costs will be paralleled by the administrative burden linked to obtaining formal approvals by the authorities, and in particular to obtaining formal authorizations (e.g. type rating for every new simple single piston engine light aeroplane) which are not in today's practice.

In other words these additional costs and bureaucracy may completely jeopardize the achievement of the goal which the legislator had desired when introducing the LPL. It can also be remembered that in 2.6.5.2 the cost on the pilots to apply for the issuance of LPL (A) was estimated in 874 k€/year, while, in case of option 13A, the cost for inclusion of new ratings would be almost twice as much. In conclusion option 13A, cannot be considered positive in social terms, despite the potential number of created FTEs.

#### 2.7.6.4 Summary of social impact

The orders of magnitude of the additional jobs estimated in 2.7.6.1 and 2.7.6.2 above can be summarised in Table 66 below:

FTEs	13A	13B	13C
	Always new rating	Automatic extension	Controlled extension
national authorities	25	0	6
EASA	0	0	0
<b>TOTAL newly created jobs in the public sector</b>	<b>25</b>	<b>0</b>	<b>6</b>
Flight instructors	111	0	69
Flight examiners	28	0	17
<b>TOTAL newly created jobs in the private sector</b>	<b>139</b>	<b>0</b>	<b>86</b>
<b>TOTAL newly created jobs</b>	<b>164</b>	<b>0</b>	<b>92</b>

**Table 66: Social impact in terms of FTEs**

From above Table 66 it can be observed that option 13A could create more than 160 jobs, mainly in the private aviation sector, while option 13B will create no jobs at all. Option or 13C may lead to additional 92 jobs, again mainly in the private aviation sector.

The above new jobs and the qualitative considerations in 2.7.6.3 are then translated into scores versus the applicable specific objectives in following Table 67:

Specific Objectives	Scoring of options		
	13A	13B	13C
	Always new rating	Automatic extension	Controlled extension
LPL privileges	- 2	3	2
Number of pilot licences	- 3	3	2
Additional pilot ratings	2	1	2
<b>TOTAL</b>	<b>- 3</b>	<b>7</b>	<b>6</b>
<b>AVERAGE SCORE (Tot/3 quantified parameters)</b>	<b>- 1</b>	<b>2.33</b>	<b>2</b>
<b>WEIGHTED AVERAGE (Score x 2 for social impact)</b>	<b>- 2</b>	<b>4.7</b>	<b>4</b>

**Table 67: Scoring of the social impact**

#### *2.7.7 Regulatory harmonisation*

##### *2.7.7.1 Compatibility with other EU regulations*

No issues of compatibility with other EU rules have been identified for any of the three options under consideration.

##### *2.7.7.2 Compatibility with ICAO standards*

The LPL is not contemplated by ICAO Annex 1, since it is not greatly significant for international civil aviation. However the philosophy of that Annex is that for the simpler aircraft a class rating is sufficient, without the obligation (and connected burden also in administrative terms) of specific type ratings for sailplanes, balloons and light single piston engine aeroplanes.

Exactly the same philosophy is followed by option 13C. On the contrary 13B relaxes the requirements by allowing automatic immediate extension to any class in a category of aircraft.

Finally option 13C introduces new obligations for pilots, which are not usual in the ICAO environment even for the PPL which can fly more complex machines.

##### *2.7.7.3 Comparison with the FAA rules*

FAR Part-61 of the USA FAA, allows:

- Pilots of simple aircraft (light aeroplanes, balloons, sailplanes) to fly a different type of aircraft in the same class without requiring any formal training, skill test or application;
- To add additional classes to the pilot licence after minimal training and skill test by an examiner.

This is exactly the same philosophy followed by option 13C, while 13A is more demanding than the FAA requirements and option 13B much less demanding.

##### *2.7.7.4 Summary of impact on regulatory harmonisation*

The above considerations are then translated into scores related to the applicable specific objectives in following Table 68:

Specific Objectives	Scoring of options		
	13A	13B	13C
	Always new rating	Automatic extension	Controlled extension
Compliance with ICAO standards	1	- 3	3
Compatibility with other EU rules	0	0	0
LPL privileges	1	- 3	3
Additional pilot ratings	- 3	- 3	3

Harmonise EASA and FAA rules	- 3	- 3	3
<b>TOTAL</b>	<b>- 4</b>	<b>- 12</b>	<b>12</b>
<b>AVERAGE SCORE (Tot/4 quantified parameters)</b>	<b>- 1</b>	<b>- 3</b>	<b>3</b>
<b>WEIGHTED AVERAGE (Score x 1 for regulatory I harmonisation)</b>	<b>- 1</b>	<b>- 3</b>	<b>3</b>

**Table 68: Scoring of impact on regulatory harmonisation**

In conclusion option 13C is the only one acceptable in terms of global harmonisation.

#### *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:

<b>Weighted score of options for the extension of the LPL privileges to new classes or types of aircraft</b>		<b>13A</b>	<b>13B</b>	<b>13C</b>
		<b>Always new rating</b>	<b>Automatic extension</b>	<b>Controlled extension</b>
<b>Key Performance Area</b>	<b>Weight</b>			
Safety	3	9	- 6	4.5
Environmental	3	0	0	0
Economic	2	- 2	- 3	3
Social	2	- 2	4.7	4
Global harmonisation	1	- 1	- 3	3
<b>WEIGHTED TOTAL</b>		<b>4</b>	<b>- 7.3</b>	<b>14.5</b>

**Table 69: Multi Criteria Analysis for the extension of the LPL privileges to other types or classes of aircraft**

**From Table 69 above one can observe that that option 13C scores more than three times as good than option 13A, while the impact of option 13B is globally negative.** In particular, option 13C:

- Scores sufficiently in positive safety terms (although less than option 13A);
- It is environmentally neutral;
- It is definitely the best from the economic point of view, since it does not increase the cost for taxpayers, while implying a proportionate transfer of money from the applicants towards the competent authorities (not EASA) in order to obtain their class ratings;
- Creates some, additional demand in the internal market, but does not overload general aviation pilots;
- Creates around 86 jobs in the private aviation sector (and very few in the competent authorities);
- It is definitely the best in terms of regulatory harmonisation.

## **2.8 Proficiency checks for non-commercial pilots**

### *2.8.1 Alternative options*

Holders of LPL, PPL, SPL or BPL, although not authorized to carry paying passengers, and usually carrying very few non-paying passengers, nevertheless can cause damage to themselves, to the aircraft or even to lives and property on the ground. Even worse, in case of inadvertently infringing ATC rules or penetrating in specific volumes of controlled airspace without proper authorization, they can even cause mid-air collisions with large CAT aeroplanes.

Furthermore some of these pilots fly very occasionally or even do not fly for long periods. Therefore it has to be assessed whether, how often and by whom, they should undergo proficiency checks.

In this context the Agency has identified five possible different options:

- Option 2A: no proficiency checks at all;
- Option 2B: Establish the requirement for a periodic training flight with an instructor (e.g. every 6 years);
- Option 2C: Establish the need for proficiency checks (with a flight examiner) every 2 years;

- Option 2D: as 2C but every 6 years;
- Option 2E: as 2C but every 12 years or any period longer than 6 years.

The **legislator has established that compliance must be demonstrated by regular assessments**, with a frequency proportionate to the level of risk. In other words it has left this matter to the implementing rules. The scope of the present chapter of the RIA is indeed to assess and compare the possible options.

## 2.8.2 Target group and number of entities concerned

### 2.8.2.1 Competent Authorities

Again, **whichever is the preferred option there will be no impact at all on the tasks, budget or staff of the Agency.**

The proficiency checks will not need to be carried out by flight inspectors, in turn officers of a competent authority. Depending on one of the possible four options, the proficiency checks will be carried out by either instructors or examiners. The only obligation for the authority would be to record the date and results of these checks. This will imply a very marginal impact of the authorities themselves.

**It is therefore concluded that for any of the five options under consideration the number of affected authorities will be zero.**

### 2.8.2.2 Affected non commercial pilots

The number of non-commercial pilots today active in the EU 27 + 4 has been estimated in paragraph 2.3.1 above. Furthermore the number of possible new LPL (A) and (H) licences has been estimated in paragraph 2.6.2.2, respectively in 60,000 LPL (A) and 400 LPL (H). As well 16,000 new LPL (S) and 2,200 LPL (B) have been estimated in 2.7.2.2.

The data recalled above are presented in Table 70 below:

Non commercial pilots in the EU 27 + 4					
Aircraft category	Type of licence	In 2008	New licences expected	Total	% difference
Aeroplane	PPL (A)	163,621	0	163,621	0%
	EU LPL (A)	0	60,000	60,000	N.A.
<b>Total non commercial (A) pilots</b>		<b>163,621</b>	<b>60,000</b>	<b>223,621</b>	<b>+ 36.6%</b>
Helicopter	PPL (H)	9,774	0	9,774	0%
	EU LPL (H)	0	400	400	N.A.
<b>Total non commercial (H) pilots</b>		<b>9,774</b>	<b>400</b>	<b>10,174</b>	<b>+ 4%</b>
Sailplane	SPL	72,439	0	72,439	0%
	LPL (S)	0	16,000	16,000	N.A.
<b>Total non commercial (S) pilots</b>		<b>72,439</b>	<b>16,000</b>	<b>88,439</b>	<b>+ 22.1%</b>
Balloons	BPL	9,047	0	9,047	0%
	LPL (B)	0	2,200	2,200	N.A.
<b>Total non commercial (B) pilots</b>		<b>9,047</b>	<b>2,200</b>	<b>11,247</b>	<b>+ 24.3%</b>
<b>TOTAL</b>		<b>254,881</b>	<b>78,600</b>	<b>333,481</b>	<b>+ 30.8%</b>

**Table 70: Number of non commercial pilots**

All of them (i.e. 333,481) will be affected by any of the possible options. Due to the very small amount of PPL licences for airship pilots these figures are excluded from this calculation.

### 2.8.2.3 Directly generated employment

Depending on the considered option, there will be an impact on either flight instructors or flight examiners. For these categories the number of involved entities (not in terms of head count but in terms of Full Time Equivalents (FTEs) is estimated immediately below.

It is assumed that in any case the proficiency check will require about 1 flight hour.

Combining the number of non-commercial pilots estimated in 2.8.2.2, the FTEs required by either instructors or examiners, are estimated in Table 71 below:

OPTION	Pilots to be checked	Frequency		Estimated Number of FTEs	
		Of checks for one pilot	Checks per year	Instructors	Examiners
<b>2A</b>	0	Never	0	0	0
<b>2B</b>	333,481	Every 6 years	55,580	111	0
<b>2C</b>	333,481	Every 2 years	166,740	0	333
<b>2D</b>	333,481	Every 6 years	55,580	0	111
<b>2E</b>	333,481	Every 12 years	27,790	0	56

**Table 71: Number of flight instructor/examiners FTEs**

#### 2.8.2.4 Summary of affected entities

In conclusion, on the basis of the information in sub-paragraphs 2.8.2.1, 2.8.2.2 and 2.8.2.3 above, the number of concerned entities is estimated in table 72 below:

OPTION		Estimated Number			
Id.	Description	Auth.	Non commercial pilots	FTEs	
				FI (50%)	Exam.
<b>2A</b>	No proficiency checks	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>2B</b>	Training flight	<b>0</b>	<b>333,481</b>	<b>111</b>	<b>0</b>
<b>2C</b>	Check every 2 years	<b>0</b>	<b>333,481</b>	<b>0</b>	<b>333</b>
<b>2D</b>	Check every 6 years	<b>0</b>	<b>333,481</b>	<b>0</b>	<b>111</b>
<b>2E</b>	Check every 12 years	<b>0</b>	<b>333,481</b>	<b>0</b>	<b>56</b>

**Table 72: Number of affected entities for the proficiency checks of non-commercial pilots**

#### *2.8.3 Safety impact*

In paragraph 2.3.2 the number of yearly accidents and victims, linked to FCL factors (excluding ATPL and CPL(A) which are out of scope) had been estimated, concluding that more than 700 **accidents per year** could be expected in the EASA Member States for helicopters, "complex" (but not "large") aeroplanes, "non-complex" aeroplanes, sailplanes and balloons: i.e. the aircraft typically flown by non-commercial pilots. **394 of such accidents can be linked to FCL factors.**

**Among those 51 fatal accidents per year, involving a single aircraft, can be linked to FCL factors, leading to a total number of 82 victims/year.** In addition to this the probability of a mid-air collision between a relatively small general aviation aircraft and a large CAT aeroplane is sizable.

It can be estimated that **today** the cost of aviation accidents due, directly or indirectly, to FCL factors in the EU 27 + 4, could total around 19.5 M€/year for non-fatal accidents, 199.7 M€ for the fatal ones involving a single aircraft and 0.8 M€/year for mid-air collisions. The total is **220 M€/year.**

But in the timeframe envisaged by SESAR (i.e. until 2020), the air traffic is expected to further increase, while the trajectories of large CAT aeroplanes will be less constrained and the airspace structures more complex. The probability that a non-commercial pilot, under VFR, could infringe airspace limits and penetrate in volumes of airspace (e.g. Classes A, B, C or D) without prior ATC clearance, could definitely increase if the skills of non-commercial pilots are not enhanced. And unauthorized airspace penetration may lead to catastrophic mid-air collision with a large CAT aeroplane.

Furthermore the air traffic and airspace complexity will not be limited to controlled airspace (typically said ICAO airspace Classes A, B, C and D), since Very Light Jets (VLJ) will increasingly operate also in airspace Classes F and G in order to reach minor aerodromes, while in the same airspace Classes even civilian UAS might appear.

Finally new technologies, such as satellite navigation, will tend to blur the border between VFR and IFR operations. All of this, to avoid that the number of accidents, affecting also third parties in flight and on the ground, demands better training, checking and proficiency for non-commercial pilots, since, already today, the far greatest proportion of air accidents occurs to them and, in a substantial number of cases, FCL causal factors are present.

Based on the above summary it can be observed that:

- Option 2A (no checks at all) may be totally unsatisfactory today (already 1500 airspace infringements per year and already 762 accidents/year occurring to aircraft typically flown by non-commercial pilots);
- Same option 2A may be totally unacceptable in the medium term, since, according to SESAR, if nothing were done in face of the continuing increase of volume and complexity of air operations, the number of accidents could well double;
- Furthermore option 2A, potentially leading to a much greater number of unauthorized penetrations in a more complex and more dynamic airspace, could even lead to a small aircraft colliding, with catastrophic consequences, with a large CAT aeroplane
- Flight examiners, in addition to holding a valid flight instructor rating, possess a higher professional competence (minimum number of hours flown as instructor; participation to a specific course; check passed in flight with a senior examiner) and therefore option 2B has to be considered less satisfactory than either 2C or 2D in safety terms;
- Option 2C (i.e. check every 2 years with an examiner) is the most safe and demanding, however in two years the operational scenario may not have changed too significantly and therefore its advantages over 2D can be considered marginal;
- Option 2D makes no compromises on the quality of the proficiency check (i.e. with an examiner), but relaxes the frequency from 2 to 6 years (compared with 2C), which seems sufficient to take into account significant changes in the operational environment;
- ICAO Annex 6 (standard 9.4.4.1) requires that commercial pilots undergo a proficiency check twice per year; while this is clearly disproportionate for the social risk connected to private flying, it however suggests that a frequency of checks once every 12 years (i.e. option 2E) is totally inadequate.

The above considerations, versus the applicable specific objectives, lead then to the scores in following Table 73:

Specific Objectives	Scoring of options				
	2A	2B	2C	2D	2E
	No checks	Training flight	Every 2 years	Every 6 years	Every 12 years
Proficiency checks for pilots	- 2	1	3	2	1
Compliance with ICAO standards	0	1	2	1.5	1
<b>TOTAL</b>	<b>- 2</b>	<b>2</b>	<b>5</b>	<b>3.5</b>	<b>2</b>
<b>AVERAGE SCORE (Tot/2 quantified parameters)</b>	<b>- 1</b>	<b>1</b>	<b>2.5</b>	<b>1.75</b>	<b>1</b>
<b>WEIGHTED AVERAGE (Score x 3 for safety)</b>	<b>- 3</b>	<b>3</b>	<b>7.5</b>	<b>5.25</b>	<b>3</b>

**Table 73: Scoring of the safety impact**

From Table 73 above it can be observed that the options 2B, 2C, 2D and 2E are scoring positive with a certain advantage for the options 2C and 2D which are satisfactory in safety terms. On the contrary the remaining option 2A has a negative safety impact.



#### 2.8.4 Environmental impact

**All the five options under consideration are considered environmentally neutral.** In fact the proficiency check affects non-commercial pilots which have already got their initial licence and their first rating. These pilots normally fly (often during week ends in summer) within the limits of their spare time and money available. In other words the single flight hour which they could spend for the proficiency check, would be flown anyway, in quantitative terms, for recreational purposes.

#### 2.8.5 Economic Impact

##### 2.8.5.1 Regulatory cost for the Agency

Whichever option is selected, the tasks of the Agency in respect of rulemaking, safety analysis and standardisation will remain unchanged, with respect to today's situation.

No certification/role at all is established for the Agency in respect of pilot licences. In other words there is not economic impact on the Agency, which means no financial flow from either the pilots or the taxpayers towards it.

##### 2.8.5.2 Additional income for the competent authorities

In case of option 2A there will be no flight checks at all. In case of 2B the training flight or check will be carried out by an instructor; by an examiner in case of the remaining options.

In other words there are neither significant tasks to be carried out by the competent authorities directly, nor money flowing towards them from pilots or taxpayers.

##### 2.8.5.3 Additional demand

In paragraph 2.8.2.4 above the number of affected entities has been estimated for the five options under consideration. These entities included direct employment estimated in terms of FTEs for:

- Flight instructors; and
- Flight examiners.

Herein it is assumed again that, for these categories of professionals, the cost on one FTE is in the order of 50,000 €. Taking into account the consideration that only 50% of the instructors providing this kind of flight instruction will receive any remuneration for their work (see 2.6.2.3) the total additional demand generated by the possible proficiency checks can be estimated as in Table 74 below:

OPTION		Additional demand				
Id.	Description	Instructors (50%)		Exam.		TOTAL
		FTEs	K€	FTEs	K€	K€
<b>2A</b>	No proficiency checks	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>2B</b>	Training flight	<b>56</b>	<b>2,800</b>	<b>0</b>	<b>0</b>	<b>2,800</b>
<b>2C</b>	Check every 2 years	<b>0</b>	<b>0</b>	<b>333</b>	<b>16,650</b>	<b>16,650</b>
<b>2D</b>	Check every 6 years	<b>0</b>	<b>0</b>	<b>111</b>	<b>5,550</b>	<b>5,550</b>
<b>2E</b>	Check every 12 years	<b>0</b>	<b>0</b>	<b>56</b>	<b>2,800</b>	<b>2,800</b>

**Table 74: Additional demand created**

In turn it is assumed that this additional demand will generate income for States, on the basis of income tax, value added tax or other, in the order of 20%.

Therefore the **additional tax generated by is then 0 in the case of option 2A, 1,110 k€/year in case of option 2D; 3,330 k€/year in case of option 2C and 560 k€/year in case of options 2B and 2E.**

#### 2.8.5.4 Safety dividend

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.

Nevertheless in paragraph 2.3.2.9 the number of accidents for aircraft typically flown by non commercial pilots has been estimated, as well as the number of accidents and victims directly or indirectly connected to FCL causal factors. In subsequent paragraph 2.3.2.10 the cost of fatal and non-fatal aviation accidents has been estimated as well, including mid-air collisions between a large CAT aeroplane and a much smaller general aviation aircraft.

Furthermore in 2.8.3 it has been observed that:

- Options 2C and 2D produce a strong positive safety impact, which is greater for the former: therefore it can be assumed that 2D will produce a benefit in safety terms of - 2% accidents/victims and 2C - 3%;
- Options 2B and 2E have been scored also with a positive safety impact. Therefore it can be assumed that these two options will produce a benefit of -1% accidents/victims
- On the contrary options 2A produces a negative safety impact, which could lead to increase the number of safety events in the order of + 2% accidents;

The above coarse estimation can be translated in terms of avoided accidents, victims and costs (per year/linked to FCL), as in Table 75 below:

Parameter	Baseline*	2A	2B	2C	2D	2E
		No checks	Training flight	Every 2 years	Every 6 years	Every 12 years
<b>Safety effect</b>	N.A.	<b>2% worse</b>	<b>1% better</b>	<b>3% better</b>	<b>2% better</b>	<b>1% better</b>
<b>Unauthorised airspace penetrations (linked to FCL)</b>	690	704	683	669	676	683
<b>Accidents/year (linked to FCL)</b>	395	403	391	383	387	391
<b>Difference in accidents per year</b>		+ 8	- 4	- 12	- 8	- 4
<b>Fatal accidents/year (linked to FCL)</b>	51	52	50.5	49.5	50	50.5
<b>Difference in fatal accidents per year</b>		+ 1	- 0.5	- 1.5	- 1	- 0.5
<b>Victims/year (linked to FCL)</b>	82	83.6	81.2	79.5	80.4	81.2
<b>Difference in victims per year</b>		+ 1.6	- 0.8	- 2.5	- 1.6	- 0.8
<b>Cost of injuries (k€)</b>	10,477					
<b>Cost of substantial damage (k€)</b>	5,641					
<b>Cost of investigation (k€) non-fatal</b>	3,336					
<b>TOTAL cost non-fatal accidents (k€)</b>	<b>19,508</b>	<b>19,898</b>	<b>19,313</b>	<b>18,923</b>	<b>19,508</b>	<b>19,313</b>
<b>Difference in cost of non-fatal accidents per year</b>		<b>+ 390</b>	<b>- 195</b>	<b>- 585</b>	<b>- 390</b>	<b>- 195</b>
<b>Cost of fatalities (k€)</b>	188,600					
<b>Cost of destroyed aircraft (k€)</b>	10,213					
<b>Cost of investigation fatal accidents</b>	924					

<b>TOTAL cost fatal accidents (k€)</b>	<b>199,737</b>	<b>203,733</b>	<b>197,740</b>	<b>193,745</b>	<b>195,742</b>	<b>197,740</b>
<b>Difference in cost of fatal accidents per year</b>		<b>+ 3,995</b>	<b>- 1,997</b>	<b>- 5,992</b>	<b>- 3,995</b>	<b>- 1,997</b>
<b>Cost of fatalities in mid-air collisions (k€)</b>	586					
<b>Cost of destroyed large CAT aeroplanes (k€)</b>	203					
<b>Cost of destroyed GA aircraft (k€)</b>	7					
<b>Cost of investigation mid-air collisions</b>	3					
<b>TOTAL cost mid air collisions (k€)</b>	<b>799.5</b>	<b>815.5</b>	<b>791.5</b>	<b>775.5</b>	<b>783.5</b>	<b>791.5</b>
<b>Difference in cost of mid air collisions per year</b>		<b>+ 16</b>	<b>- 8</b>	<b>- 24</b>	<b>- 16</b>	<b>- 8</b>
<b>GRAND TOTAL (k€)</b>	<b>220,044</b>	<b>224,444</b>	<b>217,844</b>	<b>213,443</b>	<b>215,644</b>	<b>217,844</b>
<b>Total Difference (k€)</b>		<b>+ 4,400</b>	<b>- 2,200</b>	<b>- 6,601</b>	<b>- 4,400</b>	<b>- 2,200</b>

\* sailplanes plus balloons plus "complex" and "non-complex" motorized aeroplanes

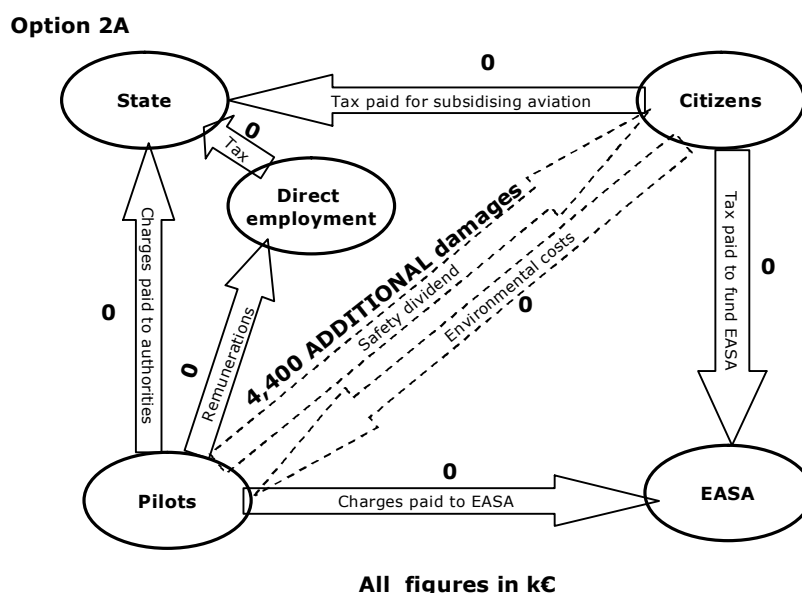
**Table 75: Safety dividend (yearly / linked to FCL)**

#### 2.8.5.5 Environmental burden

For the considerations exposed in 2.8.4 there is no economic burden deriving from the environmental impact of any of the five options under consideration.

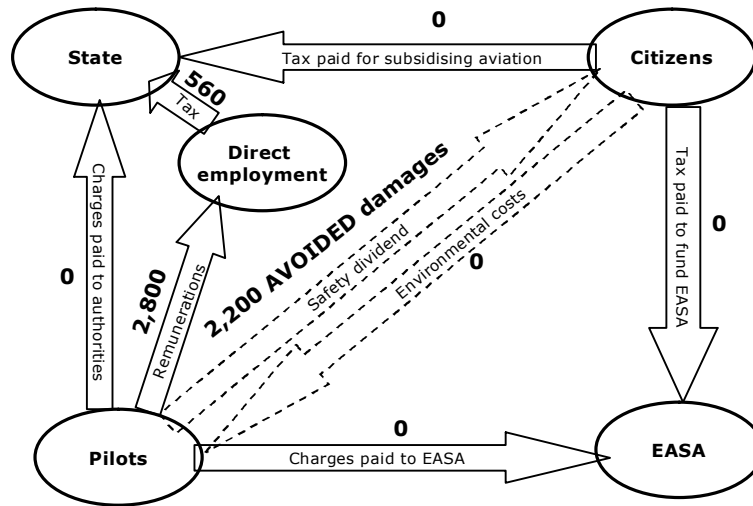
#### 2.8.5.6 Summary of economic impact

The economic flows estimated above can be presented in the Figures 12 to 16 below:



**Figure 12: Economic flows for option 2A**

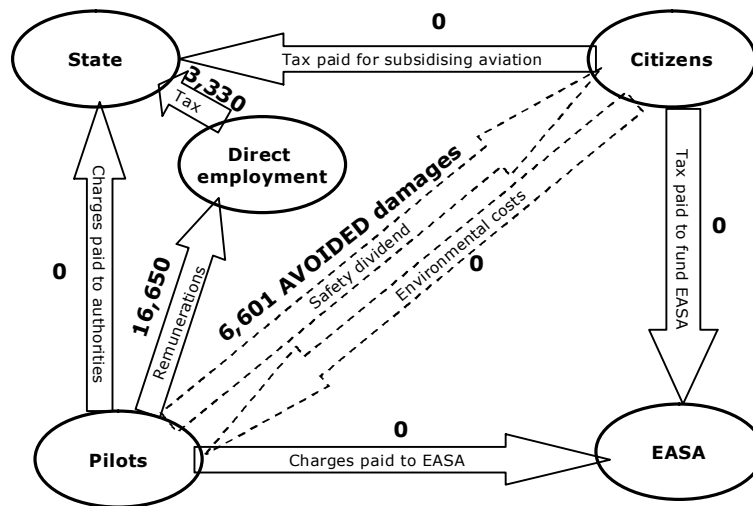
Option 2B



All figures in k€

Figure 13: Economic flows for option 2B

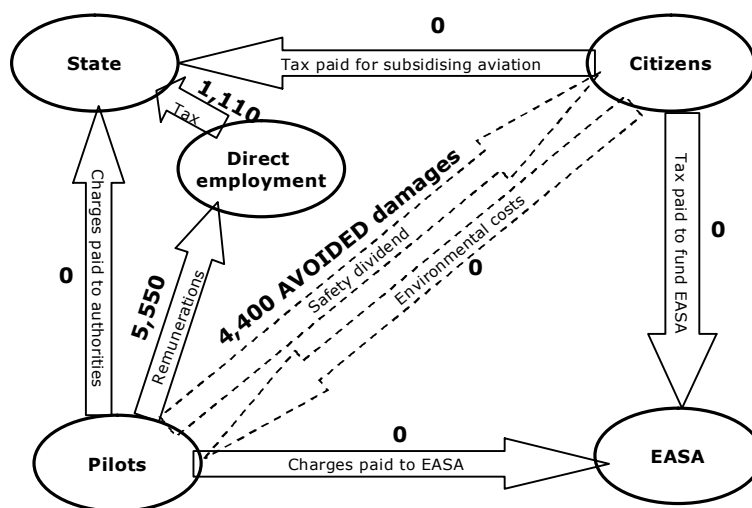
Option 2C



All figures in k€

Figure 14: Economic flows for option 2C

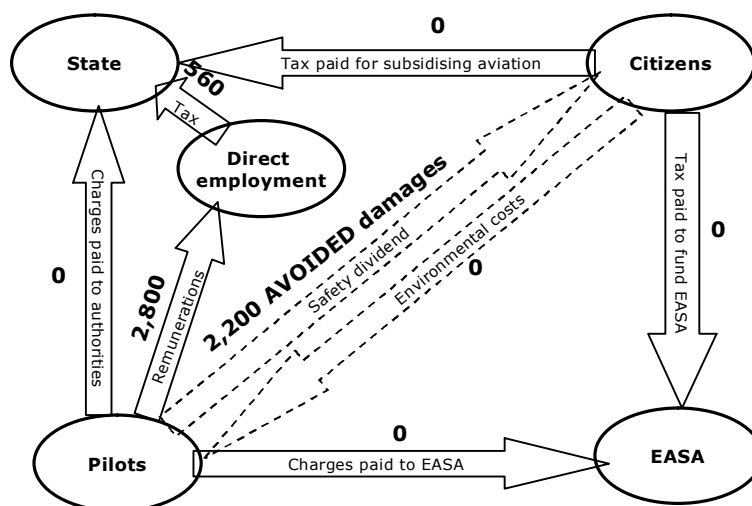
Option 2D



All figures in k€

Figure 15: Economic flows for option 2D

Option 2E



All figures in k€

Figure 16: Economic flows for option 2E

The orders of magnitude estimated in the five graphs above can be summarised in Table 76 below:

Parameter	2A	2B	2C	2D	2E
	No checks	Training flight	Every 2 years	Every 6 years	Every 12 years
From taxpayers to national authorities (k€)	0	0	0	0	0
From taxpayers to EASA	0	0	0	0	0
<b>Total from taxpayers to fund aviation (k€)</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
From applicants to national authorities	0	0	0	0	0
From applicants to EASA	0	0	0	0	0
<b>Total from applicants to authorities</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>TOTAL from citizens to public sector</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Safety dividend	- 4,400	2,200	6,601	4,400	2,200
Environmental burden	0	0	0	0	0
<b>Benefit for society (k€)</b>	<b>-4,400</b>	<b>2,200</b>	<b>6,601</b>	<b>4,400</b>	<b>2,200</b>
Additional demand	0	2,800	16,650	5,550	2,800
Tax generated by additional demand	0	560	3,330	1,110	560

Table 76: Economic flows

In other words:

- No money at all will flow from citizens (taxpayers or applicants) to the Agency or to the competent authorities for any of the options under consideration;
- In case of **option 2C** there will be a **net benefit for the society (safety benefit) of 6.6 M€/year**; a **net benefit of 4.4 M€/year in case of option 2D** and a **net benefit of around 2 M€/year in case of the options 2B and 2E**;
- **Vice versa option 2A will cause a damage of 4.4 M€/year due to a greater number of accidents**;
- Furthermore option 2A will not generate additional demand;
- Options 2B and 2E, in addition to a positive safety dividend, will generate about 2.8 M€/year of additional demand (and therefore about 560 k€/year additional tax);
- Option 2D will generate an additional demand of 5.5 M€/year (and therefore 1.1 M€/year additional tax) whereas the option 2C, in addition to the positive safety dividend, will generate the highest demand of around 17 M€/year (and 3.3 M€/year additional tax);
- However **more internal demand means more expenditure for the involved non-commercial pilot, which indeed is the case of option 2C and 2D**.

The monetary terms and the considerations presented above can be translated into scoring, versus the applicable specific objectives, in following Table 77:

Specific Objectives	Scoring of options				
	2A	2B	2C	2D	2E
	No checks	Training flight	Every 2 years	Every 6 years	Every 12 years
Proficiency checks for pilots	- 3	0.5	2	1.5	0.5
Number of pilot licences	2	1	- 3	-1	1
<b>TOTAL</b>	<b>- 1</b>	<b>1.5</b>	<b>- 1</b>	<b>0.5</b>	<b>1.5</b>
<b>AVERAGE SCORE (Tot/2 quantified parameters)</b>	<b>- 0.5</b>	<b>0.75</b>	<b>- 0.5</b>	<b>0.25</b>	<b>0.75</b>
<b>WEIGHTED AVERAGE (Score x 2 for economy)</b>	<b>- 1</b>	<b>1.5</b>	<b>- 1</b>	<b>0.5</b>	<b>1.5</b>

Table 77: Scoring of the economic impact

## 2.8.6 Social Impact

### 2.8.6.1 Competent authorities

Any of the five possible options involves no significant tasks or jobs inside the competent authorities or the Agency. No jobs are therefore created or eliminated from the public sector.

### 2.8.6.2 FTEs deriving from additional demand

The number of FTEs deriving from additional demand has already been estimated in paragraph 2.8.5.3 above, as:

- No new FTEs for either instructors or examiners, in case of option 2A;
- 55 new FTEs for instructors in case of option 2B, or the same for examiners in case of 2D;
- 333 new FTEs for examiners, in case of option 2C, or 56 in case of 2E.

### 2.8.6.3 Other social impacts

In paragraph 2.8.5.4 it has however been estimated that the option 2A could cause additional, new victims due to aviation accidents. Also for option 2A the risk of id-air collision between a small airframe and a large CAT aeroplane will increase in the medium term, due to the change of the operational scenario, including the changes induced by SESAR or by the development of the state of the art (e.g. VLJ, UAS, satellite navigation). One of such mid-air collision may have large coverage by the media. This has then to be translated into socially negative qualitative terms for option 2A.

Furthermore, in the ICAO / JAR-FCL system today in force in many EASA Member States, the periodic proficiency check was not required for the totality of pilot licences: for instance in the case of single-pilot single-engine piston aeroplane class ratings, the requirement to pass a proficiency check every 24 months for the revalidation of the class rating could have been replaced by compliance with currency requirements and a training flight with an instructor. Options 2C, 2D and 2E will on the contrary introduce such an obligation, even as frequently as every two years for the option 2C. The formal checks will also represent a cost for non-commercial pilots. Therefore also 2C and 2D and 2E have to be considered slightly negative in social terms.

### 2.8.6.4 Summary of social impact

The orders of magnitude of the additional jobs estimated in 2.8.6.1 and 2.8.6.2 above can be summarised in Table 78 below:

FTEs	2A	2B	2C	2D	2E
	No checks	Training flight	Every 2 years	Every 6 years	Every 12 years
national authorities	0	0	0	0	0
EASA	0	0	0	0	0
<b>TOTAL newly created jobs in the public sector</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Instructors	0	55	0	0	0
Examiners	0	0	333	111	56
<b>TOTAL newly created jobs in the private sector</b>	<b>0</b>	<b>55</b>	<b>333</b>	<b>111</b>	<b>56</b>
<b>TOTAL newly created jobs</b>	<b>0</b>	<b>55</b>	<b>333</b>	<b>111</b>	<b>56</b>

**Table 78: Social impact in terms of FTEs**

From above Table 78 it can be observed that option 2C could create more than 300 jobs in the private aviation sector, while option 2B will create around 50 new jobs, and 2D will create about 100 jobs. Around 50 will be created by 2E. Option 2A will create no jobs at all.

The above new jobs, and the qualitative considerations in 2.8.6.3, are then translated into scores versus the applicable specific objectives in following Table 79:

Specific Objectives	Scoring of options				
	2A	2B	2C	2D	2E
	No checks	Training flight	Every 2 years	Every 6 years	Every 12 years
Proficiency checks for pilots	- 2	0.5	2	1.5	0.5
Compatibility with other EU rules	- 1	0	-3	- 1	0
<b>TOTAL</b>	<b>- 3</b>	<b>0.5</b>	<b>- 1</b>	<b>0.5</b>	<b>0.5</b>
<b>AVERAGE SCORE (Tot/2 quantified parameters)</b>	<b>- 1.5</b>	<b>0.25</b>	<b>- 0.5</b>	<b>0.25</b>	<b>0.25</b>
<b>WEIGHTED AVERAGE (Score x 2 for social impact)</b>	<b>- 3</b>	<b>0.5</b>	<b>- 1</b>	<b>0.5</b>	<b>0.5</b>

Table 79: Scoring of the social impact

From Table 78 it can then be observed that both options 2A and 2C are negative in social terms, while options 2B and 2D and 2E are almost neutral.

### 2.8.7 Regulatory harmonisation

#### 2.8.7.1 Compatibility with other EU regulations

Paragraph 1.e.2 of the essential requirements (ERs) in Annex III to the Basic Regulation imposes the legal obligation for pilots to maintain an appropriate level of competence in practical skill. Furthermore therein the **legislator has established that compliance must be demonstrated by regular assessments**, examinations, tests or checks (**not just by maintaining currency**).

**Option 2A does not comply with the above mentioned legal provisions and so it is very negative in this respect.**

But the legislator, in the mentioned ER, has also established that the frequency of these tests must be proportionate to the level of risk. In other words it has left this matter to the implementing rules. Therefore any of the remaining four options 2B to 2D, which indeed aim at proportionate rules, is perfectly compatible with the EASA Basic Regulation.

#### 2.8.7.2 Compatibility with ICAO standards

ICAO Annex 6 (paragraph 9.4.4.1) requires pilot proficiency checks under the responsibility of the air operator, which shall ensure that piloting technique and the ability to execute emergency procedures is checked in such a way as to demonstrate the pilot's competence on each type or variant of a type of aeroplane. Where the operation may be conducted under instrument flight rules, an operator shall ensure that the pilot's competence to comply with such rules is demonstrated to either a check pilot of the operator or to a representative of the State of the Operator. Such checks shall be performed twice within any period of one year.

In addition **ICAO Annex 1 (par. 1.2.5.1)** requires that a Contracting State, having issued a pilot licence, shall ensure that the privileges granted by that licence, or by related ratings, are not exercised **unless the holder maintains competency and meets the requirements for recent experience** established by that State. In other words ICAO leaves ample margins to its Contracting States to decide how, and how often proficiency shall be checked for non-commercial pilots.

Furthermore, ICAO **Recommendation 1.2.5.1.1** therein suggests that a Contracting State should establish maintenance of competency and recent experience requirements for pilot licences and ratings based on a **systematic approach to accident prevention and should include a risk assessment process and analysis of current operations**, including accident and incident data appropriate to that State. Indeed this has been done in the present RIA, in previous paragraph 2.3.2 where it has been assessed that the number of accidents involving non-commercial pilots is much greater than the number of those involving CPL or ATPL.

As a consequence of the above:

- Option 2A does not comply with ICAO standard 1.2.5.1;



- Vice versa options 2B, 2C, 2D and 2E do comply, but, option 2C appears disproportionate in relation to the requirement imposed to ATPL of multi-crew aircraft with instrument rating, under ICAO annex 6;
- Options 2B and 2E do not follow the ICAO recommendation, while options 2C and 2D do.

#### 2.8.7.3 Comparison with the FAA rules

FAR Part 61.58 requires Pilots in Command (PIC) of CAT aeroplanes with a minimum flight crew of two persons, to undergo proficiency checks. No similar requirement exists for non-commercial pilots.

#### 2.8.7.4 Summary of impact on regulatory harmonisation

The above considerations are then translated into scores related to the applicable specific objectives in following table 80:

Specific Objectives	Scoring of options				
	2A	2B	2C	2D	2E
	No checks	Training flight	Every 2 years	Every 6 years	Every 12 years
Compliance with ICAO standards	- 3	2	1	3	2
Compatibility with other EU rules	- 3	2	2	2	2
Harmonise EASA and FAA rules	2	- 1	- 1	- 1	- 1
<b>TOTAL</b>	<b>- 4</b>	<b>3</b>	<b>2</b>	<b>4</b>	<b>3</b>
<b>AVERAGE SCORE (Tot/3 quantified parameters)</b>	<b>- 1.33</b>	<b>1</b>	<b>0.67</b>	<b>1.33</b>	<b>1</b>
<b>WEIGHTED AVERAGE (Score x 1 for regulatory harmonisation)</b>	<b>- 1.33</b>	<b>1</b>	<b>0.67</b>	<b>1.33</b>	<b>1</b>

**Table 80: Scoring of impact on regulatory harmonisation**

From Table 80 one can observe that option 2A scores negative in terms of regulatory harmonisation, while the other four are acceptable, with a certain advantage for option 2D.

#### *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, the following matrix for MCA can be provided:

Weighted score of options for proficiency checks of non-commercial pilots		2A	2B	2C	2D	2E
		No checks	Training flight	Every 2 years	Every 6 years	Every 12 years
Key Performance Area	Weight					
Safety	3	- 3	3	7.5	5.25	3
Environmental	3	0	0	0	0	0
Economic	2	- 1	1.5	- 1	0.5	1.5
Social	2	- 3	0.5	- 1	0.5	0.5
Regulatory harmonisation	1	- 1.33	1	0.67	1.33	1
<b>WEIGHTED TOTAL</b>		<b>- 8.3</b>	<b>6</b>	<b>6.2</b>	<b>7.6</b>	<b>6</b>

**Table 81: Multi Criteria Analysis for the proficiency checks of non-commercial pilots**

From Table 81 above one can observe that only option 2A has a negative score. On the contrary all other options are positive, but option 2D scores about 25% better than the options 2C, 2B and 2E. In particular, option 2D:

- Has a good score in safety terms;
- is environmentally neutral;
- Maintains a balance between the positive economic impact on society, the additional jobs and the burden for the pilots;
- is the best in terms of regulatory harmonisation.

## **2.9 Remunerated instruction by PPL, SPL and BPL**

### *2.9.1 Alternative options*

ICAO provisions restrict the holders of PPL, SPL and BPL to only perform in non-commercial air operations, without receiving remuneration at all. This inter alia excludes the possibility for them to provide instruction in a training organisation and receiving payment for this service. This has created a serious shortage of instructors for the private licences that has been repeatedly identified as one of the reasons for the decrease of general aviation activities in Europe.

JAR-FCL allowed the holder of a PPL (A) or PPL (H) to provide instruction for the student pilots wishing to achieve the PPL, but only if the PPL instructors possessed CPL theoretical knowledge (TK). However, the privileges of the licence were still restricted to non-commercial activities for no remuneration, and therefore the problem identified remained unsolved.

The Agency has considered that there could be a different case: i.e. PPL, SPL and BPL entitled to achieve the normal Flight Instructor (FI) certificate, according to the requirements published in NPA 2008-17, and then enabled to provide remunerated instruction in flight.

Hence the following potential options have been identified:

- **14.2A “do nothing”:** i.e. continue to prevent PPL, SPL and BPL from receiving any remuneration for the provision of instruction in flight;
- **14.2B:** build upon JAR-FCL requirements and allow the said pilots to become FI (A), FI (H), FI (S) or FI (B) for remuneration, but, for PPL candidate instructors, only **if they have CPL TK** (for SPL and BPL there is no commercial licence and therefore no TK requirement for it);
- **14.2C:** allow all mentioned non-commercial pilots (i.e. excluding LPL) to provide remunerated instruction in flight as FI, **providing that they hold a valid instructor certificate**, for the relevant aircraft category and class.

### *2.9.2 Target group and number of entities concerned*

#### 2.9.2.1 Competent Authorities

According to Article 7.6(b) of the Basic Regulation, the Commission has to adopt supplementing measures (i.e. implementing rules) also for the flight instructor certificate. These certificates are then issued by competent authorities at national level. In other words, **whichever is the preferred option there will be no impact at all on the tasks, budget or staff of the Agency.**

The number of affected competent authorities is therefore:

- 0 in case of option 14.2A (no additional demand for instructor certificates from PPL, SPL or BPL, since any remuneration to non-commercial pilots will continue to be prevented);
- or, in case of either **option 14.2B or 14.2C** (for which the possibility of remuneration might trigger additional demand), **equal to number of EASA Member States: 27 + 4 = 31.**

#### 2.9.2.2 Affected non commercial pilots

The total number of non commercial pilots which could be active in the EU 27 + 4 from 2010 to 2015, has been estimated in paragraph 2.8.2.2 above. **LPL holders will not have the possibility of becoming remunerated instructors** in any of the options listed above.

According to Agency's perception, in today's situation only about 15-25% of the PPL (A) and (H) are qualified as FI, possibly also because of the lack of economic incentive. This in turn leads to a chronic shortage of FI for general aviation, even insufficient to fulfil the potential demand (already assessed in 2.6 above). No additional incentive will be created by option 14.2A and so the present situation will continue = 0% additional FI.

For the remaining two options is then herein assumed that:

- an additional 20% of the PPL (A) and PPL (H) will be happy to become instructors if allowed to receive remuneration for this (case of option 14.2C), unless the requirements to do so are too heavy; this is the case of option 14.2C;
- consequently only additional 10% in case of option 14.2B which requires CPL TK;
- On the contrary only additional 5% of the BPL or SPL holders will exploit this possibility, in case of 14.2B or 14.2C, since the tradition in their Clubs is strongly based on voluntary labour contributions.

Based on the above data and assumptions, the following numbers of **new (remunerated) instructors, which will emerge in five years in the EU 27 + 4, from holders of non-commercial pilot licences**, can be estimated as in Table 82 below:

Non commercial pilots becoming remunerated instructors								
Aircraft category	Type of licence	Total pilots in the EU 27 + 4	Option					
			14.2A		14.2B		14.2C	
			prevented		CPL TK		allowed	
			%	N.	%	N.	%	N.
Aeroplane	PPL (A)	163,621	0%	0	10%	16,362	20%	32,724
	EU LPL (A)	60,000	0%	0	0%	0	0%	0
<b>Total non commercial (A) pilots</b>		<b>223,621</b>	<b>0%</b>	<b>0</b>		<b>16,032</b>		<b>32,724</b>
Helicopter	PPL (H)	9,774	0%	0	10%	977	20%	1,955
	EU LPL (H)	400	0%	0	0%	0	0%	0
<b>Total non commercial (H) pilots</b>		<b>10,174</b>	<b>0%</b>	<b>0</b>		<b>977</b>		<b>1,955</b>
Sailplane	SPL	72,439	0%	0	5%	3,622	5%	3,622
	LPL (S)	16,000	0%	0	0%	0	0%	0
<b>Total non commercial (S) pilots</b>		<b>88,439</b>	<b>0%</b>	<b>0</b>		<b>3,622</b>		<b>3,622</b>
Balloons	BPL	9,047	0%	0	5%	452	5%	452
	LPL (B)	2,200	0%	0	0%	0	0%	0
<b>Total non commercial (B) pilots</b>		<b>11,247</b>	<b>0%</b>	<b>0</b>		<b>452</b>		<b>452</b>
<b>TOTAL</b>		<b>333,481</b>	<b>0%</b>	<b>0</b>		<b>21,083</b>		<b>38,753</b>

**Table 82: Number of non commercial pilots becoming remunerated instructors**

### 2.9.2.3 Directly generated employment

It is assumed herein that there will be neither direct impact on the physicians, nor on aircraft/engine maintenance engineers, deriving from any of the possible options under consideration. It is assumed in fact that these pilots (becoming candidate instructors) will anyway fly for an almost equivalent number of hours in their free time, if not attending an instructor course. And by definition, as pilots, they are already subject to medical requirements.

On the contrary the major **impact will be on TK teachers, flight instructors and flight examiners**. For these categories the number of involved entities (not in terms of head count but in terms of Full Time Equivalents (FTEs) is estimated immediately below.

It is recalled that in the present RIA the Agency assumes that **1 FTE represents in average:**

- **200 effective man/days of labour** (i.e. 356 days in the year – 104 Saturdays and Sundays – 30 days of leave/Bank holidays – 2 days sick leave – 20 days spent for administrative/routine overhead tasks, which do not really represent the “product” of the labour);
- 1500 (i.e. 200 x 7.5 hours/day) effective **working hours/year** out of which **1,000 of lecturing in the classroom for TK teachers**;
- Same 1500 working hours/year, out of which **500 flying hours/year** in the case of remunerated pilots (including flight instructors and examiners); in terms of FTEs, whether this 500 flying hours are produced by one person (for whom this will be a full time job) or by a number of different physical persons (e.g. part time instructors during the week end) is irrelevant in the context of this RIA.

In option 14.2A there will of course be 0 new instructors to train and therefore no hours of TK required.

Vice versa option 14.2B requires, for candidate FI (A) and FI (H) to have a level of TK equivalent to a CPL (A) or CPL (H). This requirement can be fulfilled attending with success a modular course of 250 classroom hours. This requirement is additional to the TK course for FI (i.e. 125 hours). For FI (S) and FI (B) the total requirement will be for only 30 hours of TK to become FI.

In option 14.2C the requirement for FI (S) and (B) remains unchanged, while for FI (A) and (H) it is limited to the 125 hours of classroom specific for the training activity.

Assuming that **20% of the new instructors estimated in 2.9.2.2 will be trained per year** and that there will be five student instructors in the classroom, the following number of FTEs is estimated for TK teachers, as presented in Table 83 below:

Instructor type	N. student FI/year	N. lesson hours/person	N. persons/ classroom	Effort for TK teachers	
				Classroom hours	FTEs
Option 14.2A (remunerated instruction prevented)					
FI (A)	0	0	0	0	0
FI (H)	0	0	0	0	0
FI (S)	0	0	0	0	0
FI (B)	0	0	0	0	0
TOTAL	0	N.A.	N.A.	0	0
Option 14.2B (remuneration allowed, but with CPL TK for FI (A) and (H))					
FI (A)	3,272	375	5	245,400	245
FI (H)	195	375	5	14,625	15
FI (S)	724	30	5	4,344	4
FI (B)	90	30	5	540	1
TOTAL	4,281	N.A.	N.A.	N.A.	265
Option 14.2C (remuneration allowed, with instructor certificate)					
FI (A)	6545	125	5	163,625	164
FI (H)	391	125	5	9,775	10
FI (S)	724	30	5	4,344	4
FI (B)	90	30	5	540	1
TOTAL	7,750	N.A.	N.A.	N.A.	179

**Table 83: Number of FTEs for TK teachers**

The estimation of the minimum required instruction flight hours to be considered for one PPL, SPL or BPL seeking to become remunerated instructor is based on the proposals in mentioned NPA 2008-17. This requirement will remain the same for any of the three options under consideration, but the number of trainees will change.

It is recalled that in the present RIA the Agency assumes that only a certain amount of instructors will receive remuneration for the PPL instruction (see paragraph 2.6.2.2). As a matter of fact also in this case a certain percentage of FIs providing the theoretical knowledge instruction for the new instructors will do it on a voluntary, unpaid basis in a club environment. Therefore, the resulting **additional demand for TK teachers** calculated in table 82 above has to be reconsidered taking into account the following estimations.

The calculation of the working time for the theoretical knowledge instruction during the instructor course is based on the assumption that around 50% of this time will be done by instructors who receive remuneration for this. The additional CPL theoretical knowledge required in option 14.2B will be provided by CPL licensed instructors. Therefore in the case of option 14.2B the above calculated amount of FTEs will be reduced only by 25% whereas the calculation for option 14.2C has to be reduced by 50% (no CPL instructors involved).

This leads to the following numbers of FTE's for theoretical knowledge instructors:

Option 14.2A: 0 FTEs  
 Option 14.2B: 199 FTEs  
 Option 14.2C: 89.5 FTEs

Combining the above mentioned requirements, with the estimated number of candidate instructors per year, the number of new FTEs required by "senior" flight instructors (i.e. with the privilege of training new candidate instructors) who will provide the required practical training during the instructor course are estimated in Table 84 below:

Instructor type	N. student FI/year	Instruction flight hours*		Senior FI FTEs
		Per person	Total	
Option 14.2A (remunerated instruction prevented)				
FI (A)	0	0	0	0
FI (H)	0	0	0	0
FI (S)	0	0	0	0
FI (B)	0	0	0	0
TOTAL	0	N.A.	0	0
Option 14.2B (remuneration allowed, but with CPL TK for FI (A) and (H))				
FI (A)	3,272	30	98,160	196
FI (H)	195	30	5,850	12
FI (S)	724	10**	7,240	14
FI (B)	90	3	270	1
TOTAL	4,281	N.A.	111,520	223
Option 14.2C (remuneration allowed, with instructor certificate)				
FI (A)	6,545	30	196,350	393
FI (H)	391	30	11,730	23
FI (S)	724	10**	7,240	14
FI (B)	90	3	270	1
TOTAL	7,750	N.A.	215,590	431

\* specific for the instructor certificate, assuming that the necessary experience has already been acquired during normal flight activity or for ratings.

\*\* the requirement for the FI(S) course defines 10 hours or 20 launches

**Table 84: Number of FTEs for "senior" flight instructors**

Similar to the calculation for the theoretical knowledge instruction the calculation of the working time for the practical flight training during the instructor course is based on the above mentioned assumption that around 50% of this training will be provided by instructors who receive remuneration for this. This leads to the following numbers of FTE's for the "senior" flight instructors:

Option 14.2A: 0 FTEs  
 Option 14.2B: 111.5 FTEs  
 Option 14.2C: 215.5 FTEs

In addition, all the new candidate instructors, at the end of the course, before becoming certified FI, will need a proficiency check (in flight) with a FI examiner.

Combining this requirement, equivalent to one hour of flight, with the estimated number of candidate instructors per year, the number of new FTEs required by examiners (for FI) is estimated in Table 85 below:

Instructor type	N. student FI/year	Flight check hours		FI Examiners
		Per person	Total	
Option 14.2A (remunerated instruction prevented)				
TOTAL	0	N.A.	0	0
Option 14.2B (remuneration allowed, but with CPL TK for FI (A) and (H))				
FI (A)	3,272	1	3,272	7
FI (H)	195	1	195	0
FI (S)	724	1	724	1
FI (B)	90	1	90	0
TOTAL	4,281	N.A.	4,281	8
Option 14.2C (remuneration allowed, with instructor certificate)				
FI (A)	6,545	1	6,545	13
FI (H)	391	1	391	1
FI (S)	724	1	724	1
FI (B)	90	1	90	0
TOTAL	7,750	N.A.	7,750	15

**Table 85: Number of FTEs for FI examiners***2.9.2.4 Summary of affected entities*

In conclusion, on the basis of the information in sub-paragraphs 2.9.2.1, 2.9.2.2 and 2.9.2.3 above, the number of concerned entities is estimated in Table 86 below:

OPTION		Auth.	Estimated number of new FI/year			FTEs		
Id.	Description		(A) + (H)	(S)	(B)	TK teachers	Senior FI	FI Examiners
<b>14.2 A</b>	No remunerated instruction	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	0	0	0
<b>14.2 B</b>	CPL TK	<b>31</b>	3,272 + 195	724	90	199	111.5	8
<b>14.2 C</b>	Instructor certificate	<b>31</b>	6,545 + 391	724	90	89.5	215.5	15

**Table 86: Number of affected entities for remunerated instruction in flight***2.9.3 Safety impact*

**Option 14.2A** will lead to no additional FI licences, since it will maintain the high requirements for TK (i.e. 250 + 125 hours, including topics, such as planning commercial flights, not relevant for instruction of future LPL), and it will continue to prevent any remuneration. So the present shortage of instructors for GA will continue and then the **safety standards might be slightly eroded**, in order to have few more certified FI.

Standard 2.8.1.1 in ICAO Annex 1 requires a candidate FI to meet the TK requirements for the issue of a CPL as appropriate to the category of aircraft (i.e. either (A) or (H)) included in the licence. This is exactly the requirement applicable not only to the above option 14.2A, but also for option 14.2B. The same requirement has been transposed in JAR-FCL and applied in practice by the majority of EU 27 + 4 Member States.

In other words **option 14.2B** will not change today's rules and practices in terms of safety requirements. But it will also produce more FIs because of the economic incentive of the remuneration, although not as

many as in option 14.2C. So it will partially mitigate the shortage and still remain **marginally prone to lowering safety standards**.

In the case of option 14.2C the TK requirements will change: i.e. 125 hours of TK instruction (most specifically focusing on the instructors' activity) instead of 375 (the same specific 125 for FI TK + 250 for CPL TK, including many topics not relevant for initial training of LPL or PPL). The Agency then considers that:

- 125 hour of specific TK adequately fulfil the safety requirements applicable to the FI certificate, for (A) and (H);
- No change at all is proposed for FI (S) and FI (B);
- The TK for CPL (A) or (H) is tailored on the need to fly that category of aircraft, but it is not at all linked to the specific training needs to become a FI;
- These needs are on the contrary addressed by the specific FI training course which the Agency has proposed in NPA 2008-17;
- There are no data at all to highlight the possible lack of TK by the FI as a causal factor in relation to aviation accidents.

For all the above **option 14.2C has to be considered substantially neutral in safety terms**.

In the context of the present paragraph, the most significant difference of the proposed privileges versus today's situation, which is the possible remuneration, is not relevant since not directly connected to safety.

The above considerations are then translated into scores versus the applicable specific objectives in following Table 87:

Specific Objectives	Scoring of options		
	14.2A	14.2B	14.2C
	prevented	CPL TK	allowed
Skill test for instructors	0	0	0
Categories for flight instructors	0	0	0
Compliance with ICAO standards	0	0	- 1
Privileges for PPL, SPL, BPL	0	0	0
Number of pilot licences	- 3	- 1	2
<b>TOTAL</b>	<b>- 3</b>	<b>- 1</b>	<b>1</b>
<b>AVERAGE SCORE (Tot/5 quantified parameters)</b>	<b>- 0.6</b>	<b>- 0.2</b>	<b>0.2</b>
<b>WEIGHTED AVERAGE (Score x 3 for safety)</b>	<b>- 1.8</b>	<b>- 0.6</b>	<b>0.6</b>

**Table 87: Scoring of the safety impact**

#### *2.9.4 Environmental impact*

**All the three options under consideration are considered environmentally neutral.** In fact the extension of privileges of the PPL, SPL or BPL to remunerated flight instruction, affects private pilots which have already got their initial licence and their first rating. These pilots normally fly (often during week ends in summer) within the limits of their spare time and money available. In other words the flying hours which they could spend for formal instruction and skill test to become FI, would be flown anyway, in quantitative terms, for recreational or similar purposes.

#### *2.9.5 Economic Impact*

##### 2.9.5.1 Regulatory cost for the Agency

Whichever option is selected, the tasks of the Agency in respect of rulemaking, safety analysis and standardisation will remain unchanged, with respect to today's situation.

No certification/role at all is established for the Agency in respect of pilot licences or FI certificates. In other words there is no economic impact on the Agency, which means no financial flow from either the candidate FIs or the taxpayers towards it. This will apply to any of the three options under consideration.

### 2.9.5.2 Additional income for the competent authorities

The UK CAA, in August 2008, was informing stakeholders that the administrative charge for the inclusion of an instructor rating in a pilot licence was 108 £<sup>73</sup>. This charge covers the purely administrative costs inside the UK CAA, since the application shall be supported by a recommendation made by an examiner approved by the UK CAA for the purpose. In other words the cost of the examination in flight is not included in the mentioned charge.

On 07 August 2009 the exchange rate was 0.7925 £ for 1 €.

Therefore 108 £ = **around 136 € to be paid by the applicant for a new FI rating or certificate.**

It is assumed that, in terms of order of magnitude, similar charges will be established by all the competent authorities in the EU 27 + 4.

Therefore, the additional income for the authorities deriving from the yearly number of applications for new FI certificates can be estimated in Table 88 below:

OPTION	FI	New FI/year	Additional income	
			Administrative charge for one application	TOTAL additional income
			€	K€
<b>14.2A</b> remuneration prevented	(A), (H), (S), (B)			
	<b>TOTAL</b>	<b>0</b>	<b>136</b>	<b>0</b>
<b>14.2B</b> CPL TK	FI (A)	3,272	136	
	FI (H)	195	136	
	FI (S)	724	136	
	FI (B)	90	136	
	<b>TOTAL</b>	<b>4,281</b>	<b>136</b>	<b>582</b>
<b>14.2C</b> remuneration allowed	FI (A)	6,545	136	
	FI (H)	391	136	
	FI (S)	724	136	
	FI (B)	90	136	
	<b>TOTAL</b>	<b>7,750</b>	<b>136</b>	<b>1,054</b>

**Table 88: Additional income for authorities for additional FI certificates**

It is herein assumed that in any of the three options under consideration, the charges paid by the applicants will cover 100% of the internal costs of the authorities to administer the FI certificates and their variations. Therefore there is no financial flow from the taxpayers to the authorities in relation to any of the three options under consideration. Should one or more States decide differently, this will not be Community responsibility and therefore it does not belong to the present RIA.

### 2.9.5.3 Additional demand

In paragraph 2.9.2.4 above the number of affected entities has been estimated for the three options under consideration. These entities included direct employment estimated in terms of FTEs for:

- TK teachers;
- "Senior" flight instructors; and
- Flight examiners.

Herein it is assumed again that, for these categories of professionals, the cost on one FTE is in the order of 100,000 €.

<sup>73</sup> <http://www.caa.co.uk/docs/1352/PLS%20Enclosure%200708.pdf>



Therefore the total additional demand generated by the additional candidate FIs, can be estimated as in Table 89 below:

OPTION	Id.	Description	Additional demand					
			TK teachers		FI		Exam.	
			FTEs	K€	FTEs	K€	FTEs	K€
	<b>14.2A</b>	No remuneration allowed	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
	<b>14.2B</b>	TK CPL	<b>199</b>	<b>19,900</b>	<b>111,5</b>	<b>11,150</b>	<b>8</b>	<b>800</b>
	<b>14.2C</b>	Remuneration allowed	<b>89.5</b>	<b>8,950</b>	<b>215.5</b>	<b>21,550</b>	<b>15</b>	<b>1,500</b>
								<b>32,000</b>

**Table 89: Additional demand created**

In turn it is assumed that this additional demand will generate income for States, on the basis of income tax, value added tax or other, in the order of 20%.

Therefore the additional tax generated by is then:

- 0 k€/year in the case of option 14.2A;
- 6,370 k€/year in case of option 14.2B;
- 6,400 k€/year in case of option 14.2C.

#### 2.9.5.4 Safety dividend

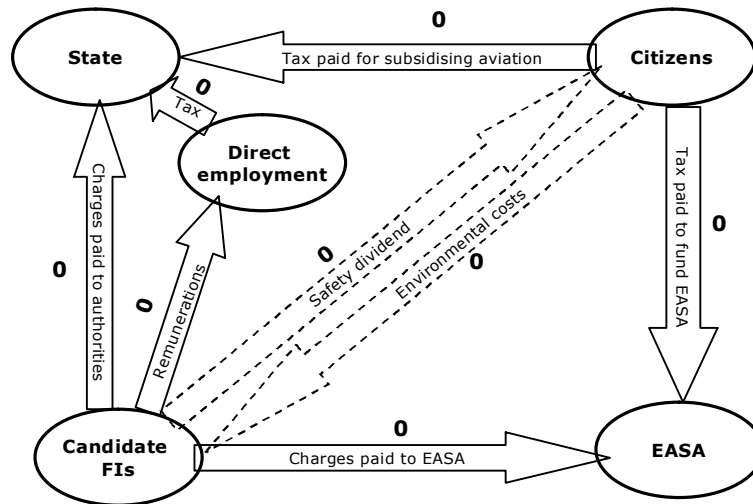
In paragraph 2.9.3 above it has been assessed that all the three options under consideration are more or less safety neutral. Therefore, for any of them a negligible safety dividend is assumed, i.e. neither additional damage, nor societal benefit due to less accidents.

#### 2.9.5.5 Environmental burden

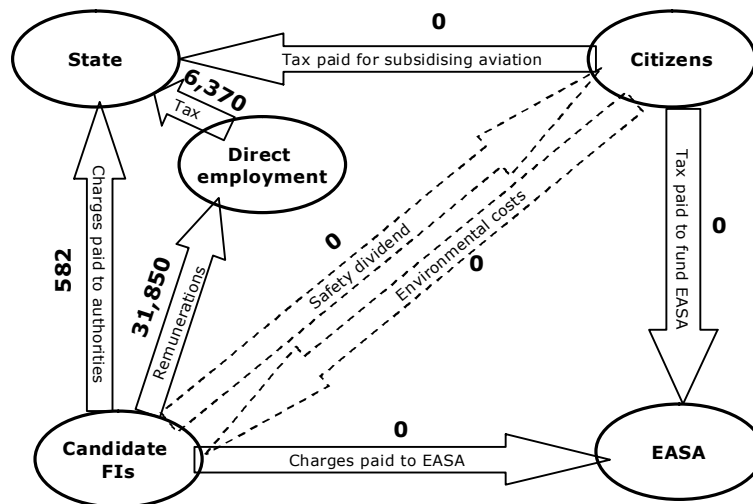
For the considerations exposed in 2.9.4 there is equally no economic burden deriving from the environmental impact of any of the three options under consideration.

#### 2.9.5.6 Summary of economic impact

The economic flows estimated above can be presented in the Figures 17, 18 and 19 below:

**Option 14.2A**

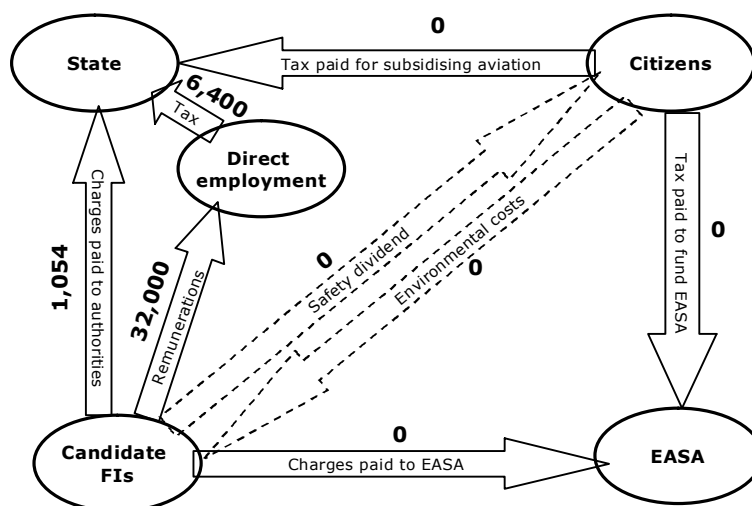
All figures in k€

**Figure 17: Economic flows for option 14.2A****Option 14.2B**

All figures in k€

**Figure 18: Economic flows for option 14.2B**

Option 14.2C



All figures in k€

Figure 19: Economic flows for option 14.2C

The orders of magnitude estimated in the three graphs above can be summarised in Table 90 below:

Parameter	14.2A	14.2B	14.2C
	prevented	CPL TK	allowed
From taxpayers to national authorities (k€)	0	0	0
From taxpayers to EASA	0	0	0
<b>Total from taxpayers to fund aviation (k€)</b>	<b>0</b>	<b>0</b>	<b>0</b>
From applicants to national authorities	0	582	1,054
From applicants to EASA	0	0	0
<b>Total from applicants to authorities</b>	<b>0</b>	<b>582</b>	<b>1,054</b>
<b>TOTAL from citizens to public sector</b>	<b>0</b>	<b>582</b>	<b>1,054</b>
Safety dividend	0	0	0
Environmental burden	0	0	0
<b>Benefit for society (k€)</b>	<b>0</b>	<b>0</b>	<b>0</b>
Additional demand	0	31,850	32,000
Tax generated by additional demand	0	6,370	6,400

Table 90: Economic flows

In other words:

- No money at all will flow from citizens (taxpayers or applicants) to the Agency for any of the options under consideration;
- No money at all will flow from taxpayers to the aviation competent authorities for any of the options under consideration;
- 582 k€/year will flow from applicants for a FI certificate to the aviation competent authorities for option 14.2B, to pay for the services they require; 1,054 k€/year (almost twice as much) in case of option 14.2C and zero in case of 14.2A;
- Any of the options will be neutral towards society, in terms of safety dividend or environmental burden;
- Furthermore option 14.2B will generate around 32 M€/year of additional demand (and therefore about 6.4 M€/year additional tax), while 14.2A will generate no additional demand at all; option

14.2C will generate a similar additional demand as option 14.2B with exact 32M€/year (and therefore 6.4M€/year additional tax);

The monetary terms and the considerations presented above can be translated into scoring, versus the applicable specific objectives, in following Table 91:

Specific Objectives	Scoring of options		
	14.2A prevented	14.2B CPL TK	14.2C allowed
Categories for flight instructors	0	1	2
Privileges for PPL, SPL, BPL	- 2	0	3
Number of pilot licences	- 3	1	2
<b>TOTAL</b>	<b>- 5</b>	<b>2</b>	<b>7</b>
<b>AVERAGE SCORE (Tot/3 quantified parameters)</b>	<b>- 1.67</b>	<b>0.67</b>	<b>2.33</b>
<b>WEIGHTED AVERAGE (Score x 2 for economy)</b>	<b>- 3.3</b>	<b>1.3</b>	<b>4.7</b>

**Table 91: Scoring of the economic impact**

From the Table it can be seen that option 14.2A has to be considered negative in economic terms: i.e. no additional demand created, which means no revitalization of general aviation.

On the contrary both options 14.2B and 14.2C are positive in economic terms, however with the latter scoring more than three times better than the former.

## *2.9.6 Social Impact*

### *2.9.6.1 Competent authorities*

Option 14.2A involves neither additional income tasks nor jobs inside the competent authorities. The same applies to the Agency.

Equally there is no social impact on the Agency for either option 14.2B or 14.2C. However, the former leads to around 582 k€/year of additional income **for the competent authorities**, to compensate for the issue of additional FI certificates. Assuming a cost of 60 k€/FTE in said authorities, this additional income translates into nearly 10 **FTEs**.

In case of **option 14.2C** the additional income for the national authorities has been estimated in 1,054 k€/year, which translates into **18 additional FTEs**.

### *2.9.6.2 FTEs deriving from additional demand*

The number of FTEs deriving from additional demand has already been estimated in paragraph 2.9.5.2 above, as:

- No new FTEs for either TK teachers, senior flight instructors (FI) or examiners, in case of option 14.2A;
- 199 new FTEs for FI TK teachers, 111.5 for senior FI and 8 for examiners in case of option 14.2B;
- 89.5 new FTEs for FI TK teachers, 215.5 for senior FI and 15 for examiners in case of option 14.2C.

### *2.9.6.3 Other social impacts*

Furthermore, in qualitative terms, it has to be noted that option 14.2A (i.e. "do nothing") will not change the present situation of slow decline of general aviation activities in the EU 27 + 4, including because of the shortage of flight instructors. In social terms this has to be considered negative.

On the other hand, the major cost (and the number of created jobs) deriving from option 14.2B and, in a larger measure from 14.2C, will create additional demand from G.A. pilots towards other GA pilots. In other words they will positively contribute to revitalize GA, with economic flows mainly inside that community. This has to be considered positive in social terms.

#### 2.9.6.4 Summary of social impact

The orders of magnitude of the additional jobs estimated in 2.9.6.1 and 2.9.6.2 above can be summarised in Table 92 below:

FTEs	Options		
	14.2A prevented	14.2B CPL TK	14.2C allowed
national authorities	0	10	18
EASA	0	0	0
<b>TOTAL newly created jobs in the public sector</b>	<b>0</b>	<b>8</b>	<b>18</b>
TK teachers	0	199	89.5
Senior flight instructors	0	111.5	215.5
Flight examiners	0	8	15
<b>TOTAL newly created jobs in the private sector</b>	<b>0</b>	<b>318.5</b>	<b>320</b>
<b>TOTAL newly created jobs</b>	<b>0</b>	<b>326.5</b>	<b>338</b>

**Table 92: Social impact in terms of FTEs**

From above Table 92 it can be observed that option 14.2C could create 320 jobs in the private aviation sector (and around 18 in the competent authorities), while option 14.2B will create a total amount of 326 jobs. None will be created by 14.2A.

The above new jobs and the qualitative considerations in 2.9.6.3 are then translated into scores versus the applicable specific objectives in following Table 93:

Specific Objectives	Scoring of options		
	14.2A prevented	14.2B CPL TK	14.2C allowed
Categories for flight instructors	- 3	- 1	2
Privileges for PPL, SPL, BPL	- 3	2	2
Number of pilot licences	- 3	2	3
<b>TOTAL</b>	<b>- 9</b>	<b>3</b>	<b>7</b>
<b>AVERAGE SCORE (Tot/3 quantified parameters)</b>	<b>- 3</b>	<b>1</b>	<b>2.33</b>
<b>WEIGHTED AVERAGE (Score x 2 for social impact)</b>	<b>- 6</b>	<b>2</b>	<b>4.7</b>

**Table 93: Scoring of the social impact**

From Table 93 it can then be observed that option 14.2A is highly negative in social terms, while option 14.2B is slightly positive. The only option with a significant positive social impact is 14.2C.

#### 2.9.7 Regulatory harmonisation

##### 2.9.7.1 Compatibility with other EU regulations

No interaction with other EU rules has been identified for any of the three options under consideration.

##### 2.9.7.2 Compatibility with ICAO standards

Paragraph 2.3.2.1 of ICAO Annex 1, restricts the PPL, SPL and BPL holders to perform in non-commercial activities for no remuneration. This excludes the possibility to provide instruction in a training organisation and receiving payment for this service. This has created a serious shortage of instructors for the private licences that has been repeatedly identified as one of the reasons for the decrease of general aviation activities in Europe. This is exactly mirrored by option 14.2A, while 14.2B and 14.2C will depart.

In addition paragraph 2.8.1.1 in the same ICAO Annex requires a TK equivalent to a CPL for all FI, which is the case of option 14.2B.

However these additional FI will be mainly provide training for the PPL licences and also for the new LPL licences which are outside the scope of international civil aviation and therefore out of scope of ICAO Annex 1.

### 2.9.7.3 Comparison with the FAA rules

FAA does not allow private pilots to receive remuneration for flight instruction. However, FAR part 61.403 allows sport pilots to become FIs without CPL TK, as in option 14.2C.

### 2.9.7.4 Summary of impact on regulatory harmonisation

The above considerations are then translated into scores related to the applicable specific objectives in following Table 94:

Specific Objectives	Scoring of options		
	14.2A prevented	14.2B CPL TK	14.2C allowed
Categories for flight instructors	3	3	2
Compliance with ICAO standards	1	3	- 2
Privileges for PPL, SPL, BPL	- 3	- 3	3
Harmonise EASA and FAA rules	-1	- 3	- 2
<b>TOTAL</b>	<b>0</b>	<b>0</b>	<b>1</b>
<b>AVERAGE SCORE (Tot/4 quantified parameters)</b>	<b>0</b>	<b>0</b>	<b>0.25</b>
<b>WEIGHTED AVERAGE (Score x 1 for global harmonisation)</b>	<b>0</b>	<b>0</b>	<b>0.25</b>

**Table 94: Scoring of impact on regulatory harmonisation**

Clearly option 14.2A (i.e. present practice) and 14.2B are the most harmonised with ICAO and FAA. However option 14.2C is equivalent to FAA for sport pilots FI (i.e. no requirement for CPL TK) in safety terms, while the only difference is the possibility of remuneration. This will not affect the possibility of having the FI certificate validated by the FAA. In summary, all the options under consideration are almost equivalent from the regulatory harmonisation point of view.

### 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, the following matrix for MCA can be provided:

Weighted score of options for remunerated instruction by PPL, SPL and BPL		14.2A	14.2B	14.2C
		prevented	CPL TK	allowed
Key Performance Area	Weight			
Safety	3	- 1.8	- 0.6	0.6
Environmental	3	0	0	0
Economic	2	- 3.3	1.3	4.7
Social	2	- 6	2	4.7
Regulatory harmonisation	1	0	0	0.25
<b>WEIGHTED TOTAL</b>		<b>- 11.1</b>	<b>2.7</b>	<b>10.2</b>

**Table 95: Multi Criteria Analysis for remunerated instruction by PPL, SPL and BPL**

From Table 95 above one can observe that that option 14.2C scores about 4 times better than 14.2B, while option 14.2A has a negative score. In particular, option 14.2C

- Scores marginally positive (but better than the others) in safety terms;
- is environmentally neutral and almost neutral in terms of regulatory harmonisation;
- is the best in economic terms, thanks to the additional demand created among pilots (mainly "junior" FIs to "senior" FIs) inside general aviation;
- is the best for the social impact with the potential of creating around 340 jobs in the private sector of general aviation.

## **2.10 Proficiency of Instructors (FI/LAFI/CRI/TRI/SFI)**

### *2.10.1 Alternative options*

In principle periodical assessment of proficiency is necessary to maintain the validity of any pilot licence or certificate. And in fact paragraph 1.e.2 of the essential requirements (ERs in Annex III to the EASA Basic Regulation) for pilot licensing establishes, for all licences, certificates or ratings, the need for regular assessments, examinations, tests **or** checks to demonstrate a continuing level of practical skill. A pilot must demonstrate during these assessments the ability to perform the procedures and manoeuvres with a degree of competence appropriate to the functions exercised on the aircraft. The frequency of these tests must be proportionate to the level of risk.

Although the proposed implementing rules (ref. paragraph 2.8 above) already require a regular check for all non commercial pilots (i.e. option 2D, once every 6 years), a separate additional proficiency check (or alternative method) may therefore be necessary for the instructors to periodically assess their competence, as appropriate for the instructor function. In particular ER 1.i.2 (v) in the same Basic Regulation, specifically addressed to instructors, requires them to receive regular refresher training to ensure that the instructional standards are maintained up to date.

In other words there are possibly three main methods to revalidate an instructor certificate:

- demonstration of currency, accrued by carrying instructor tasks for a minimum number of flight hours (or take offs) in a specified calendar period;
- attending a refresher seminar for instructors;
- passing a proficiency check in flight with a properly qualified examiner.

And in fact the JAR-FCL system in the beginning didn't foresee any binding periodic proficiency check for instructors, but the instructor himself could choose a proficiency check instead of attending an instructor refresher seminar or instead of maintaining current his/her skill by providing a certain amount of practical instruction in flight in a given time period. With the JAR-FCL amendment 7 (dated 01.12.06) an additional requirement was published for the revalidation and renewal of the FI(A) rating (JAR-FCL 1.355) which asks for a proficiency check for at least each alternate revalidation of a FI(A) rating as one of the two requirements to be fulfilled to comply with the requirement.

The three possible methods listed above, have also to be considered in front of the period of validity of the instructor certificate (e.g. 3 years, 6 years or else).

Based on the above parameters, a very huge number of alternatives could exist, as obtained by differently combining them (e.g. require a seminar and proficiency check every 9 years, but do not mandate any currency requirements) and also maybe considering the aircraft category of the instructor.

The Agency has in particular identified, among the tens of options possible in theory, a dozen, worth to be listed in the present document, as presented in Table 96 below:

Option		Validity of Instructor certificate years	Currency	Instructor refresher seminar	Proficiency check
4A	"Do nothing"	3	Mandatory (and verified every 3 years)	Required or not according to national rules	Not required
4B	2 requirements every 3 years	3	Fulfilment of two out of three requirements, mandatory at each revalidation, every 3 years		
4C	3 requirements every 3 years	3	Mandatory	Required	Required
4D	Seminar every 6 years	3	Mandatory	Required at each alternate revalidation	Not required
4E	Check every 6 years	3	Mandatory	Not required	Required at each alternate revalidation
4F	Seminar or check every 6 years but currency every 3 years	3	refresher seminar or check mandatory at each alternate revalidation, every 6 years (currency mandatory every three years, with the possibility of replacing it by seminar or proficiency check)		
4G	Seminar and check every 6 years	3	Mandatory (every 3 years)	Required (every 6 years)	Required (every 6 years)
4H	Seminar every 9 years for all instructors	3	May be replaced by proficiency check	Required at each third revalidation	Not required (unless replacing currency)
4I	2 requirements every 3 years but the check every 6 years / 9 years	3	Fulfilment of two out of three requirements every three years but a mandatory check each alternate revalidation for FI(A)/(H) and every third revalidation for LAFI and FI(S)/(B) as one of the two options		
4J	2 requirements every 3 years but the check every 9 years (all instructors)	3	Fulfilment of two out of three requirements every three years but a mandatory check each third revalidation as one of the two options		
4K	Check every 12 years (or any period longer than 9 years)	3	Not required	Not required	Mandatory (every 9 years)
4L	Extended validity	6	Any	Any	Any

Table 96: Possible options for proficiency of Instructors

However analysing in detail the impact of the main possible identified 12 options in this document would become too cumbersome.

The comparative detailed analysis is therefore limited to options 4B, 4F, 4I and 4J.

The remaining **8 options** (shaded in Table 95 above), are **excluded from a deeper analysis**, for the following reasons:

- **option 4A** because it is considered **insufficient in safety terms**, especially in the face of the technical, operational and regulatory evolution which can take place over the years; in addition it may be impractical, since it offers no alternative for revalidation to instructors who, for any reason, may not have accrued a sufficient number of hours of instruction in flight to demonstrate currency;
- **options 4H, 4K and 4L**, because also **not acceptable in safety terms**, bearing in mind that the proficiency requirements will apply also to commercial instructors;



- **options 4C and 4G because too demanding** (even in economic terms) as well as going beyond JAR-FCL former requirements, **in the absence of any safety evidence** dictating to do so;
- **options 4D and 4E because inflexible** and necessitating the demonstration of currency, with no alternatives.

### 2.10.2 Target group and number of entities concerned

#### 2.10.2.1 Competent Authorities

According to Article 7.6(b) of the Basic Regulation, the Commission has to adopt supplementing measures (i.e. implementing rules) also for maintaining (i.e. validity, currency and revalidation requirements) the flight instructor certificate. These certificates are issued and revalidated by competent authorities at national level. In other words, **whichever is the preferred option there will be no impact at all on the tasks, budget or staff of the Agency.**

Since in any of the most promising four options selected in 2.10.1 above, the FI certificate will need to be revalidated every 3 years, for all of them the number of affected competent authorities is **equal to number of EASA Member States: 27 +4 = 31.**

#### 2.10.2.2 Affected Instructors

The total number of pilots (commercial and non commercial) presently active in the EU 27 + 4, has been estimated in paragraph 2.3.1 above.

According to Agency's perception, in today's situation only about 20% of the CPL (A) and (H) are qualified as FI. A similar estimation (i.e. presently 20% of the pilots qualified as FI) is applicable to PPL and SPL. A lower estimation is applicable to BPL or Airship (As) pilots.

In addition, in paragraph 2.9.2.2, it has been estimated that an additional 20% of PPLs could decide to become FI (in case of option 14.2C), and an additional 5% for either SPLs or BPLs.

In the absence of concrete experience so far, the number of LPL wishing to become instructor (LAFI) is not estimated in the present RIA. The total number of instructors holding another instructor certificate than FI or LAFI (e.g. CRI/TRI/SFI) is very difficult to estimate. Therefore the calculation of the impact for these four different options for the revalidation procedures will be based only on numbers for the main instructor category FI.

In any of the possible four options under detailed consideration, all the FI will be affected (already existing and "new"; commercial and non commercial). Therefore, based on the data and assumptions mentioned above, the following numbers of **FI in the EU 27 + 4**, affected by any of the options under consideration, can be estimated as in Table 97 below:

Pilot licence	Pilots	Flight Instructors			
		Present %	Additional % in case of option 14.2C	Total %	Total number
<b>CPL (A) or (H)</b>	56,666	20 %	0 %	20%	11,333
<b>Partial total</b>	<b>56,666</b>				<b>11,333</b>
<b>PPL (A) or (H)</b>	173,395	20 %	20 %	40%	69,358
<b>SPL</b>	72,439	20 %	5 %	25%	18,110
<b>BPL</b>	9,047	10 %	5 %	15%	1,357
<b>PPL(As)</b>	6	17%	0%	17%	1
<b>Partial total</b>	<b>254,887</b>				<b>88,826</b>
<b>TOTAL</b>	<b>311,553</b>	<b>N.A.</b>	<b>N.A.</b>	<b>N.A.</b>	<b>100,159</b>

**Table 97: Affected FI**2.10.2.3 Directly generated employment (FI)

It is assumed herein that there will be neither direct impact on the physicians, nor on aircraft/engine maintenance engineers, deriving from any of the possible options under consideration. It is assumed in fact that these flight instructors will anyway fly and by definition, as pilots, they are already subject to medical requirements.

On the contrary the major **impact will be on TK teachers** (for the refresher seminars), **and flight examiners** (for the possible proficiency checks). For these categories the number of involved entities (not in terms of head count but in terms of Full Time Equivalents (FTEs) is estimated immediately below.

It is recalled that in the present RIA the Agency assumes that **1 FTE represents in average 1,000 classroom hours for TK teachers** or **500 flying hours/year** in the case of examiners).

In **option 4B** it is assumed that every year **1/3 of the totality of FIs** (i.e.  $100,159/3 = 33,386$ ) will have to demonstrate fulfilment of 2 requirements out of three. Consequently it is assumed that around 11,129 (i.e.  $33,386/3$ ) will demonstrate currency and seminar; an equal number currency and proficiency check and, finally, a similar number seminar and proficiency check. In other words each year there will be:

- 22,258 (i.e.  $11,129 \times 2$ ) FIs attending a one day seminar (= 7.5 hours), with 20 of them in a classroom;
- 22,258 FIs will pass a proficiency check in flight with a flight instructor examiner (FIE).

In **option 4F** all FI will have to normally demonstrate currency every three years (although this may be replaced by a different method), but, in addition, a seminar or a proficiency check in flight has to be passed every 6 years. Therefore **1/6 of the totality of the FIs will be affected per year**:  $100,159/6 = 16,693$ . It is assumed that 50% of them will choose the seminar (i.e. 8,346) and an equal number the proficiency check in flight.

In **option 4J**, two out of the three requirements have to be demonstrated every three years (choice of the instructor), but a compulsory proficiency check in flight has to be passed by all FI every 9 years. As for option 4B it is assumed that for the first and second 3-year period every year **1/3 of the totality of FIs** (i.e.  $100,159/3 = 33,386$ ) will have to demonstrate fulfilment of 2 requirements out of three. Consequently it is assumed that around 11,129 (i.e.  $33,386/3$ ) will demonstrate currency and seminar; an equal number currency and proficiency check and, finally, a similar number seminar and proficiency check. In other words each year there will be:

- 22,258 (i.e.  $11,129 \times 2$ ) FIs attending a one day seminar (= 7.5 hours), with 20 of them in a classroom;
- 22,258 FIs will pass a proficiency check in flight with a flight instructor examiner (FIE).

For the last 3-year period the instructor has to take the mandatory check flight and additionally one of the other two options. This leads to the assumption that around 16,693 (i.e.  $33,386/2$ ) will demonstrate check and seminar; an equal number currency and proficiency check. Consequently for this 3-year period 33,386 instructors per year will pass a proficiency check in flight with an FIE. The refresher seminar will be taken by at least 16,693 instructors (may be some more if they can't fulfil the currency requirement) per year during this last three years period. For the comparison with the other options the three 3-year periods have to be summed up and divided through three to get comparable data.

This leads to the following final conclusion:

- First revalidation period: 22,258 FIs yearly attending the seminar;
- Second revalidation period: 22,258 FIs yearly attending the seminar
- Third revalidation period: 16,693 FIs yearly attending the seminar
- Average number of FIs ( $61,209/3$ ): 20,403 FIs yearly attending the seminar
- First revalidation period: 22,258 FIs yearly taking the check flight
- Second revalidation period: 22,258 FIs yearly taking the check flight
- Third revalidation period: 33,386 FIs yearly taking the check flight
- Average number of FIs ( $77,902/3$ ): 25,967 FIs yearly taking the check flight

The case of **option 4I**, two out of the three requirements have to be demonstrated every three years (choice of the instructor); additionally the compulsory proficiency check (mandatory as one of the two options) will be **every 6 years for FI (A) and FI (H), but every 9 years for FI (S), FI (B) and FI (As)**. It is assumed that for the first 3-year period (and second 3-year period for FI(S)/FI(B)/FI(As)) every year **1/3 of the totality of FIs** (i.e.  $80,691/3 = 26,897$  in the case of FI(A/H) and  $19,468/3 = 6,489$  in the case of FI(S/B/As)) will have to demonstrate fulfilment of 2 requirements out of three. Consequently it is assumed that in the case of FI or aeroplanes and helicopters around 8,966 (i.e.  $26,897/3$ ) will demonstrate currency and seminar; an equal number currency and proficiency check and, finally, a similar number seminar and proficiency check. For the FI (S), (B) or (As) it can be calculated that around 2,163 instructors (i.e.  $6,489/3$ ) will demonstrate currency and seminar; an equal number currency and proficiency check and, finally, a similar number seminar and proficiency check. In other words each year there will be in the case of FIs for aeroplanes and helicopters:

- 17,932 (i.e.  $8,966 \times 2$ ) FIs attending the seminar ;
- 17,932 (i.e.  $8,966 \times 2$ ) FIs will pass a proficiency check in flight (with FIE).

In the case of FIs for sailplanes, balloons and airships (two revalidation periods) there will be:

- 4,326 (i.e.  $2,163 \times 2$ ) FIs attending the seminar ;
- 4,326 (i.e.  $2,163 \times 2$ ) FIs will pass a proficiency check in flight (with FIE).

For the second (or in the case of FI(S)/FI(B)/FI(As) third) 3-year period the instructor has to take the mandatory check flight and additionally one of the other two options. This leads to the assumption that around 13,448 (i.e.  $26,897/2$ ) FI for aeroplanes and helicopters will demonstrate check and seminar; an equal number currency and proficiency check. Consequently for this 3-year period 26,897 instructors (A/H) per year will pass a proficiency check in flight with an FIE. The refresher seminar will be taken by at least 13,448 instructors (may be some more if the instructor can't fulfil the currency requirement) for aeroplanes or helicopters per year during this second 3-year period.

Accordingly during the third 3-year period 6,489 instructors (S/B/As) per year will pass a proficiency check in flight with an FIE. The refresher seminar will be taken by at least 3,245 (i.e.  $6,489/2$ ) instructors (may be some more if the instructor can't fulfil the currency requirement) for sailplanes, balloons or airships yearly during this third 3-year period.

For the comparison with the other options the two (or in the case of FI(S)/FI(S)/FI(As) the three) 3-year periods have to be summed up and divided through two (or three) to get comparable data.

This leads to the following calculation for the **FI(A) and FI(H)**:

- First revalidation period: 17,932 FIs yearly attending the seminar
- Second revalidation period: 13,448 FIs yearly attending the seminar
- Average number of FIs ( $31,380/2$ ): 15,690 FIs (A) or (H) yearly attending the seminar
- First revalidation period: 17,932 FIs yearly taking the check flight
- Second revalidation period: 26,897 FIs yearly taking the check flight
- Average number of FIs ( $44,829/2$ ): 22,415 FIs (A) or (H) yearly taking the check flight

The calculation for the **FI(S), FI(B) and FI(As)** is based on the following assumptions:

- First revalidation period: 4,326 FIs yearly attending the seminar
- Second revalidation period: 4,326 FIs yearly attending the seminar
- Third revalidation period: 3,245 FIs yearly attending the seminar
- Average number of FIs ( $11,897/3$ ): 3,966 FIs (S), (B) or (As) yearly attending the seminar
- First revalidation period: 4,326 FIs yearly taking the check flight
- Second revalidation period: 4,326 FIs yearly taking the check flight
- Third revalidation period: 6,489 FIs yearly taking the check flight
- Average number of FIs ( $15,141/3$ ): 5,047 FIs (S), (B) or (As) yearly taking the check flight

This leads to the **final conclusion that in the case of option 4I**:

- 19,656 FIs (A/H: 15,690 S/B/As: 3,966) will attend the seminar every year
- 27,462 FIs (A/H: 22,415 S/B/As: 5,047) will take the check flight every year

The above data can then be presented in summary, with respect to the number of FTEs for TK teachers, in Table 98 below:

Option		N. FI at seminar /year	N. lesson hours/person	N. persons/classroom	Classroom hours	FTEs for TK teachers
4B	2 requirements every 3 years	22,258	7.5	20	8,346	8
4F	2 requirements every 6 years	8,346	7.5	20	3,129	3
4I	Check every 6 or 9 years	19,656	7.5.	20.	7,371	7
4J	Check every 9 year	20,403	7.5	20	7,651	8

**Table 98: Number of FTEs for TK teachers**

Along the same lines the number of FTEs for examiners can be calculated as in Table 99 below:

Option		FI proficiency checks/year	Flight check hours		FTEs for FIE
			Per person	Total	
4B	2 requirements every 3 years	22,258	1	22,258	45
4F	2 requirements every 6 years	8,346	1	8,346	17
4I	2 requirements plus check every 6 or 9 years	27,462	1	27,462	55
4J	2 requirements plus check every 9 years	25,967	1	25,967	52

**Table 99: Number of FTEs for flight examiners**

#### 2.10.2.5 Summary of affected entities

In conclusion, on the basis of the information in sub-paragraphs 2.10.2.1, 2.10.2.2 and 2.10.2.3 above, the number of concerned entities is estimated in Table 100 below:

OPTION		Auth.	FI	FTEs	
Id.	Description			TK teachers	FI Examiners
4B	2 requirements every 3 years	31	100,159	8	45
4F	2 requirements every 6 years	31	100,159	3	17
4I	2 requirements plus check every 6 or 9 years	31	100,159	7	55
4J	2 requirements plus check every 9 years	31	100,159	8	52

**Table 100: Number of affected entities for proficiency of flight instructors**

#### 2.10.3 Safety impact

As recalled in paragraph 2.10.1 above, the JAR-FCL system didn't establish any binding periodic proficiency check for FI in the beginning, but the instructor himself/herself could choose a proficiency check instead of attending an instructor refresher seminar or instead of maintaining current his/her skill by providing a certain amount of practical flight instruction in a given time period.

Despite this very flexible system no evidence exists to highlight that the situation was sub-optimal in safety terms.

As already mentioned above, an additional requirement was added in December 2006 (JAR FCL Amendment 7) asking for a proficiency check for at least each alternate revalidation of a FI(A) rating as one of two requirements to be fulfilled to comply with the requirement.

Taking this into account the Agency estimates that option 4F (i.e. every 6 years) will not be less safe than 4B (every 3 years). On the contrary, extending the period to 9 years (options 4I and 4J), in the face of a fast technical and operational evolution, could raise safety concerns.

Since presently, from the FCL point of view the major concerns are related to general aviation, options 4I and 4J would be more or less equivalent in safety terms.

Furthermore the Agency has been unable to clearly identify any potential advantage deriving from a proficiency check in flight of the specific skill for the training of student pilots, in comparison with a refresher seminar. This also considering that the state of the art in 6/9 years could well evolve, while in any case all pilots will be subject to a proficiency check focused on their piloting abilities, every 6 years.

The above considerations lead to the scores in following Table 101:

Specific Objectives	Scoring of options			
	4B	4F	4I	4J
	2 rqmts every 3 yrs	2 rqmts every 6 yrs	2 rqmts plus check every 6/9 yrs	2 rqmts plus check every 9 yrs
Proficiency checks for pilots	3	3	3	3
Proficiency checks for instructors	1	1	3	2
<b>TOTAL</b>	<b>4</b>	<b>4</b>	<b>6</b>	<b>5</b>
<b>AVERAGE SCORE (Tot/2 quantified parameters)</b>	<b>2</b>	<b>2</b>	<b>3</b>	<b>2.5</b>
<b>WEIGHTED AVERAGE (Score x 3 for safety)</b>	<b>6</b>	<b>6</b>	<b>9</b>	<b>7.5</b>

**Table 101: Scoring of the safety impact**

#### *2.10.4 Environmental impact*

Any of the four options under consideration will not lead to any significant number of additional flight hours. **All of them have therefore to be considered neutral in environmental terms.**

#### *2.10.5 Economic Impact*

##### 2.10.5.1 Regulatory cost for the Agency

Whichever option is selected, the tasks of the Agency in respect of rulemaking, safety analysis and standardisation will remain unchanged, with respect to today's situation.

No certification/role at all is established for the Agency in respect of pilot licences or FI certificates and their renewal or revalidation. In other words there is no economic impact on the Agency, which means no financial flow from either the FIs or the taxpayers towards it. This will apply to any of the four options under consideration.

##### 2.10.5.2 Additional income for the competent authorities

The UK CAA, in August 2008, was informing stakeholders that the administrative charge for the renewal of any rating in a pilot licence, including FI, was 78 £<sup>74</sup>. This charge covers the purely administrative costs inside the UK CAA, since the application shall be supported by a evidence (e.g.; currency and attestation of frequency of a refresher seminar) suitable for the purpose. In other words the cost of the proficiency check in flight or of the seminar is not included in the mentioned charge.

On 07 August 2009 the exchange rate was 0.7925 £ for 1 €.

<sup>74</sup> <http://www.caa.co.uk/docs/1352/PLS%20Enclosure%200708.pdf>

Therefore 78 £ = **around 98 € to be paid by the applicant for renewal of a FI rating or certificate.**

It is assumed that, in terms of order of magnitude, similar charges will be established by all the competent authorities in the EU 27 + 4.

For any of the four options under consideration the validity of the FI certificate will be 3 years. Therefore in any case FIs will have to apply for renewal with this periodicity. The total administrative cost will depend on the number of applications/year and not on the requirements to be fulfilled. The number of FI has been estimated (paragraph 2.10.2.4 above) in 100,159. It is assumed that slightly less than one third of them (i.e. 30,000), since some FI will not require the renewal, will apply in one year for renewal.

In conclusion the additional income for the competent authorities, **in any of the options under consideration, will be 30,000 x 98 = 2,940 k€ per year.**

It is herein assumed that in any of the four options under consideration, the charges paid by the applicants will cover 100% of the internal costs of the authorities to administer the renewal of the FI certificates. Therefore there is no financial flow from the taxpayers to the authorities in relation to any of the four options under consideration. Should one or more States decide differently, this will not be Community responsibility and therefore it does not belong to the present RIA.

#### 2.10.5.3 Additional demand

In paragraph 2.10.2.4 above the number of affected entities has been estimated for the four options under consideration. These entities included direct employment estimated in terms of FTEs for:

- TK teachers; and
- Flight examiners.

Herein it is assumed again that, for these categories of professionals, the cost on one FTE is in the order of 50,000 €.

Therefore, the total additional demand generated by the requirements for the renewal of the FI certificate, can be estimated as in Table 102 below:

OPTION		Additional demand				
Id.	Description	TK teachers		Exam.		TOTAL
		FTEs	K€	FTEs	K€	K€
4B	2 requirements every 3 years	8	400	45	2,250	2,650
4F	2 requirements every 6 years	3	150	17	850	1,000
4I	Check every 6 or 9 years	7	350	55	2,750	3,100
4J	Check every 9 years	8	400	52	2,600	3,000

**Table 102: Additional demand created**

In turn it is assumed that this additional demand will generate income for States, on the basis of income tax, value added tax or other, in the order of 20%.

Therefore the additional tax generated by is then:

- 530 k€/year in the case of option 4B;
- 200 k€/year in case of option 4F;
- 620 k€/year in case of option 4I; and
- 600 k€/year in case of option 4J.

#### 2.10.5.4 Safety dividend

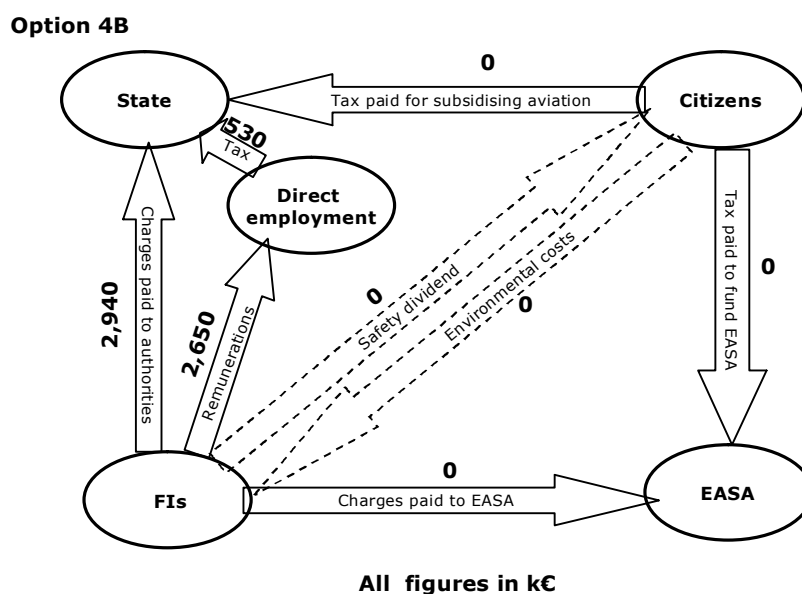
In paragraph 2.10.3 above it has been stated that no sufficient data exist to quantify the safety contribution by the mechanisms used to assess proficiency of FI. Therefore, for any of the four options under consideration, a negligible safety dividend is assumed, i.e. neither additional damage, nor societal benefit due to less accidents.

#### 2.10.5.5 Environmental burden

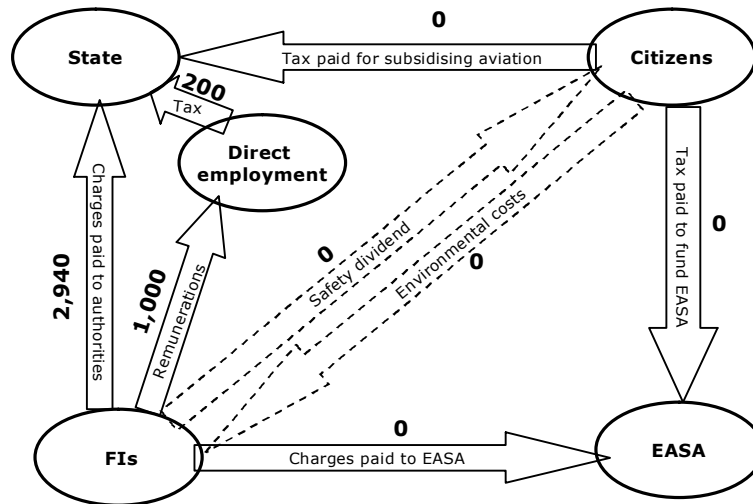
For the considerations exposed in 2.10.4 there is equally no economic burden deriving from the environmental impact of any of the four options under consideration.

#### 2.10.5.6 Summary of economic impact

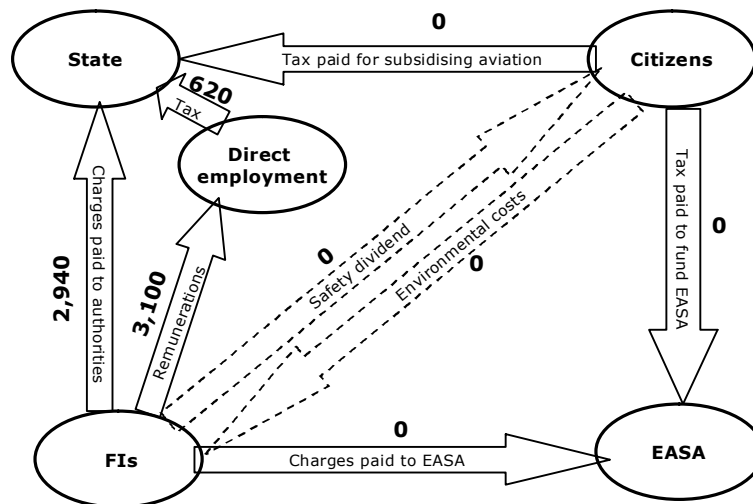
The economic flows estimated above can be presented in the Figures 20, 21, 22 and 23 below:



**Figure 20: Economic flows for option 4B**

**Option 4F**

All figures in k€

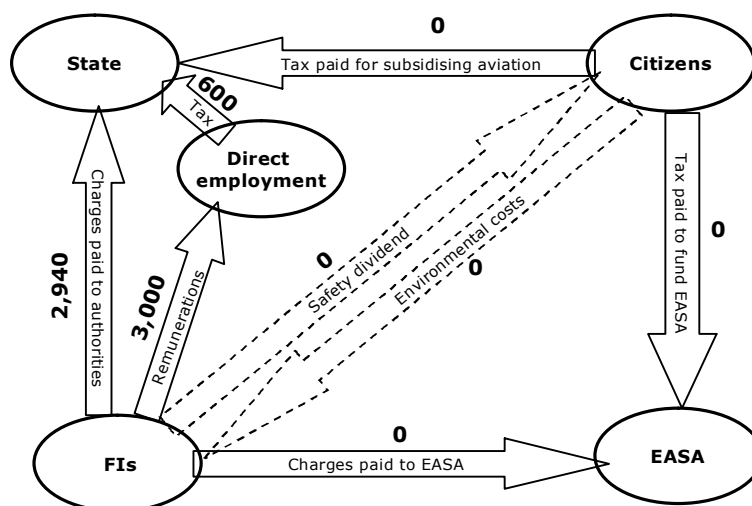
**Figure 21: Economic flows for option 4F****Option 4I**

All figures in k€

**Figure 22: Economic flows for option 4I**



Option 4J



All figures in k€

Figure 23: Economic flows for option 4J

The orders of magnitude estimated in the four graphs above can be summarised in Table 103 below:

Parameter	4B	4F	4I	4J
	2 rqmts every 3 yrs	2 rqmts every 6 yrs	2 rqmts plus check every 6/9 yrs	2 rqmts plus check every 9 yrs
From taxpayers to national authorities (k€)	0	0	0	0
From taxpayers to EASA	0	0	0	0
<b>Total from taxpayers to fund aviation (k€)</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
From applicants to national authorities	2,940	2,940	2,940	2,940
From applicants to EASA	0	0	0	0
<b>Total from applicants to authorities</b>	<b>2,940</b>	<b>2,940</b>	<b>2,940</b>	<b>2,940</b>
<b>TOTAL from citizens to public sector</b>	<b>2,940</b>	<b>2,940</b>	<b>2,940</b>	<b>2,940</b>
Safety dividend	0	0	0	0
Environmental burden	0	0	0	0
<b>Benefit for society (k€)</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Additional demand	2,650	1,000	3,100	3,000
Tax generated by additional demand	530	200	620	600

Table 103: Economic flows

In other words:

- No money at all will flow from citizens (taxpayers or applicants) to the Agency for any of the options under consideration;
- No money at all will flow from taxpayers to the aviation competent authorities for any of the options under consideration;
- 2,940 k€/year will flow from FI requesting renewal of their certificate to the aviation competent authorities for any of the four options under consideration;

- Any of the options will be neutral towards society, in terms of safety dividend or environmental burden;
- Options 4F will generate significantly less demand, but in this case it would also be significantly cheaper for FIs.

The monetary terms and the considerations presented above can be translated into scoring, versus the applicable specific objectives, in following Table 104:

Specific Objectives	Scoring of options			
	4B	4F	4I	4J
	2 rqmts every 3 yrs	2 rqmts every 6 yrs	Check every 6/9 yrs	Check every 9 yrs
Proficiency checks for pilots	0	0	0	0
Proficiency checks for instructors	1	- 1	1	1
<b>TOTAL</b>	<b>1</b>	<b>- 1</b>	<b>1</b>	<b>1</b>
<b>AVERAGE SCORE (Tot/2 quantified parameters)</b>	<b>0.5</b>	<b>- 0.5</b>	<b>0.5</b>	<b>0.5</b>
<b>WEIGHTED AVERAGE (Score x 2 for economy)</b>	<b>1</b>	<b>- 1</b>	<b>1</b>	<b>1</b>

**Table 104: Scoring of the economic impact**

#### *2.10.6 Social Impact*

##### 2.10.6.1 Competent authorities

**Any of the options** under consideration, implies additional income for the competent authorities in the order of 2,940 k€/year, to compensate for the administrative cost for the renewal of FI certificates. Assuming a cost of 60 k€/FTE in said authorities, this additional income translates into **49 FTEs**.

##### 2.10.6.2 FTEs deriving from additional demand

The number of FTEs deriving from additional demand has already been estimated in paragraph 2.10.2.4 above, as:

- 8 new FTEs for TK teachers, and 45 for examiners, in case of option 4B;
- 3 new FTEs for TK teachers, and 17 for examiners, in case of option 4F;
- 7 new FTEs for TK teachers, and 55 for examiners, in case of option 4I;
- 8 new FTEs for TK teachers, and 52 for examiners, in case of option 4J.

##### 2.10.6.3 Other social impacts

However, in qualitative terms, it has to be noted that option 4F (i.e. 2 requirements every 3 years) will cause significantly lower costs for FIs. Options 4B and 4F depart from the present situation for the JAR FCL licences (FI(A) and (H)) in many EU 27 + 4 Member States; for the instructor certificates (S), (B) and (As) this might be the same situation as in several countries there is no proficiency check for these instructor certificates in place so far. Additional proficiency checks may even cause the continuation of slow decline of general aviation activities, including because of the shortage of flight instructors. The latter in fact, may consider the requirements too heavy and not justified by sufficient safety needs. In social terms this has to be considered negative.

##### 2.10.6.4 Summary of social impact

The orders of magnitude of the additional jobs estimated in 2.10.6.1 and 2.10.6.2 above can be summarised in Table 105 below:

FTEs	Options			
	4B	4F	4I	4J
	2 rqmts every 3 yrs	2 rqmts every 6 yrs	2 rqmts plus check every 6/9 yrs	2 rqmts plus check every 9 yrs
national authorities	49	49	49	49
EASA	0	0	0	0
<b>TOTAL newly created jobs in the public sector</b>	<b>49</b>	<b>49</b>	<b>49</b>	<b>49</b>
TK teachers	8	3	7	8
Flight examiners	45	17	55	52
<b>TOTAL newly created jobs in the private sector</b>	<b>53</b>	<b>20</b>	<b>62</b>	<b>60</b>
<b>TOTAL newly created jobs</b>	<b>102</b>	<b>69</b>	<b>111</b>	<b>109</b>

**Table 105: Social impact in terms of FTEs**

From above Table 104, it can be observed that option 4B could create around 100 jobs, while option 4F will create only about 70 jobs, in majority in the public sector. The options 4I or 4J could create around 110 new jobs and with an amount of around 60 jobs in the private sector.

The above new jobs and the qualitative considerations in 2.10.6.3 are then translated into scores versus the applicable specific objectives in following Table 106:

Specific Objectives	Scoring of options			
	4B	4F	4I	4J
	2 rqmts every 3 yrs	2 rqmts every 6 yrs	2 rqmts + check every 6/9 yrs	2 rqmts + check every 9 yrs
Proficiency checks for pilots	0	0	0	0
Proficiency checks for instructors	3	2	1	1
Number of pilot licences	1	0	1	1
<b>TOTAL</b>	<b>4</b>	<b>2</b>	<b>2</b>	<b>2</b>
<b>AVERAGE SCORE (Tot/3 quantified parameters)</b>	<b>1.33</b>	<b>0.67</b>	<b>0.67</b>	<b>0.67</b>
<b>WEIGHTED AVERAGE (Score x 2 for social impact)</b>	<b>2.7</b>	<b>1.3</b>	<b>1.3</b>	<b>1.3</b>

**Table 106: Scoring of the social impact**

#### 2.10.7 Regulatory harmonisation

##### 2.10.7.1 Compatibility with other EU regulations

No relationship with other EU rules has been identified for any of the options under consideration.

##### 2.10.7.2 Compatibility with ICAO standards

Standard 1.2.5.1 in ICAO Annex 1 requires Contracting States, having issued a pilot licence, to ensure that the privileges granted by that licence, or by related ratings (i.e. including FI), are not exercised unless the holder maintains competency and meets the requirements for recent experience established by that State. In other words, ICAO leaves States completely free to determine the methods and the periodicity of the assessments of checks, to be used for renewal of the FI certificate. Any of the four options under consideration is therefore equally compliant with the ICAO requirements.

##### 2.10.7.3 Comparison with the FAA rules

In the USA FAR Part 61.197 (Renewal of flight instructor certificates), for the renewal of a flight instructor certificate requires:

- Passing a practical proficiency test; **or**
- Presenting appropriate records of training activity; **or**
- Presenting a graduation certificate showing that, within the preceding 3 calendar months, the person has successfully completed an approved flight instructor refresher course consisting of ground training or flight training, or a combination of both.

There the validity of the FI certificate is 24 months.

Option 4B (i.e. 2 requirements to be demonstrated every 3 years), is heavier the FAA requirement of only 1 requirement to be demonstrated (although every two years).

Option 4F (i.e. one requirement every 3 years and two every 6 years) is more or less equivalent to the FAA rules.

Options 4I and 4J are more severe than the FAA rules in terms of content, but much more relaxed in terms of periodicity.

#### 2.10.7.4 Summary of impact on regulatory harmonisation

The above considerations are then translated into scores related to the applicable specific objectives in following Table 107:

Specific Objectives	Scoring of options			
	4B	4F	4I	4J
	2 rqmts every 3 yrs	2 rqmts every 6 yrs	Check every 6/9 yrs	Check every 9 yrs
Compliance with ICAO standards	2	2	2	2
Compatibility with other EU rules	1	1	1	1
Harmonise EASA and FAA rules	1	2	- 1	- 2
<b>TOTAL</b>	<b>4</b>	<b>5</b>	<b>2</b>	<b>1</b>
<b>AVERAGE SCORE (Tot/3 quantified parameters)</b>	<b>1.33</b>	<b>1.67</b>	<b>0.67</b>	<b>0.33</b>
<b>WEIGHTED AVERAGE (Score x 1 for global harmonisation)</b>	<b>1.33</b>	<b>1.67</b>	<b>0.67</b>	<b>0.33</b>

**Table 107: Scoring of impact on regulatory harmonisation**

Clearly option 4F and 4B are the most harmonised with the global regulatory framework.

#### *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 2.10.7, the following matrix for MCA can be provided:

Weighted score of options for proficiency of instructors		4B	4F	4I	4J
		2 rqmts every 3 yrs	2 rqmts every 6 yrs	2 rqmts +Check every 6/9 yrs	2 rqmts +Check every 9 yrs
Key Performance Area	Weight				
Safety	3	6	6	9	7.5
Environmental	3	0	0	0	0
Economic	2	1	-1	1	1
Social	2	2.7	1.3	1.3	1.3
Global harmonisation	1	1.3	1.7	0.7	0.3
<b>WEIGHTED TOTAL</b>		<b>11</b>	<b>8</b>	<b>12</b>	<b>10.1</b>

**Table 108: Multi Criteria Analysis for proficiency of instructors**

From Table 108 above one can observe that that option 4I scores better than the options 4B and 4J (although both options show also a high score) but about 50% better than 4F. In particular, option 4I:

- Is the best in safety terms;
- is environmentally neutral;
- has, although creating additional costs for the FIs, a positive effect in terms of economic impact (on the same level as the options 4B and 4J);
- scores on an acceptable positive level in terms of social impact and regulatory harmonisation.

## **2.11 Examiners**

### *2.11.1 Alternative options*

In the JAR-FCL system, examiners worked on behalf of the national aviation authorities: they exercised competences that were not theirs, but 'delegated' or allocated to them by the authority. Therefore the authority, not the market, determined how many examiners it needed. Conversely the same authorities decided which were the requirements that they would have to comply with (although JAR-FCL established some requirements, a lot of the details were left to the discretion of the authority). Finally the authorities designated and allocated the examiners to the concrete flight exams. This system worked on the assumption that the competence to conduct exams belonged to the authority, who just delegated it to the examiners.

The system established by article 7(5) of the Basic Regulation and paragraph 1.j.1 of the essential requirements for pilot licensing is now different. **Examiners now draw their privilege to assess the skill of pilots directly from the Community law**, when they comply with the related requirements. This is attested by a certificate, which authorises them to conduct skill tests and proficiency checks. Therefore, when conducting a skill test or proficiency check, examiners are no longer acting on a delegation from the authority, but exercising the privileges that are given to them by the certificate they hold (i.e. like physicians, lawyers, chartered engineers and similar).

With this new system, it is no longer possible for the Authority to determine the number of examiners (to do so would violate the principle of right of access to a profession).

But it has also to be assessed whether the requirements to obtain the examiner certificate remain at the discretion of the authority, or which degree of commonality at EU level they need, to ensure a level playing field. In this respect the Agency has therefore identified three possible alternative options:

- **Option 7A** (i.e. "do nothing"), which leaves to competent **authorities at national level to determine the requirements** applicable to examiners;
- **Option 7B** to establish common requirements for examiners at EU level, in turn based on the JAR-FCL;
- **Option 7C** to establish new and comprehensive common requirements and associated privileges.

### *2.11.2 Target group and number of entities concerned*

#### 2.11.2.1 Competent Authorities

In **option 7A** examiners will continue to act under delegation by the competent authorities and they might not need a specific certificate. In other words nothing will change with respect to the present situation, and therefore there will be **no impact on the competent authorities**.

For **options 7B or 7C**, according to Article 7.6(b) of the Basic Regulation, the Commission has to adopt supplementing measures (i.e. implementing rules) also for the examiner (FE/CRE/TRE/FIE) certificates: i.e. issue, categories, of examiners, validity, currency and revalidation requirements and so on. These certificates are issued and revalidated by competent authorities at national level. The number of affected competent authorities is then in this case **equal to number of EASA Member States: 27 + 4 = 31**.

Finally, **whichever is the preferred option there will be no impact at all on the tasks, budget or staff of the Agency**.

### 2.11.2.2 Examiners (FE/CRE/TRE/SFE)

In March 2007 the Agency has asked quantitative data to the Member States including the number of examiners, whether they were qualified according to JAR-FCL rules (Question 1 in said questionnaire) or according to national rules based on the ICAO SARPs (Question 2). 13 States replied to said questions and declared a total of 8,329 examiners. Said 13 States, according to EUROSTAT data<sup>75</sup>, represent around 53% of the EU 27 + 4 population, but around 60% of the flights over the continent. Therefore, using this last percentage, the received information can be extrapolated to the totality of the **EU 27 + 4**, leading to a **total of examiners in the range of 14,101**. Since **option 7A will not change** the present situation, the Agency estimates that for it, indeed the number of affected FE will be in the same order of magnitude.

In case of **option 7B** the JAR-FCL requirements will become legally binding within the EU 27 + 4. It has to be noted that, differently from the ICAO SARPs that are "minimum" requirements, in the EU legal order States cannot introduce additional rules or requirements, since this will distort the internal market. Therefore, in case of option 7B FE certificates based on national rules will not be possible any more. There will therefore be a **slight reduction** in the number of FE.

Finally, in case of **option 7C** (not considering in present RIA examiners for ratings), new categories of examiners will be introduced, leading to an additional number of examiners. Furthermore the examiner will have his/her personal privileges and the possibility of being remunerated by the "customers". Also this will lead to an additional number of examiners. This effect, combined with the additional demand for examiners and flight instructor examiners already estimated in 2.6.2.4, 2.7.2.4, 2.8.2.4, 2.9.2.4 and 2.10.2.4 above, is estimated in the order of **+ 5%**.

Where baseline data (i.e. for option 7A) are not available, it is recalled that a total number of 296,332 (A) and (H) pilots has been estimated, for the EU 27 + 4, in paragraph 2.3.1 above. This means that 8,283 (i.e. 7,062 + 1,092 + 31 + 100) examiners represent more or less 2.8% of the total pilot population.

All the above data and considerations, then lead to the estimation of the affected FE presented in Table 109 below:

Pilot licence	Examiners versus options			
	7A	7B	7C	
	No common rules	JAR-FCL requirements	New requirements	
	As present situation	No national examiners allowed	Additional in case of option 7C	Total
<b>Examiner (A)</b>	7,062*	7,062	+ 5%	7,415
<b>Examiner (H)</b>	1,092*	1,092	+ 5%	1,147
<b>Examiner (As)</b>			Not estimated	
<b>Examiner (S)</b>	2,028**	2,028	+ 5%	2,129
<b>Examiner (B)</b>	253***	253	+ 5%	266
<b>Partial total in 13 States</b>	<b>8, 185</b>	<b>8,185</b>		
<b>FE (A) on national rules</b>	100	0		
<b>Partial total in 13 States</b>	<b>100</b>	<b>0</b>		
<b>TOTAL in 13 States</b>	<b>8,285</b>	<b>8,185</b>		<b>10,990</b>
<b>% population</b>	<b>53%</b>			
<b>% flight</b>	<b>60%</b>			
<b>Extrapolation of total to EU 27 + 4</b>	<b>13,808</b>	<b>13,642</b>		<b>18,317</b>
<b>National Examiners (B)</b>	44****	0		
<b>Extrapolation for Examiners (B) to EU 27 + 4</b>	<b>293</b>	<b>293</b>	<b>+ 5%</b>	<b>308</b>
<b>Grand TOTAL</b>	<b>14,101</b>	<b>13,935</b>		<b>18,625</b>

\* based on JAR FCL

\*\* 2.8% of 72,439 sailplane pilots

\*\*\* 2.8% of 9,047 BPL

\*\*\*\* reported only by UK, which represents 12% of the population and about 15% of flights.

<sup>75</sup> [http://ec.europa.eu/dgs/energy\\_transport/figures/pocketbook/doc/2007/pb\\_1\\_general\\_2007.pdf](http://ec.europa.eu/dgs/energy_transport/figures/pocketbook/doc/2007/pb_1_general_2007.pdf)

**Table 109: Estimated number of FE in the EU 27 + 4**2.11.2.3 Directly generated employment

It is assumed herein that there will be neither direct impact on the physicians, nor on aircraft/engine maintenance engineers, deriving from any of the possible options under consideration. It is assumed in fact that these examiners will anyway fly and by definition, as pilots, they are already subject to medical requirements.

On the contrary the major **impact will be on TK teachers**, for the refresher seminars<sup>76</sup>, **and on senior FE (or inspectors)** for the possible proficiency checks. For these categories the number of involved entities (not in terms of head count but in terms of Full Time Equivalents (FTEs) is estimated immediately below.

It is recalled that in the present RIA the Agency assumes that **1 FTE represents in average 1,000 classroom hours for TK teachers or 500 flying hours/year** in the case of examiners).

In **option 7A** there will be **no additional FE and therefore no additional demand** at all.

In **option 7C** there will be additional 4,524 (i.e. 18,625 – 14,101) examiners. It is assumed that their certificate will be valid 3 years, and therefore 1/3 of them (i.e. **1508**) **will attend an examiner refresher seminar of 1 day (= 7.5 hours) per year**. This will drive an additional demand for TK teachers.

In addition, for same option 7C, this 1,508 examiners/year will have to be “observed” during one of their skill or proficiency checks, by one senior FE or flight inspector. This will drive additional demand as well. Vice versa, **option 7B will lead to a reduction of examiners in range of – 166** (i.e. difference between 14,101 and 13,395). This will conversely lead to a reduced demand for TK teachers and senior FE in proportion to  $-166/3 = -55$ .

The above data and considerations can then be presented in summary, with respect to the number of FTEs for TK teachers, in Table 110 below:

Option		N. examiners at seminar /year	N. lesson hours/person	N. persons/ classroom	Classroom hours	FTEs for TK teachers
<b>7A</b>	<b>No common rules</b>	0	0	N.A.	0	0
<b>7B</b>	<b>JAR-FCL requirements</b>	- 55	7.5	5	- 82	- 0.1
<b>7C</b>	<b>New common rules</b>	1508	7.5	5	2,262	2

**Table 110: Number of FTEs for TK teachers**

Along the same lines the number of FTEs for senior examiners can be calculated as in Table 111 below:

Option		Examiner observation of skill test checks/year	Flight check hours		FTEs for senior FE
			Per person	Total	
<b>7A</b>	<b>No common rules</b>	0	0	0	0
<b>7B</b>	<b>JAR-FCL requirements</b>	- 55	1	- 55	- 0.1
<b>7C</b>	<b>New common rules</b>	1,508	1	1,508	3

**Table 111: Number of FTEs for senior examiners**

<sup>76</sup> Proposed rule FCL.1015 on examiners standardisation, in NPA 2008-17b.

#### 2.11.2.4 Summary of affected entities

In conclusion, on the basis of the information in sub-paragraphs 2.11.2.1, 2.11.2.2 and 2.11.2.3 above, the number of concerned entities is estimated in Table 112 below:

OPTION		Auth.	Examiners	FTEs	
Id.	Description			TK teachers	Senior Examiners
<b>7A</b>	<b>No common rules</b>	0	14,101	0	0
<b>7B</b>	<b>JAR-FCL requirements</b>	31	13,935	- 0.1	- 0.1
<b>7C</b>	<b>New common rules</b>	31	18,625	2	3

**Table 112: Number of affected entities for examiners**

#### 2.11.3 Safety impact

No quantitative data emerged from the safety analysis which could be related to the examiners.

Nevertheless some qualitative considerations can be provided. In fact the legislator has tasked EASA<sup>77</sup> to pursue the principal objective of an “high”, but also “uniform” level of civil aviation safety in Europe. In turn safety regulation is based on legal certainty of the affected persons, their duties and privileges, otherwise safety cannot be subject to proper oversight.

As a consequence, option 7A (i.e. no common rules), in safety terms would:

- represent a regression from present situation, largely driven by JAR-FCL;
- not contribute at all towards the rising of the safety standards throughout Europe;
- be detrimental since obviously leading to non-uniformity;
- make it difficult to clearly identified the legal responsibilities and privileges of the examiners.

Option 7B (i.e. common rules, legally binding, but with content identical to JAR-FCL which leaves ample margins to national variants), would also maintain non-uniformities and, since the JAR-FCL requirements in this field are not exhaustive, would as well lead to legal uncertainties.

Finally, option 7C, by clearly recognising examiners through a certificate based on common requirement, and giving him/her the same privileges across the entire EU 27 + 4, will contribute to better standardisation of the examiners (i.e. raise the safety level) and definitely to uniformity and legal certainty.

Quality and safety of the work are also affected by the number of examiners, which will be increased by option 7C and slightly reduced by option 7B.

The above qualitative considerations lead to the scores presented in following Table 113:

Specific Objectives	Scoring of options		
	7A	7B	7C
	No common rules	JAR-FCL requirements	New requirements
Common requirements for examiners	- 3	1	3
Number of pilot licences	0	- 1	2
<b>TOTAL</b>	<b>- 3</b>	<b>0</b>	<b>5</b>
<b>AVERAGE SCORE (Tot/2 quantified parameters)</b>	<b>- 1.5</b>	<b>0</b>	<b>2.5</b>
<b>WEIGHTED AVERAGE (Score x 3 for safety)</b>	<b>- 4.5</b>	<b>0</b>	<b>7.5</b>

**Table 113: Scoring of the safety impact**

<sup>77</sup> Article 2.1 of the Basic Regulation.



From Table 112 above, it can be observed that only option 7C would be definitively positive in safety terms.

#### *2.11.4 Environmental impact*

None of the three options under consideration will lead to additional flight hours. They all have therefore to be considered neutral in environmental terms.

#### *2.11.5 Economic Impact*

##### 2.11.5.1 Regulatory cost for the Agency

Whichever option is selected, the tasks of the Agency in respect of rulemaking, safety analysis and standardisation will remain unchanged, with respect to today's situation.

No certification/role at all is established for the Agency in respect of pilot licences or examiner certificates and their renewal or revalidation. In other words there is no economic impact on the Agency, which means no financial flow from either the examiners or the taxpayers towards it. This will apply to any of the three options under consideration.

##### 2.11.5.2 Additional income for the competent authorities

The UK CAA, in August 2008, was informing stakeholders that the administrative charge for the issue of a flight instructor rating, was 108 £<sup>78</sup>. This charge covers the purely administrative costs and does neither include the "observed" flight nor the refresher seminar. It is assumed that the charges for a FE certificate will be in the same order of magnitude as for the FI.

On 07 August 2009 the exchange rate was 0.7925 £ for 1 €.

Therefore 108 £ = **around 136 € to be paid by the applicant for the issue of an examiner certificate.**

It is assumed that, in terms of order of magnitude, similar charges will be established by all the competent authorities in the EU 27 + 4.

The total administrative cost will depend on the number of applications/year and not on the requirements to be fulfilled. In option 7A there will be no additions=al (or less) examiner with respect to today situation. In many cases examiner certificates will not be introduced where they do not exist today. In other words **option 7A will imply no additional transfer of money from examiners towards competent authorities.**

The number of additional examiners has been estimated (paragraph 2.11.2.4 above) in 1,508 in case of **option 7C**. Assuming that this increase will happen in 3 years, this means around 503 new examiner certificates per year. In conclusion the additional income for the competent authorities, in this case, **will be 503 x 136 = 68 k€ per year.**

Vice versa in option 7B there will be – 55 examiners, i.e., no additional demand at all and no additional income for the authorities.

Furthermore it is herein assumed that in any of the three options under consideration, the charges paid by the applicants will cover 100% of the internal costs of the authorities to administer the examiner certificates. Therefore there is no financial flow from the taxpayers to the authorities in relation to any of the said options. Should one or more States decide differently, this will not be Community responsibility and therefore it does not belong to the present RIA.

##### 2.11.5.3 Additional demand

In paragraph 2.11.2.4 above the number of affected entities has been estimated for the three options under consideration. These entities included direct employment estimated in terms of FTEs for:

<sup>78</sup> <http://www.caa.co.uk/docs/1352/PLS%20Enclosure%200708.pdf>

- TK teachers; and
- Senior examiners.

Herein it is assumed again that, for these categories of professionals, the cost on one FTE is in the order of 50,000 €.

Therefore, the total additional demand generated by the new (or lost) examiners can be estimated as in Table 114 below:

OPTION		Additional demand				
Id.	Description	TK teachers		Senior Examiners		TOTAL
		FTEs	K€	FTEs	K€	K€
7A	No common rules	0	0	0	0	0
7B	JAR-FCL requirements	- 0.1	- 5	- 0.1	- 5	- 10
7C	New common rules	2	100	3	150	250

**Table 114: Additional demand created**

In turn it is assumed that this additional demand will generate (or reduce) income for States on the basis of income tax, value added tax or other, in the order of 20%.

Therefore the additional (or less) tax generated is:

- 0 k€/year in the case of option 7A;
- - 2 k€/year in case of option 7B;
- 50 k€/year in case of option 7C.

#### 2.11.5.4 Safety dividend

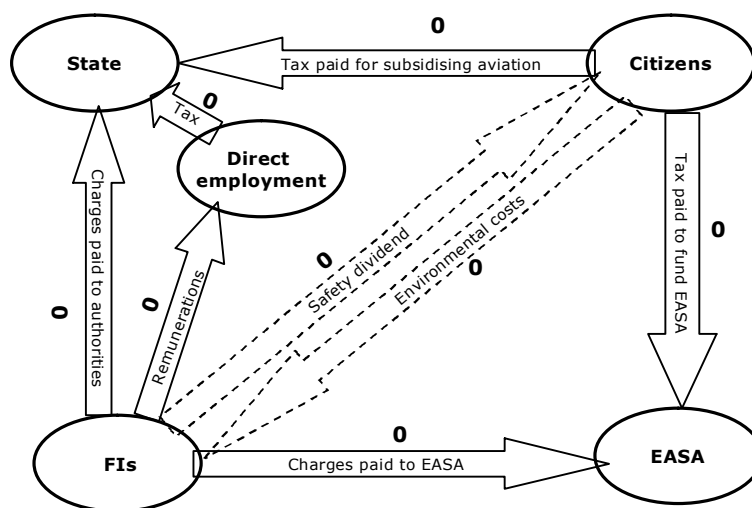
In paragraph 2.11.3 above it has been stated that no sufficient data exist to quantify the safety contribution by the examiners. Therefore for any of the three options under consideration, a non-quantifiable safety dividend is assumed, i.e. neither additional damage, nor societal benefit due to less accidents, expressed in economic terms.

#### 2.11.5.5 Environmental burden

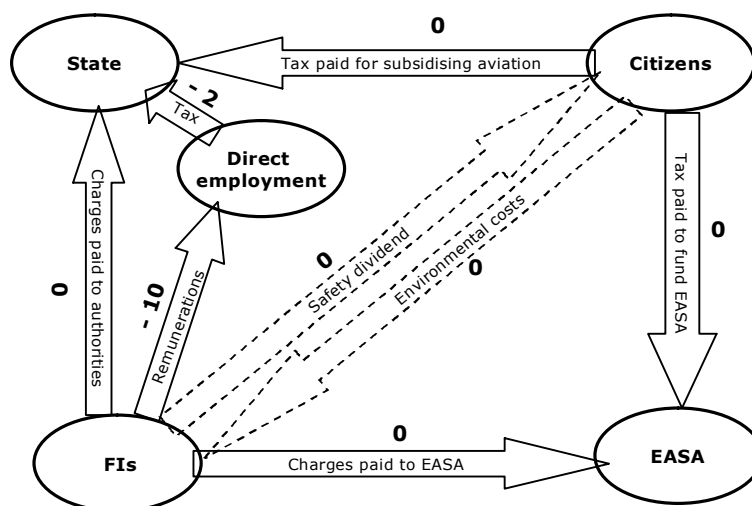
For the considerations exposed in 2.11.4 there is equally no economic burden deriving from the environmental impact of any of the three options under consideration.

#### 2.11.5.6 Summary of economic impact

The economic flows estimated above can be presented in the Figures 24, 25 and 26 below:

**Option 7A**

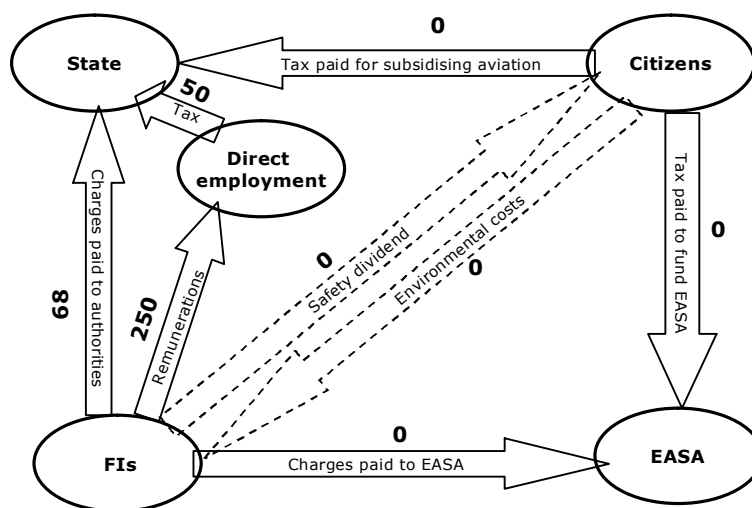
All figures in k€

**Figure 24: Economic flows for option 7A****Option 7B**

All figures in k€

**Figure 25: Economic flows for option 7B**

Option 7C



All figures in k€

Figure 26: Economic flows for option 7C

The orders of magnitude estimated in the three graphs above can be summarised in Table 115 below:

Parameter	Options		
	7A	7B	7C
	No common rules	JAR-FCL requirements	New requirements
From taxpayers to national authorities (k€)	0	0	0
From taxpayers to EASA	0	0	0
<b>Total from taxpayers to fund aviation (k€)</b>	<b>0</b>	<b>0</b>	<b>0</b>
From applicants to national authorities	0	0	68
From applicants to EASA	0	0	0
<b>Total from applicants to authorities</b>	<b>0</b>	<b>0</b>	<b>68</b>
<b>TOTAL from citizens to public sector</b>	<b>0</b>	<b>0</b>	<b>68</b>
Safety dividend	0	0	0
Environmental burden	0	0	0
<b>Benefit for society (k€)</b>	<b>0</b>	<b>0</b>	<b>0</b>
Additional demand	0	- 10	250
Tax generated by additional demand	0	- 2	50

Table 115: Economic flows

In other words:

- No money at all will flow from citizens (taxpayers or applicants) to the Agency for any of the options under consideration;
- No money at all will flow from taxpayers to the aviation competent authorities for any of the options under consideration;
- 68 k€/year will flow from candidate examiners requesting their certificate to the aviation competent authorities for option 7C; nothing for options 7A or 7B;
- Any of the options will be neutral towards society, in terms of safety dividend or environmental burden;

- Option 7A will generate no additional demand, while option 7B will even decrease internal demand;
- Only option 7C will generate additional demand, in the range of 250 k€/year, with a marginal benefit on the additional tax.

The monetary terms and the considerations presented above can be translated into scoring, versus the applicable specific objectives, in following Table 116:

Specific Objectives	Scoring of options		
	7A	7B	7C
	No common rules	JAR-FCL requirements	New requirements
Common requirements for examiners	0	- 1	2
Number of pilot licences	0	- 1	2
<b>TOTAL</b>	<b>0</b>	<b>- 2</b>	<b>4</b>
<b>AVERAGE SCORE (Tot/2 quantified parameters)</b>	<b>0</b>	<b>- 1</b>	<b>2</b>
<b>WEIGHTED AVERAGE (Score x 2 for economy)</b>	<b>0</b>	<b>- 2</b>	<b>4</b>

**Table 116: Scoring of the economic impact**

#### 2.11.6 Social Impact

##### 2.11.6.1 Competent authorities

**Options 7A or 7B** do not imply any additional income for the competent authorities and therefore **no new jobs** therein.

**Option 7C** will lead to a small additional income in the order of only 68 k€/year, to compensate for the administrative cost for issuing additional examiner certificates. Assuming a cost of 60 k€/FTE in said authorities, this additional income translates into a marginal increase of **1 FTE**.

None of the three options under consideration will lead to any additional task, income or job inside the Agency.

##### 2.11.6.2 FTEs deriving from additional demand

Option 7A will neither create additional demand on the market, nor decrease it. So there will be no effect on jobs.

Vice versa the number of additional or lost FTEs deriving from either option 7B or 7C, has already been estimated in paragraph 2.11.2.4 above, as:

- - 0.1 FTEs for TK teachers, and - 0.1 for senior examiners, in case of option 7B;
- Plus 2 new FTEs for TK teachers, and 3 for senior examiners, in case of option 7C.

##### 2.11.6.3 Other social impacts

However, in qualitative terms, it has to be noted that **option 7A** will not only be insufficient in safety terms, but it will also **fail to pursue some of the objectives assigned by the legislator** to EASA, such as:

- Facilitate the free movement of professional and services<sup>79</sup> (e.g. examination in flight);
- Avoid duplication of activities across EU<sup>80</sup> (e.g. to establish national rules for examiners in 27 + 4 States, via separate procedures);
- Provide a level playing field for the internal market<sup>81</sup>;
- Recognition, without additional requirements of examiner certificates<sup>82</sup>.

<sup>79</sup> Article 2.2(b) of the Basic Regulation.

<sup>80</sup> Article 2.2(c) therein.

<sup>81</sup> Article 2.2(f) ibidem.

<sup>82</sup> Article 2.3(b) ibidem.

Furthermore it will not contribute to revitalize the general aviation sector.

**Option 7B** will be **even worse**, since it will contribute to decrease the number of available examiners.

On the contrary option 7C will be highly positive, since pursuing all the objectives fixed by the legislator and also producing few additional examiners.

#### 2.11.6.4 Summary of social impact

The orders of magnitude of the additional jobs estimated in 2.11.6.1 and 2.11.6.2 above can be summarised in Table 117 below:

FTEs	Options		
	7A	7B	7C
	No common rules	JAR-FCL requirements	New requirements
national authorities	0	0	1
EASA	0	0	0
<b>TOTAL newly created jobs in the public sector</b>	<b>0</b>	<b>0</b>	<b>1</b>
TK teachers	0	- 0.1	2
Examiners	0	- 0.1	3
<b>TOTAL newly created jobs in the private sector</b>	<b>0</b>	<b>- 0.2</b>	<b>5</b>
<b>TOTAL newly created jobs</b>	<b>0</b>	<b>- 0.2</b>	<b>6</b>

**Table 117: Social impact in terms of FTEs**

From above Table 117 it can be observed that option 7C could create very few new jobs, almost the totality of which in the private aviation sector, while option 7A will not create any new jobs. Option 7B would be slightly worse, since marginally reducing demand.

The above considerations are then translated into scores for the applicable specific objectives in following Table 118:

Specific Objectives	Scoring of options		
	7A	7B	7C
	No common rules	JAR-FCL requirements	New requirements
Common requirements for examiners	- 3	1	3
Compatibility with other EU rules	- 3	- 1	3
Number of pilot licences	0	- 1	1
<b>TOTAL</b>	<b>- 6</b>	<b>- 1</b>	<b>7</b>
<b>AVERAGE SCORE (Tot/3 quantified parameters)</b>	<b>- 2</b>	<b>- 0.33</b>	<b>2.33</b>
<b>WEIGHTED AVERAGE (Score x 2 for social impact)</b>	<b>- 4</b>	<b>- 0.7</b>	<b>4.7</b>

**Table 118: Scoring of the social impact**

#### *2.11.7 Regulatory harmonisation*

##### 2.11.7.1 Compatibility with other EU regulations

Article 7.5 of the Basic Regulation explicitly mandates an examiner certificate. Article 7.6 b) therein mandates the Commission to adopt common rules for issuing, maintaining, amending, limiting, suspending or revoking such certificates.

The same principle applies to Aircraft Maintenance Licensed (AML) engineers<sup>83</sup>, to Air Traffic Controllers<sup>84</sup> and to all other pilot categories, as proposed by NPA 2008-17.

<sup>83</sup> [http://www.easa.europa.eu/ws\\_prod/g/rq\\_amcgm.php#AMCPart-66](http://www.easa.europa.eu/ws_prod/g/rq_amcgm.php#AMCPart-66)

So option 7A would be totally incompatible with the EU safety regulatory framework, while option 7B, containing only few common requirements, will be insufficient. Option 7C will be fully compatible with said framework.

#### 2.11.7.2 Compatibility with ICAO standards

Examiners are not contemplated in ICAO Annex 1. Since by definition ICAO Annexes only contain "minimum" standard and what is not mentioned therein is left to States' discretion, any of the three options under consideration will be neutral in this respect.

#### 2.11.7.3 Comparison with the FAA rules

According to FAR Part 61.47 an examiner in the USA represents the FAA Administrator. No requirements for FE are contained in said Part 61. None of the three options under consideration will therefore create any incompatibility with FARs.

#### 2.11.7.4 Summary of impact on regulatory harmonisation

The above considerations are then translated into scores related to the applicable specific objectives in following Table 119:

Specific Objectives	Scoring of options		
	7A	7B	7C
	No common rules	JAR-FCL requirements	New requirements
Compliance with ICAO standards	1	1	1
Compatibility with other EU rules	- 3	- 1	3
Harmonise EASA and FAA rules	1	1	1
<b>TOTAL</b>	<b>- 1</b>	<b>1</b>	<b>5</b>
<b>AVERAGE SCORE (Tot/3 quantified parameters)</b>	<b>- 0.33</b>	<b>0.33</b>	<b>1.67</b>
<b>WEIGHTED AVERAGE (Score x 1 for global harmonisation)</b>	<b>- 0.3</b>	<b>0.3</b>	<b>1.7</b>

**Table 119: Scoring of impact on regulatory harmonisation**

Clearly only option 7C is positive in respect of regulatory harmonisation, and in particular consistency with the EU aviation safety regulatory framework.

#### *2.11.8 Multi Criteria Analysis (MCA) and recommended option*

According to the methodology described in paragraph 2.1.2 and the scores attributed in paragraphs 2.11.3 to 2.11.7, the following matrix for MCA can be provided:

Weighted score of options for examiners		7A	7B	7C
Key Performance Area	Weight	No common rules	JAR-FCL requirements	New requirements
Safety	3	- 4.5	0	7.5
Environmental	3	0	0	0
Economic	2	0	- 2	4
Social	2	- 4	- 0.7	4.7
Global harmonisation	1	- 0.3	0.3	1.7
<b>WEIGHTED TOTAL</b>		<b>- 8.8</b>	<b>- 2.4</b>	<b>17.9</b>

**Table 120: Multi Criteria Analysis for the examiners**

<sup>84</sup> Directive 2006/23/EC of the European Parliament and of the Council of 5 April 2006 on a Community air traffic controller licence (*Official Journal L 114*, 27/04/2006 P. 0022 – 0037).

**From Table 120 above one can observe that that only option 7C scores very positively, while the other two options have a negative score.** In particular, option 7C:

- Is the only one positively scoring in safety terms;
- is environmentally neutral;
- creates limited additional demand for general aviation TK teachers and senior examiners;
- Creates a positive social impact.

## **2.12 Medical certificate for LPL**

### *2.12.1 Alternative option*

As explained in paragraph 2.6, the LPL is being developed to become a relatively cheap “entry” licence for new comers to aviation.

In order to achieve this goal, the rules for LPL will have to be based on less stringent requirements than for the ones provided for the PPL in ICAO Annex I. The proposed new rules should be less stringent than ICAO class 2 medical requirements, such as:

- longer validity periods of the medical certificate (MC)
- aeromedical examinations by General Medical Practitioners (GMPs) instead of Aeromedical Examiners (AMEs);
- less medical examinations and tests required for issuing a medical certificate;
- lower fitness requirements.

Reduced medical fitness may also lead to reduced privileges by applying the limitations also used for ICAO compliant medical certificates, such as:

- Possibility to fly only without passengers;
- Restriction of the period of validity of the medical certificate;
- Restriction to a specified type of aircraft.

With respect to the medical requirements for the proposed LPL, the Agency has identified the following alternative options:

- **5.1A:** Require medical fitness **in compliance with the standards in ICAO Annex 1 for Class 2** medical certificates for private pilots;
- **5.1B:** Require a **Class 2 medical certificate** as per JAR-FCL 3;
- **5.1C:** Create specific requirements for a LPL medical certificate, with **lower fitness requirements** than the full Class 2 medical requirements (as in option 5.1B) and with limited privileges (<2000 kg MTOW, flight only within aerodrome zone).
- **5.1D: “Self declaration”** option, i.e., **do not require a medical examinations** for LPL holders but use a self declaration to confirm fitness signed by the applicant and his family doctor.

### *2.12.2 Target group and number of entities concerned*

#### *2.12.2.1 Competent Authorities*

According to Article 7.2 of the Basic Regulation, all pilots need a medical certificate to exercise the privileges of their licence. These certificates will be issued by Aeromedical Centres (AeMCs) or Aeromedical Examiners (AMEs) at national level and, independently of the preferred option, there will be no financial impact on the budget or staff of the competent authority of a Member State or the Agency.

#### *2.12.2.2 Aeromedical professionals*

A number of aeromedical professionals will be influenced by the introduction of a new licence. Statistical data is summarised in Table 121 below:



State	Nr of AeMCs	Nr of CI 1 and 2 AMEs	Nr of CI 2 AMEs	Nr of GMPs
Denmark	2	18	-	-
Ireland	1	4	22	-
Lithuania	1	4	14	-
Portugal	5	15	44	-
Italy	11	-	80	-
Luxembourg	1	6	-	-
France	9	-	1150	-
Finland	1	33	26	-
United Kingdom	1	247	38	43 000*
Croatia	2	10	1	-
Greece	3	12	8	-
Island	1	6	2	-
Romania	1	4	-	-
Germany	4	185	226	-
Malta	1	4	4	-
Czech Republic	1	32	26	**
Netherlands	3	2	4	***
Cyprus	-	-	3	-
Slovenia	3	5	25	-
Latvia	1	4	-	-
Hungary	2	-	12	-
Sweden	2	152	15	****
Moldova	1	5	5	-
Poland	4	26	10	-
Switzerland	2	75	-	-
Austria	2	60	47	-
Norway	1	160	-	All (no numbers)*****
Belgium	3	15	35	20*****
Total:	69	1084	1797	

**Table 121: Statistical data for aeromedical professionals in the different countries**

- \* There are approximately 43,000 General Medical Practitioners (GMPs) in the UK (reference: King's Fund, 2005). All of them are eligible, by virtue of being registered by the UK General Medical Council as a General Practitioner, to counter-sign a self-declaration of medical history completed by an applicant for a UK National Private Pilot's Licence. However, they are only eligible to do this if they have full access to the applicant's past medical history and this in practice means that the applicant usually sees the GP with whom they are registered under the National Health Service. GMPs are not authorised by the UK CAA because neither do they issue medical certificates, nor do they undertake examinations of pilots.
- \*\* All GMPs can issue Medical Certificates for parachutist, para-glider, hang-glider in one man model
- \*\*\* There are no GMPs authorised in the Netherlands by the IVW-NL. They are not allowed to perform aeromedical examinations for the medical certificates in JAR-FCL 3. However, there are GMPs who perform medical examinations for the Royal Netherlands Aeronautical Association (sailplanes and balloons). This association issues their medical certificates in accordance with ICAO regulations and not with the JAA regulations.
- \*\*\*\* GMPs are not authorised to perform initial aeromedical examinations or to issue medical certificates. However, GMPs are allowed to perform revalidation/renewal examinations for sailplane pilots, balloon pilots and pilots of micro-light aircraft, using the JAR standard forms (application form for a medical certificate and medical examination report form). The assessment of the examination results and the issuing of the restricted class 2 medical certificate must be done by the Aeromedical Section of the Swedish CAA. Because ICAO Annex 1 requires the examination to be performed by an AME this has been filed as a difference to ICAO, and as a consequence these restricted class 2 medical certificates are only valid for licences used to fly

aircraft registered in Sweden and in Swedish airspace, unless a validation has been granted from another State. Those who want to fly outside Sweden should fulfil the JAR-FCL 3 Class 2 requirements, including being examined by an AME. None of these GMPs are authorised by the Swedish CAA, because it is outside their area of competence to authorise anyone without formal aeromedical training. As a consequence, the authority has no legal right to perform audits of GMPs; this task is restricted to the Ministry of Health and the National Board of Health.

\*\*\*\*\* For sailplanes, balloons, micro light.

\*\*\*\*\* Only GMPs with sailplane experience.

### *2.12.2.3 LPL pilots*

No medical requirements for LPL pilots are today established in the EU. However in the context of the present RIA it is relevant to estimate how many citizens could exploit the possibility of flying for recreational purposes, once the EU-LPL will be in force and will be medically assessed.

In the case of **option 5.1A** (i.e. LPL medical fitness required to be in compliance with ICAO Class 2 medical requirements) and **5.1B** (i.e. LPL medical fitness required to be in compliance with JAR-FCL 3 Class 2 medical requirements), there will be no significant changes in the number of medical examinations.

In case of **option 5.1C** (i.e. LPL medical fitness requirements to be lower than Class 2 medical requirements) applicants wishing to fly will have to overcome a lower threshold in terms of frequency and difficulty. In NPA 2008-17 the Agency has proposed for the LPL applicants/holders one initial medical examination by a General Medical Practitioner (GMP), with validity until the age of 45 years. A periodic revalidation of the medical certificate will be required above this age. As a conservative estimate, it is assumed for the present RIA that all new applicants for LPL will be younger than 45 years of age, i.e. requiring only an initial medical examination.

In the majority of cases, one visit to a GMP is calculated to last around 0.5 hours for young persons in good health. However, in some cases more time with the physician may be necessary and it is assumed that a medical visit to obtain a LPL medical certificate will then take an average of 0.6 hours.

**Option 5.1D** does not require medical examinations for LPL pilots, but a self declaration would be used to confirm fitness. This method would be the easiest way for LPL applicants, but may raise certain safety issues, because their family doctors, who have to sign a self-declaration, do not have sufficient knowledge in aviation medicine and pilots will not be referred to the AME. In addition, the option of self-declaration is not in compliance with the essential requirements for pilot licensing, which require a fitness assessment to be performed.

### *2.12.3 Safety impact*

When discussing possible options for LPL medical certification, the level of medical fitness was evaluated against the complexity of flight tasks performed by applicants on a case by case basis. Options 5.1A and 5.1B would have no safety impact compared to the present situation, because both are currently applied for private flying. However, they are considered disproportionate and overly restrictive for LPL flight tasks. Option 5.1C may be considered to set a lower safety standard, because GMPs have a lower level of aeromedical training than AMEs, but this will be mitigated by a number of measures (MTOW < 2000 kg, flights within aerodrome area, etc.). Therefore, the impact on safety in general is expected to be minimal. Option 5.1D may have negative safety impact according to the opinion of some aeromedical experts, because in the case of health problems there will be no obligatory referral to AME, which is the requirement in option 5.1C.

In countries where LPL-type licenses with lower medical requirements already exist today, it appears to be no evidence that the LPL-type license is significantly less safe than the PPL.

Option 5.1D, however, is a new approach for airplanes and helicopters, which has not been tested in any country. Not to require any medical certificate for LPL pilots, according to the opinion of some experts, may have a negative safety impact.

In the following Table 122 there is an estimated safety impact of different options:

Specific Objectives	Scoring of options			
	5.1A	5.1B	5.1C	5.1D
Proportionate medical rules	-1	-2	3	3
Safety	3	3	1	-1
<b>TOTAL</b>	<b>+2</b>	<b>+1</b>	<b>+4</b>	<b>+2</b>
<b>AVERAGE SCORE (Tot/X quantified parameters)</b>	<b>+1</b>	<b>+0,5</b>	<b>+2</b>	<b>+1</b>
<b>WEIGHTED AVERAGE (Score x 3 for safety)</b>	<b>3</b>	<b>1,5</b>	<b>6</b>	<b>3</b>

Table 122: Scoring of the safety impact

#### 2.12.4 Environmental impact

No relevant environmental impacts have been identified.

#### 2.12.5 Economic Impact

##### 2.12.5.1 Regulatory cost for the Agency

The Agency does not have an active medical certification role for pilots and therefore no financial flow will be constituted from the pilot or the taxpayer to the Agency independently of which option is selected. The tasks of the Agency in respect of rulemaking, safety analysis and standardisation will remain unchanged with respect to today's situation. Therefore none of the options has an economic impact on the Agency.

##### 2.12.5.2 Additional income for the competent authorities

The competent authority will only be involved in cases where the GMP refers a pilot to an AME who in turn refers the decision to the licensing authority. This should happen in very few cases only, as most problematic cases will be solved at AME level. It is also assumed that not all Member States will accept LPL medical certification by GMPs. It is therefore estimated that there will be no additional income, or only a very small additional income, for the competent authorities.

##### 2.12.5.3 Potential cost savings for pilots

The main economic effect of the options presented above results from the cost for medical examinations. Clearly, a medical examination at an Aeromedical centre is significantly more expensive than an examination with a GMP or a self declaration.

In order to estimate the related costs and thereby the potential savings of the less regulated options 5.1c and 5.1d, the number of visits per year and the costs of each visit needs to be estimated.

As it is assumed that each LPL applicant will make one initial visit, the number of visits per year will be the same as the number of new LPL applicants per year. In section 2.6.2 it was estimated that there will be about 8000 new LPL(A), 300 LPL(H), 3200(S) and 440(B) per year. All in all, it is estimated 11940 new LPL per year.

It is assumed, that the cost of a medical examination for LPL is 40 Euro and for PPL – 70 Euro. This cost is assumed because there are hardly any medical tests involved. The price for the PPL medical certificate ranges between 13,00 and 162,00 Euros and may be even higher. The assumption of 70,00 Euro was only made to show the difference of cost even in countries where the cost of class 2 medical certificate is comparatively low. Then it is possible to compare collective price of all aeromedical examinations for LPL and class 2 applicants for the chosen period of time (for example, start to fly at 20 and discontinue at 60 y. o.) as in the following Table 123:

Type of licence	Price of one aeromedical examination (estimate)	Nr of aeromedical exams between age 20 and 60	Collective price
LPL	40	5	200
class 2	70	20	1400

**Table 123: Price of medical certificates**

From the table it can be calculated that the estimated savings for one LPL holder during his/her flying career between age 20 and 60 would be 1200 Euro. Having in mind that it was estimated that there will be about 11940 new LPL per year, collective savings in the case of option 5.1C may be estimated at 14 328 000 Euro per year.

#### 2.12.5.4 Summary of economic impact

The main economic impact as regards the medical requirements is derived from the savings in the costs for medical examinations. Option 5.1D is the most favourable option in this respect, followed by option 5.1C. The other options do not significantly change the current practice and thus do not induce any significant economic impact.

The monetary terms explained above, are then translated into scoring in the following Table 124:

Specific Objectives	Scoring of options			
	A	B	C	D
Proportionate medical rules	-1	-2	1.5	2
<b>TOTAL</b>	<b>-1</b>	<b>-2</b>	<b>1.5</b>	<b>2</b>
<b>AVERAGE SCORE (Tot/X quantified parameters)</b>	-1	-2	1.5	2
<b>WEIGHTED AVERAGE (Score x 2 for economy)</b>	-2	-4	3	4

**Table 124: Scoring of the economic impact**

#### *2.12.6 Social Impact*

##### 2.12.6.1 Competent authorities

No social impact on competent authorities is estimated.

##### 2.12.6.2 Agency

No social impact on the Agency is estimated.

##### 2.12.6.3 Pilots

Options 5.1A and 5.1B would not lead to any changes as compared to the present situation. Option 5.1C would reduce medical certification costs for LPL pilots for several reasons: increased periods of validity of medical certificates, simplified medical examination procedures, less medical tests and the use of a family doctor service near the place of residency with a subsequent reduction of travel expenses. The social impact of a self declaration to confirm medical fitness to fly (option 5.1D) is similar to the one in option 5.1C except that further cost reduction for the medical examination procedure could occur.

##### 2.12.6.4 Aeromedical professionals

Options 5.1A and 5.1B will not change the current situation. The introduction of specific medical fitness standards for LPL pilots (option 5.1C) will shift part of PPL holders from being medically examined by AME's to medical examination by GMP's. This will reduce the AME income as well as, possibly, their aeromedical experience. It has also to be taken into account that some PPL holders may choose to apply for a LPL licence because of health problems, and be subsequently medically examined by GMP's. However, the rules require the GMP to refer applicants who are not clearly fit for flying to an AME or AeMC for further evaluation. In consequence, these pilots will have to be finally examined by AME's.

##### 2.12.6.5 GMPs deriving from additional demand

In chapter 2.6 it is assumed that a medical visit for LPL will take, in average, 0.6 hours. For self-declaration only family doctor's signature and stamp is needed, therefore this will not take more than 0,1 hours.

Therefore, the number of new FTEs required as GMPs is estimated in Table 125 below:

OPTION		Estimated Number of physicians (GMP)			
Id.	Description	New LPL/yr	Average duration (hours) of the visit	Total number of hours for medical examination/year	Physician GMP
5.1C	GMP acting as AME	11940	0,6	7164	3
5.1D	Self-declaration	11940	0,1	194	0,01

**Table 125: Number of physicians (GMP)**

For options 5.1C and 5.1D, taking into account Table 125 one can assume that the demand of additional physicians in all Member states will be negligible.

#### 2.12.6.6 Summary of social impact

It may seem that options 5.1C and 5.1D offer a substantial social benefit for the pilot community. However, after more precise calculations it became clear, that this is only true for pilots who need not be referred to an AME or AeMC. In cases where LPL pilots are referred to an AME because of health problems the social impact is minimal.

The orders of the estimations in 2.12.6.1 to 2.12.6.4 above can be summarised in Table 126 below:

Specific objectives	Scoring Options			
	5.1A	5.1B	5.1C	5.1D
Social impact	0	0	0	0
<b>TOTAL</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

**Table 126: Social impact in terms of proposed changes**

From Table 126 it can be observed that neither of the options provides sufficient social impact to be compared with the current situation. Therefore, it is estimated that social impact will be negligible.

#### 2.12.7 Global harmonisation

##### 2.12.7.1 Compatibility with ICAO standards

ICAO Annex 1 provisions for pilot licensing include the rules for medical certificates. The standards for class 2 medical certificates apply for private pilots and compliance with these rules is to be ensured by the Contracting States for licences that are used internationally. The proposed new rules for LPL medical certificates in Europe allow AMEs and AeMCs to use less stringent rules for medical certificates. This implies that, in accordance with the Chicago Convention, a difference with the ICAO SARPs will have to be filed and holders of EU LPL licences will need the permission of third countries before flying into, over or within their territory.

However, paragraph 1.2.4.8 in ICAO Annex 1 provides a flexibility clause saying that those pilots who do not fully comply with the medical requirements may nevertheless be issued with a medical certificate if it has been determined that they do not jeopardize safety for medical reasons. A European LPL medical certificate, issued according to basically lower standards than provided for in ICAO Annex 1, could still be of the same medical standard as an ICAO class 2 medical certificate if the flexibility clause has been used, also taking into account that proportionality must be ensured regarding the impact of the rules and the privileges granted to the pilots.

Option 5.1A requires compliance with ICAO Class 2 medical requirements.

Option 5.1B requires compliance with JAR-FCL 3 medical requirements for private pilots. These requirements are more restrictive than the provisions in ICAO Annex 1 which are recognised as minimum standards. For option 5.1B the proportionality regarding the medical requirements and the privileges granted may be in doubt.

Option 5.1C requires compliance with the proposed specific fitness requirements for LPL licences which are lower than ICAO medical standards for private flying.

Finally, option 5.1D envisages a self declaration of a pilot instead of undergoing a medical examination and therefore deviates even further from ICAO medical standards for private flying than option 5.1C.

In the cases of options 5.1C and 5.1D possible safety hazards due to less stringent medical requirements would be mitigated by the limitation of the LPL privileges (<2000 kg MTOW, flight only within aerodrome zone).

#### 2.12.7.2 Comparison with the FAA rules

Medical requirements for sport pilot licences are also contemplated by the FAA Part 61 in the USA<sup>85</sup>. However, according to this, sport pilots in the USA may fly when they have a driver's licence or an FAA medical certificate of any kind. In other words, the FAA does not always require an FAA medical certificate.

Therefore, holders of the EU LPL with a medical certificate issued in accordance with option 5.1C may be routinely authorised to act as pilot in command in the USA. This option should therefore be considered as favourable in this respect.

#### 2.12.7.3 Summary of impact on global harmonisation

Generally there is no significant impact on the global harmonization, but option 5.1C is closest to the medical requirements for Sports pilots (FAA USA) and Recreational pilots (Australia and New Zealand). The impacts on global harmonisation can be summarised as in Table 127 below:

Specific Objectives	Scoring of options			
	A	B	C	D
Harmonise EASA and ICAO rules	3	2	-1	-3
Harmonise EASA and FAA rules	-2	-3	3	0
<b>TOTAL</b>	<b>1</b>	<b>-1</b>	<b>2</b>	<b>-3</b>
<b>AVERAGE SCORE (Tot/X quantified parameters)</b>	0,5	-0,5	1	-1,5
<b>WEIGHTED AVERAGE (Score x 1 for global harmonisation)</b>	0,5	-0,5	1	-1,5

**Table 127: Scoring of impact on global harmonisation**

Clearly 5.1C is the most suitable option of all proposed when considering harmonisation of EASA and FAA rules.

#### *2.12.8 Multi Criteria Analysis (MCA) and recommended option*

According to the methodology described in paragraph 2.1.2 and the scores attributed in paragraphs 2.12.3 to 2.12.7, the following matrix for MCA can be provided:

<sup>85</sup> <http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?c=ecfr&sid=40760189a03dfea0b501608f33820a45&rgn=div5&view=text&node=14:2.0.1.1.2&idno=14#14:2.0.1.1.2.4.1.1>

Weighted score of options for LPL medical requirements		A	B	C	D
Key Performance Area	Weight				
Safety	3	3	1,5	6	3
Environmental	3	0	0	0	0
Economic	2	-2	-4	3	4
Social	2	0	0	0	0
Global harmonisation	1	0,5	-0,5	1	-1,5
<b>WEIGHTED TOTAL</b>		<b>1,5</b>	<b>-3</b>	<b>10</b>	<b>5,5</b>

**Table 128: Multi Criteria Analysis for the LPL medical requirements**

Table 128 above shows that option 5.1C scores positively against options 5.1 A, B and D, which score either less favourably or even negative. Option 5.1 C was chosen for the following reasons: The less stringent medical requirements will enable more applicants to take up private flying and allow LPL pilots to remain medically fit to exercise the privileges of their licences even if their health status decreases. Eventual safety risks resulting from lower medical standards will be mitigated by the restriction to fly only aircraft below 2000 kg MTOW and flights are restricted to the aerodrome zone. Nevertheless, it should be mentioned that some experts expressed concerns that these mitigation measures may not prevent a certain degree of deterioration of flight safety. The longer period of validity of the medical certificate for the LPL results in less visits to a doctor to obtain the certificate and therefore reduces cost for the pilot. The possibility for the GMP to issue medical certificates may reduce the cost of a medical certificate even further and a GMP may be easier to contact than an AME.

Option 5.1D could challenge the selection of option 5.1C. However, like it was explained above, this option does not comply with the essential requirements for pilot licensing. In addition, in order to issue a medical certificate on the basis of a self declaration the doctor has to have knowledge of the complete medical history of the applicant. This is not always the case in the different Member States as medical systems differ. Also, a family doctor who does have the necessary knowledge of the applicant's medical history may find himself in a difficult position if he does not issue the medical certificate but has to refer the applicant to an AME for further investigations.

In conclusion, option 5.1C is most advantageous for LPL applicants in most categories evaluated.

## **2.13 Decision on fitness of pilots for Class 2 medical certificates in contentious cases**

### *2.13.1 Alternative options*

Class 2 medical certificates are presently being issued by an aeromedical examiner (AME) or aeromedical centre (AeMC) after the aeromedical medical examination and assessment of the pilot if he/she complies with the Class 2 requirements in JAR-FCL 3. If full compliance with these provisions cannot be demonstrated, JAR-FCL 3 requires that the pilot is referred to the aeromedical specialist in the authority who will evaluate the case and draw the aeromedical conclusion whether the candidate is fit to fly, fit to fly with limitations or unfit to exercise the privileges of his/her licence.

The way of dealing with pilots who do not fully comply with the requirements was under discussion when drafting the proposed implementing rules and 3 options regarding the aeromedical conclusion and decision on fitness in the contentious cases as described in the paragraph above were identified:

- 5.5A Decision only by the medical specialist in the authority;
- 5.5B Decision by an AeMC or AME;
- 5.5C Decision only by AeMC.

### *2.13.2 Target group and number of entities concerned*

#### 2.13.2.1 Competent Authorities

JAR-FCL 3 was implemented differently throughout the Member States and standardisation visits revealed that some countries delegated the aeromedical conclusions and decisions on the fitness of private pilots in contentious cases to an AeMC. For these authorities, there will be no impact on the budget or staff in

the case of selection of either option 5.5B or 5.5C, whereas there will be a need for staff and additional budget if option 5.5A is the selected one, which would oblige these authorities to internalise the task.

However, in countries where JAR-FCL 3 was fully implemented, the effect detailed above will be the opposite: the competent authority would need less staff for options 5.5B or 5.5C, whereas option 5.5A would not have any impact on the budget.

This difference in implementation of JAR-FCL 3 will not be reflected in the calculations in the following subsections of this chapter and will only be pointed out where necessary. All calculations will be based on the change of procedure from the JAR-FCL 3 system as compared to the new proposed rules.

#### 2.13.2.2 Pilots

The pilots concerned are PPL holders who need a class 2 medical certificate but who do not fully comply with the medical requirements for this class of certificate.

As outlined in Table 5 of this RIA, the estimated number of PPL holders in the 27 + 4 Member States is 173.395. Under the new EU system, around 81.492 pilots of airships, balloons and sailplanes will fall into the category of private flying and need a class 2 medical certificate. However, a yet undetermined number of these pilots may choose to get a LPL instead of the PPL and will therefore not need a class 2 medical certificate. For the purpose of this RIA it is assumed that 50 % of those 234.887 pilots will continue with a PPL and a class 2 medical certificate (117.444 pilots). The Agency is aware of the fact that a considerably lower or higher number of pilots may switch from holding a PPL to a LPL, but for the purpose of this RIA the assumed 50% seem a valid number for the calculation of the impact. This number of 50% was chosen since, contrary to the national private licences in UK and NL, the privileges granted by a full LPL are very similar to the privileges of a PPL concerning MTOM of the airplane and number of passengers allowed - the main difference being the number of visits to an AME or GMP for pilots under age 45 and the level of medical requirements to be complied with.

The number of pilots who do no longer fully comply with the requirements for a class 2 medical certificate can only be determined very roughly because it depends on gender, age, genetic disposition, environmental influences, lifestyle, personal risk factors, and more. One could assume very roughly that 3%<sup>86</sup> of the 117.444 class 2 medical certificate holders, i.e. 3522 pilots, per year will fall under the category of not being fully compliant with the medical requirements.

Presently, all pilots who do not fully comply with the medical requirements in JAR-FCL 3 should be referred to the aeromedical specialist in the authority. **Option 5.5A** provides the same requirement and is a "do nothing" option.

Independently of the number of pilots affected, a attribution of competence for the decision on fitness in contentious cases to the AeMC and AME, as in **option 5.5B**, would bear a significant advantage for the individual pilot: the time needed for the evaluation and assessment of his/her condition will be shortened considerably because the AME does not have to send papers to the competent authority, or to an AeMC as in **option 5.5C**, explaining the medical case, but could use the time to deal directly with the pilot.

Provided that JAR-FCL 3 is fully implemented, the effect of **option 5.5C** has no effect on the individual pilot. The time involved for the AME to liaise with the authority is most probably the same as the time needed to liaise with an AeMC.

#### 2.13.2.3 Aeromedical professionals

Aeromedical professionals relevant for this RIA are the AME, the AeMC and the aeromedical specialists in the competent authorities. All aeromedical professionals are qualified and trained to assess the fitness of pilots in contentious cases and to draw the aeromedical conclusions. However, their experience varies.

An AME in his own practice may perform only very few aeromedical examinations and assessments in one year. Numbers vary from the minimum of 10 to several hundred examinations.

More examinations are normally performed in an AeMC, but their experience is mainly in the area of Class 1 medical certificates.

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<sup>86</sup> The value of 3% is based on reports from certain member states and seems adequate



An aeromedical specialist in a competent authority deals mainly with cases where a pilot does not fully comply with the requirements. This gives rise to the argument that the authority has more experience in this field than AMEs or AeMCs and, additionally, the aeromedical specialist in the authority could ensure equal treatment of all pilots if they see all contentious cases. However, several Authorities already delegated the decision on fitness of private pilots to AeMCs or AMEs and no information has been received on any negative impact of this delegation.

Option 5.5A: The aeromedical specialists in the authorities continue to perform the final aeromedical assessment and take the decision on the fitness in contentious cases for holders of class 2 medical certificates.

In option 5.5B, the AME is a physician with postgraduate studies and who also underwent a training course in aviation medicine. Professionally he should be fully qualified to draw the aeromedical conclusion and decide on the fitness of a pilot also in contentious cases. The risk of a lack of experience is mitigated by the fact that the AME is the person who normally knows the pilot for many years, saw the development of possible disease and how the pilot dealt with it, has more influence on convincing the pilot to take preventive measures in case it is needed to remain fit to fly, and the AME is the person to oversee compliance with limitations. It can also be assumed that the decision on fitness can be taken in a shorter period of time than in the case of option 5.5A or option 5.5C. Under this option 5.5B, a pilot could also go to an AeMC to have his/her fitness determined if he/she so wishes and this may be the case for pilots who went to an AeMC for their routine aeromedical examination. However, no data exists about the number of private pilots who use an AeMC for their routine aeromedical examinations.

In Option 5.5C, the AeMC is an organisation which normally has several AMEs and specialists on staff. Professionally, an AeMC is fully qualified to draw the aeromedical conclusions and decide on the fitness of pilots also in contentious cases. However, one of the main tasks of an AeMC is to deal with professional pilots and, in some cases, a private pilot, who does not attend this AeMC regularly, may have to wait his/her turn until there is time to deal with his/her case. Obligatory referral to an AeMC may also be quite inconvenient for the pilot because of travel time and costs.

#### 2.13.2.4 Summary of affected entities

The affected entities are summarised in Table 129 below:

OPTION		Estimated Number			
Id.	Description	Auth	PPL	AME Class 2	AeMC
5.5A	"Do nothing" (i.e. decision by aeromedical specialist in the authority)	31*	0	0	0
5.5B	Decision on fitness by AeMC or AME	31	3522 /yr	1797	69
5.5C	Decision on fitness only by AeMC	31	3522 /yr	0	69

**Table 129: Summary of affected entities**

\* A minimum of 2 authorities is known to have referred the decision on aeromedical fitness of pilots who do not fully comply with the requirements to AeMCs. For option 5.5A, the impact on these authorities would be to internalise this function and for the AeMCs in these countries to stop doing this work. This fact has not been included in the calculations.

#### *2.13.3 Safety impact*

When discussing the possible safety impact it was observed for **option 5.5B** that an AME may not have sufficient experience to assess medical fitness in contentious cases. However, this risk is mitigated by providing Acceptable Means of Compliance (AMC) to paragraph MED.A.045 in Part Medical saying that the AME or AeMC may refer the decision on fitness to the licensing authority in borderline cases. Another

mechanism to ensure safety by correct medical decisions is the oversight carried out by the authority, as all AMEs and AeMCs will send all relevant assessments and examination results to the licensing authority.

**Option 5.5C** –decision on fitness by the AeMC only – may seem to have a better score with regard to experience of the AMEs working for the organisation. However, this does not outweigh the fact that the AME has better knowledge of the pilot's medical history and better possibilities to follow-up on medical issues with the pilot.

The safety impact is summarised in Table 130 below:

Specific Objectives	Scoring of options		
	5.5.A	5.5.B	5.5.C
	Decision by authority	Decision by AeMC or AME	Decision by AeMC
Medical experience to evaluate contentious cases	3	1	2
Personal knowledge of the pilot's medical history	1	3	2
Follow-up after eventual fit assessment	1	3	1
<b>TOTAL</b>	<b>5</b>	<b>7</b>	<b>5</b>
<b>AVERAGE SCORE (Tot/3 quantified parameters)</b>	<b>1,67</b>	<b>2,33</b>	<b>1,67</b>
<b>WEIGHTED AVERAGE (Score x 3 for safety)</b>	<b>5</b>	<b>6</b>	<b>5</b>

**Table 130: Scoring of the safety impact**

#### *2.13.4 Environmental impact*

No environmental impacts have been identified.

#### *2.13.5 Economic Impact*

##### 2.13.5.1 Regulatory cost for the Agency

The tasks of the Agency regarding rulemaking, safety analysis and standardisation will remain unchanged and none of the options has an economic impact on the Agency.

##### 2.13.5.2 Regulatory cost of the competent authorities

Depending on national law, a attribution of competence for aeromedical decisions to both AMEs and AeMCs (option 5.5B) or exclusively to AeMCs (option 5.5C) will either result in a loss of income for the authority or have no impact on its income. The reason is that some authorities ask for administrative fees and others are obliged by law to review the cases at no expense for the pilot. Option 5.5A (do nothing) does not have any impact on the authorities of Member States where JAR-FCL 3 is fully implemented.

##### 2.13.5.3 Potential cost savings for pilots

National systems for medical certification are very different and the impacts of each option would vary in accordance with the concrete national system.

In **Option 5.5.A**, the authority reviews the fitness of a pilot. Some authorities charge administrative fees, plus the pilot has to pay for the examinations needed to determine fitness, plus fees to write the final report. In other countries, national law requires that either all costs of the review, or at least part of them, are taken up by the authority.

In **Option 5.5B**, the AME or AeMC decide whether a pilot is fit to fly. The AME, as well as the AeMC, will charge for the aeromedical assessment of the pilots. The cost will vary significantly from country to country, but as pilots would have many options regarding where to go for his/her medical evaluation, competition may have a positive effect on the cost. However, one of the reasons to score AMEs reasonably high on safety, although they may have less experience than an AeMC or the authority, was that they normally examine a pilot they already know and that they will follow-up the pilot's medical

condition later. The pilot will also save costs in terms of time because the decision making process by his/her AME or AeMC should be faster than a process where other organisations are involved.

In **Options 5.5.C**, only AeMCs will review the medical fitness of pilots. This will have the same effect as option 5.5B above, with the difference that the pilot has less choice of where to go for his/her medical evaluation. In smaller countries where only one AeMC may exist, the pilot will not have any choice but to go to that AeMC, if he/she does not want to go to an AeMC in another European country.

#### 2.13.5.4 Additional demand

No additional demand will be created. A private pilot who does not fully comply with the requirements for a class 2 medical certificate has to be assessed. Depending on the option chosen this will result in shift of work but not in creating new FTEs.

#### 2.13.5.5 Summary of economic impact

The economic impact cannot be judged in monetary terms because of the different systems that are in place in the 27 + 4 Member States. It is therefore assumed that the economical impact under option 5.5A will be neutral because no changes would occur compared to the present status and the pilots would be charged or not charged by the authority for the medical review as before.

Option 5.5B would equalise the economic impact as all pilots who need a decision on their fitness because they do not fully comply with the requirements would be charged according to the medical fees in a country. The market will determine whether any savings will be to the benefit of the pilot, who in any case is expected to save costs in terms of time under this option.

The same would apply for option 5.5C, with the difference that the pilot would have less choice on where to turn for their medical evaluation.

The conclusions reached in previous sub-paragraphs 2.13.5.1 to 2.13.5.4, are translated into scoring in the following Table 131:

Specific Objectives	Scoring of options		
	5.5A	5.5B	5.5C
	Decision by authority	Decision by AeMC or AME	Decision by AeMC
Economic impact	0	3	1
<b>TOTAL</b>			
<b>AVERAGE SCORE (Tot/1 quantified parameters)</b>			
<b>WEIGHTED AVERAGE (Score x 2 for economy)</b>	<b>0</b>	<b>6</b>	<b>2</b>

**Table 131: Scoring of economic impact as function of the chosen legal solution**

From it one can observe that option 5.5B scores highest with regard to economic impact.

#### 2.13.6 Social Impact

The social impact is judged to be negligible as there is only a shift in workload with only very limited employment effects.

#### 2.13.7 Regulatory harmonisation

##### 2.13.7.1 Compatibility with ICAO standards

In paragraph 1.2.4.7 of ICAO Annex 1 it is required that the Contracting States shall use the services of medical assessors to evaluate the reports that have to be submitted to the licensing authority. This relates to all medical reports of pilots of all classes and not only those where the fitness of the licence holder is in doubt. However, there is no provision in ICAO Annex 1 that requires the medical assessor to take the decision on medical fitness in cases where the applicant does not fully meet the standards.

Option 5.5.A, giving the authority / medical assessor the responsibility to decide whether a private pilot is fit or unfit to fly would be in full compliance with ICAO Annex 1. However, Options 5.5B and 5.5C, where the AME and/or the AeMC take that decision is not contradictory to the standards set out in ICAO, since in this case the medical assessor in the licensing authority would still evaluate the medical reports of the pilots concerned.

#### 2.13.7.3 Comparison with the FAA rules

A pilot who does not fully comply with the medical requirements in 14 CFR Part 61 of the FARs is assessed by his/her aeromedical examiner who sends all evidence of the pilot's condition to a FAA medical assessor who will review the paperwork and communicate the decision on fitness. This is a similar system as proposed under options 5.5B and 5.5C - the medical assessor of the authority will review the cases and could intervene if the decision of the AME or AeMC was either incorrect or based on incomplete assessments.

#### 2.13.7.4 Summary of impact on regulatory harmonisation

The above considerations are translated into scores related to the applicable specific objectives in the following Table 132:

Specific Objectives	Scoring of options		
	A	B	C
	Decision by authority	Decision by AeMC or AME	Decision by AeMC
Compliance with ICAO standards	3	2	2
Compatibility with FAA regulations	3	2	2
<b>TOTAL</b>	<b>6</b>	<b>4</b>	<b>4</b>
<b>AVERAGE SCORE (Tot/2 quantified parameters)</b>	<b>12</b>	<b>8</b>	<b>8</b>
<b>WEIGHTED AVERAGE (Score x 1 for global harmonisation)</b>			

**Table 132: Scoring of impact on regulatory harmonisation**

Options 5.5B and 5.5C both score well for regulatory harmonisation. Although it is not the medical assessor of the authority taking the decision on fitness in contentious cases, as would be the case in option 5.5A, the final decision is under the oversight of the authority and compliance with ICAO is accomplished. Option 5.5A would score slightly higher for regulatory harmonisation.

#### *2.13.8 Multi Criteria Analysis (MCA) and recommended option*

According to the methodology described in paragraph 2.1.2 and the scores attributed in paragraphs 2.13.3 to 2.13.7, the following matrix for MCA can be provided:

Weighted score of options for XX		5.5A	5.5B	5.5C
Key Performance Area	Weight	Decision by authority	Decision by AeMC or AME	Decision by AeMC
Safety	3	5	6	5
Environmental	3	0	0	0
Economic	2	0	6	1
Social	2	0	0	0
Global harmonisation	1	12	8	8
<b>WEIGHTED TOTAL</b>		<b>17</b>	<b>20</b>	<b>15</b>

**Table 133: Multi Criteria Analysis for the decision on fitness of PPL holders in contentious cases**

Table 133 above shows that option 5.5B scores higher than options 5.5A and 5.5C, which score slightly lower. Option 5.5B was chosen for the following reasons:

An aeromedical specialist has to assess PPL holders who do not fully comply with the medical requirements. All aeromedical specialists in the system have the same training and qualification and are included in the options that were evaluated.

In option 5.5A, the aeromedical specialist would be the medical assessor in the authority. The medical assessor is very experienced in assessing contentious cases. The negative point in this option is that the medical examiner will have to familiarise himself with the medical history of the pilot, liaise with the pilot and the AME for clarification and the administration fees for the authority may be high. On an overall evaluation this option is not the preferred one in spite of the fact that scores highest for harmonisation.

In Option 5.5.B the AME is familiar with the pilot's medical history which helps him to fully assess the pilot's medical fitness. The pilot can undergo any additional examinations that may be needed at or near the AME office and does not have to change his point of contact and advice in a critical situation (risk to lose the licence). This process of medical re-certification by the AME is most probably the fastest one possible, without the need for the AME to send and re-send to the authority documents of examinations performed during the process. If the pilot is assessed as fit with limitations it will be the AME who will oversee the limitations in the long run. The pilot will save costs in terms of time. In spite of the fact that a new AME may not have enough experience to take the decision on fitness for the pilots concerned, he/she is always free to contact the licensing authority for advice.

There is, of course, the possibility that the pilot does not attend "his"/"her" AME for the assessment but a different one who has never seen him/her. In this case the re-certification process may take some more time because of the information that has to be retrieved, but this is then the choice of the pilot.

Option 5.5C also scores high in terms of safety but bears the disadvantage that the pilot is restricted in his choice as to where and with whom he prefers to have his fitness assessed.

In conclusion, option 5.5B is the most advantageous one for a PPL holder who does not fully comply with the medical requirements and needs to be re-assessed.

## **2.14 Issues of lesser relevance**

### *2.14.1 Issues for LPL*

#### *2.14.1.1 Minimum age for LPL (A) and (H)*

When developing the requirements for the LPL, one of the issues that were discussed by the group was the minimum age for applicants. The question was whether to maintain the minimum age of 17 years old, established in ICAO Annex 1 for the PPL, or to lower that minimum age. On the one hand, there would be compliance with ICAO SARPs, but the option to lower the minimum age would contribute to the overall objective of opening access to aviation to a larger number of applicants.

The two options considered are presented in the following Table:

Alternative options	
N.	Description
9.1A	Do nothing option – maintain age of 17, as per ICAO SARPs for the PPL This option does not reach the objective identified
9.1B	Establish age of 16, as per proposal of the group, after comparison of national models This is the preferred option, since it reaches the objective identified and, after comparison of national models, it was shown that there is no significant effect on the level of safety coming from the lowering of the minimum age.

**Table 134: Summary of alternative options**

The sector concerned is general aviation, more specifically applicants of the LPL, as well as instructors and examiners for this category of licence, as well as training organisations and national authorities.

From a safety impact point of view, both options are considered to score equally. If the minimum age of 17 established in ICAO Annex 1 has a long proven safety record, it is also true that a comparison of the

national systems where a licence similar to the LPL already existed shows that no significant effect on the level of safety coming from the lowering of the minimum age for holding the licence.

In what regards economic impact, option 9.1B scores higher than option 9.1A. It was already demonstrated above that the introduction of the LPL will cause an increase of the number of FTEs involved in the instruction and examination for this licence, with the related beneficial economic effects. Therefore, lowering the minimum age of applicants, which will in turn increase the number of potential applicants, will correspond to an even further potential increase of FTEs involved in the instruction and examination of those applicants. Moreover, this increase in the potential number of applicants will also have a positive effect on the amount of students for training organisations, and consequently on their income. In the case of national authorities, there will similarly be an increase of the number of FTEs needed, as well as an increase of the amount of applicants paying fees, thus providing additional income.

In relation to the environmental impact, the conclusions reached above in this RIA for the introduction of the LPL are valid here, with no significant changes derived from either option. As it was already stated, the overall environmental impact of the LPL can be considered very small as regards green house gases. There is, however, a slight negative impact on environment, deriving from the increase in the number of flight hours by holders of the new LPL.

From a social impact point of view, similarly to what was said in relation to the economic impact, option 9.1B scores higher than option 9.1A. This higher score is related to the potential increase in FTEs for instruction and examination, as well as within the national authorities.

For both options, the impacts on other aviation requirements outside EASA scope, as well as on foreign compatible regulatory requirements are similarly considered to be extraneous, taking into account the nature and privileges associated with the licence.

No equity or fairness issues have been identified.

Taking into account the impact analysis performed above, **option 9.1B is considered the preferred option**. From a safety and environmental point of view, both options are equivalent. However, option 3C1B scores higher on the economic and social impacts. In addition, it complies with one of the specific objectives of the NPA, to introduce proportionate rules for pilot licensing, thus promoting the diversified development of aviation.

#### 2.14.1.2 Concept of Full LPL (A)

As already explained above, the concept of the LPL was introduced by the legislator in the Basic Regulation, where the basic privileges associated with the licence were already defined. Therefore, like it has already been explained in this RIA, there was really no possibility to consider a 'Do nothing option', i.e., not creating requirements for the LPL(A). The only issue that had to be considered was 'how' to establish the requirements for such a licence, not 'if' to create those requirements. When working on the development of implementing rules for the LPL(A), the objective of the Agency was to create a licence for aeroplanes that would provide a viable alternative to the PPL, while maintaining an acceptable level of safety, thus answering the requests from stakeholders to have a licence with easier access in order to revitalise general aviation in Europe.

The options considered when developing the concept of the LPL(A) can be summarised in the following table:

Alternative options	
N.	Description
9.2A	Maintain ICAO SARPs in all aspects This option is not adequate, since it doesn't reach the objectives identified
9.2B	Create more stringent requirements than ICAO SARPs This option is not adequate, since it doesn't reach the objectives identified
9.2C	Take ICAO SARPs as reference, but create less stringent requirements in some aspects. This is the preferred option, since it reaches the objectives identified. The differences in relation to ICAO SARPs are justified based on the comparison of national models.

**Table 135: Summary of alternative options**

From a safety perspective, the 3 options are considered to be equivalent. The ICAO Annex 1 SARPs have a long proven safety record, which made option 9.2A the comparison standard for the other options. In relation to option 9.2B, sufficient evidence has not been found that the creation of more stringent requirements would correspond to an increase in the safety level, and therefore the option has been considered as scoring similarly. Finally, in what regards option 9.2C, a comparison of the national systems where a licence similar to the LPL already existed was done on a case by case basis to analyse in each concrete case where it was proposed to introduce alleviation in relation to ICAO SARPs if any evidence existed that the safety level would be negatively affected. In each case where the agency is proposing to deviate from the ICAO SARPs no significant effect on the level of safety was found, e.g., in relation to the reduction of the total flight training hours from 40 to 30, 30 hours was the average amount of total flight training for the different models of national PPLs in the Member States. Another example, the total hours of navigation training were reduced, from 5 to 3 hours, but it was found that the content of the navigational training can be trained within the given timeframe. Therefore, also option 3C3C is found to score similarly in terms of safety to option 3C3A.

Both in terms of economic and social impacts, option 9.2C is found to score higher than the other two options. As it was already referred above, in 2.14.1.1, any option that has the potential of increasing the number of applicants for LPL has a positive impact in terms of FTEs generated in the fields of instruction and examination, and for the national authorities, as well as a positive impact on the income of training organisations and national authorities.

In relation to the environmental impact, the conclusions reached above in this RIA for the introduction of the LPL are valid here, with no significant changes derived from either option. Therefore, all 3 options are considered to score slightly negatively.

For the 3 options, the impacts on other aviation requirements outside EASA scope, as well as on foreign compatible regulatory requirements are considered to be negligible, taking into account the nature and privileges associated with the licence.

No equity or fairness issues have been identified.

In conclusion, **option 9.2C is the preferred one**. Maintaining ICAO SARPs in all aspects will not fulfil the objective of the LPL. Even worse it would be to establish more stringent requirements. So the only viable option is to take the ICAO SARPs and the different national models for national licences as a reference and create less stringent requirements in some areas.

#### 2.14.1.3 Concept of Full LPL (H)

As already explained above, in this matter there was really no possibility to consider a 'Do nothing option', i.e., not creating requirements for the LPL(H). The only issue that had to be considered was 'how' to establish the requirements for such a licence, not 'if' to create those requirements. When working on the development of implementing rules for the LPL(H), the objective of the Agency was to create a licence for helicopters that would provide a viable alternative to the PPL, while maintaining an acceptable level of safety, thus answering the requests from stakeholders to have a licence with easier access in order to revitalise general aviation in Europe.

The options considered when developing the concept of the LPL(H) can be summarised in the following table:

Alternative options	
N.	Description
9.3A	Maintain ICAO SARPs in all aspects This option is not adequate, since it doesn't reach the objectives identified
9.3B	Create more stringent requirements than ICAO SARPs This option is not adequate, since it doesn't reach the objectives identified
9.3C	Take ICAO SARPs as reference, but create different requirements in some aspects: This is the preferred option, since it reaches the objectives identified. The differences in relation to ICAO SARPs are justified based on the comparison of national models.

**Table 136: Summary of alternative options**

In terms of safety impacts, option 9.3A was considered as the comparison term for the other two options, since ICAO SARPs have a long proven safety record. Option 9.3B is considered to be equivalent in terms of safety, since evidence was not shown that the creation of more stringent requirements would cause an increase of the safety level in all cases. Finally, option 9.3C is considered to be at least equivalent to option 9.3A, since the proposed deviations from ICAO standards, agreed by the experts after a case by case consideration of the issues, either are more stringent than ICAO SARPs (e.g. the total amount of training is increased from 40 to 45 hours), or, when they represent alleviations, are based on the experience in Member States where a similar licence to the LPL is already in existence (e.g. the different requirements for the cross country flight – 150 km with one landing in between, as opposed to 180 km with 2 intermediate landings as per the PPL(H) ICAO Annex 1 requirement)

Both in terms of economic and social impacts, option 9.3C is found to score higher than the other two options. As it was already referred above, in 2.14.1.1, any option that has the potential of increasing the number of applicants for LPL has a positive impact in terms of FTEs generated in the fields of instruction and examination, and for the national authorities, as well as a positive impact on the income of training organisations and national authorities.

In relation to the environmental impact, the conclusions reached above in this RIA for the introduction of the LPL are valid here, with no significant changes derived from either option. Therefore, all 3 options are considered to score slightly negatively.

For the 3 options, the impacts on other aviation requirements outside EASA scope, as well as on foreign compatible regulatory requirements are considered to be negligible, taking into account the nature and privileges associated with the licence.

No equity or fairness issues have been identified.

In conclusion, **option 9.3C is the preferred**. Maintaining ICAO SARPs in all aspects will not fulfil the objective of the LPL. Even worse it would be to establish more stringent requirements in all cases. So the only viable option is to take the ICAO SARPs and the different national models for national licences as a reference and create less stringent requirements in some areas.

#### *2.14.1.4 Concept of LPL (S) for sailplanes*

As for the LPL(A) and (H), in what refers to the LPL(S) there was really no possibility to consider a 'Do nothing option', i.e., not creating requirements for the licence. Again, what had to be considered was 'how' to establish the requirements for such a licence, not 'if' to create those requirements. When working on the development of implementing rules for the LPL(S), the objective was to create a licence for sailplanes that would provide a viable alternative to the SPL, while maintaining an acceptable level of safety. The options considered when developing the concept of the LPL(S) can be summarised in the following table:

Alternative options	
N.	Description
9.4A	Create less stringent requirements than ICAO SARPs  This option was rejected, since it was considered that the ICAO requirements for training were the minimum necessary to ensure safety
9.4B	Maintain ICAO SARPs in all aspects  This option was rejected, since in some cases ICAO SARPs were not considered adequate, from a safety point of view. On the other hand, the system established by the BR for the medical is already a difference in relation to ICAO
9.4C	Take ICAO SARPs as reference, but create different requirements in some aspects:  There are some differences compared to the ICAO requirements for sailplane pilots. But all the proposed requirements are higher than the ones defined by ICAO. Therefore, all ICAO requirements are met, the only difference is the medical certificate.  This is the preferred option, even though the objective identified is only reached in respect of the medical certificate. In all other aspects, the requirements are equivalent to those of the SPL. The differences in relation to ICAO SARPs are justified based on the comparison of national models.



**Table 137: Summary of alternative options**

In terms of safety impacts, option 9.4A scores negatively, and it was therefore soon rejected, since it was recognised by the experts that the ICAO requirements for training were the minimum necessary to ensure safety. Option 9.4B was also considered to score negatively from a safety point of view, since the experience in Member States has shown that ICAO's minimum standards are in some cases too low to ensure safety. Finally, option 9.4C is considered to score positively in terms of safety. The proposed requirements comply with ICAO standards, and in some cases are more stringent (for example, the Agency proposes 10 hours instead of the 6 recommended by ICAO, including 40 flights instead of 20). In the end, the only relevant difference in relation to ICAO Annex 1 is the different requirement for medical certification.

Both in terms of economic and social impacts, option 9.4A is found to score higher than the other two options, with Option 9.4C following and Option 9.4B reaching the lowest score – the difference in score between the two being explained by the different requirements for medical certification. As it was already referred above, in 2.14.1.1, any option that has the potential of increasing the number of applicants for LPL has a positive impact in terms of FTEs generated in the fields of instruction and examination, and for the national authorities, as well as a positive impact on the income of training organisations and national authorities.

In relation to the environmental impact, the conclusions reached above in this RIA for the introduction of the LPL are valid here, with no significant changes derived from either option. Therefore, all 3 options are considered to score slightly negatively.

For the 3 options, the impacts on other aviation requirements outside EASA scope, as well as on foreign compatible regulatory requirements are considered to be negligible, taking into account the nature and privileges associated with the licence.

No equity or fairness issues have been identified.

In conclusion, **option 9.4C is the preferred**, since it is the only one that scores positively in terms of safety. The ICAO requirements for training were considered the minimum necessary to ensure safety: less stringent requirements are therefore not possible. For some aspects a higher amount of training than determined by ICAO was considered to be necessary to ensure a sufficient level of safety. However, maintaining the same medical requirements was deemed not necessary. This conclusion is backed by experience in the Member States. None of the other options deserve deeper analysis, since they were considered to score negatively in terms of safety.

#### *2.14.1.5 Concept of LPL (B) for balloons*

When working on the development of implementing rules for the LPL(B), the objective was, similarly to what was said for the LPL(S), to create a licence for balloons that would provide a viable alternative to the BPL, while maintaining an acceptable level of safety.

The options considered when developing the concept of the LPL(B) can be summarised in the following table:

Alternative options	
N.	Description
9.5A	Create less stringent requirements than ICAO SARPs This option was rejected, since it was considered that the ICAO requirements for training were the minimum necessary to ensure safety
9.5B	Maintain ICAO SARPs in all aspects This option was rejected, since in some cases ICAO SARPs were not considered adequate, from a safety point of view. On the other hand the system established by the BR for the medical is already a difference in relation to ICAO
9.5C	Take ICAO SARPs as reference, but create different requirements in some aspects. There are some differences compared to the ICAO requirements for balloon pilots. But all the proposed requirements are higher than the ones defined by ICAO. Therefore, all ICAO requirements are met; the only difference is the medical certificate. This is the preferred option, even though the objective identified is only reached in respect of the medical certificate. In all other aspects, the requirements are equivalent to those of the BPL. The differences in relation to ICAO SARPs are justified based on the comparison of national models.

**Table 138: Summary of alternative options**

In terms of safety impacts, option 9.5A scores negatively, and it was therefore soon rejected, since it was recognised by the experts that the ICAO requirements for training were the minimum necessary to ensure safety. Option 9.5B was also considered to score negatively from a safety point of view, since the experience in Member States has shown that ICAO's minimum standards are in some cases too low to ensure safety. Finally, option 9.5C is considered to score positively in terms of safety. The proposed requirements either comply with ICAO standards, or are even more stringent (for example, the Agency proposes 20 take offs instead of 8). In the end, the only relevant difference in relation to ICAO Annex 1 is the different requirement for medical certification.

Similarly to the LPL(S), both in terms of economic and social impacts, option 9.5A is found to score higher than the other two options, with Option 9.5C following and Option 9.5B reaching the lowest score. As it was already referred above, in 2.14.1.1, any option that has the potential of increasing the number of applicants for LPL has a positive impact in terms of FTEs generated in the fields of instruction and examination, and for the national authorities, as well as a positive impact on the income of training organisations and national authorities.

In relation to the environmental impact, the conclusions reached above in this RIA for the introduction of the LPL are valid here, with no significant changes derived from either option. Therefore, all 3 options are considered to score slightly negatively.

For the 3 options, the impacts on other aviation requirements outside EASA scope, as well as on foreign compatible regulatory requirements are considered to be negligible, taking into account the nature and privileges associated with the licence.

No equity or fairness issues have been identified.

In conclusion, **option 9.5C is the preferred**, since it is the only one that scores positively in terms of safety. The ICAO requirements for training were considered the minimum necessary to ensure safety: less stringent requirements are therefore not possible. For some aspects a higher amount of training than determined by ICAO was considered to be necessary to ensure a sufficient level of safety. None of the other options deserve deeper analysis, since they were considered to score negatively in terms of safety.

#### *2.14.1.6 Concept of licences (As) for airships*

When considering the requirements for a licence for airships, the first issue that was discussed by the group members was whether it was relevant to create a LPL or PPL for this category of aircraft. On one hand, ICAO Annex 1 contains standards for both the PPL and CPL for airships, even though the Annex only applies to airships with a cubic capacity in excess of 4,600 cubic metres. On the other hand,

information received from Member States indicated that the activities performed with this type of aircraft above a certain size are essentially commercial.

The options considered can be summarised in the following table:

Alternative options	
N.	Description
9.6A	Create both a LPL and a PPL for airships  This option is not considered adequate, since it doesn't seem relevant to have an LPL for these aircraft.
9.6B	Create a PPL for airships, but not an LPL  This is the preferred option, since it is in compliance with ICAO Annex 1. ICAO Annex 1 contains standards for both the PPL and CPL for airships, but the Annex only applies to those with a cubic capacity in excess of 4,600 cubic metres. Due to the fact that airships of this size are invariably used for commercial operations and due to the cost and operational procedures of such aircraft, the FCL.001 experts discussed whether a PPL for these airships was adequate. In the event, it was decided that, as ICAO standards were in place, the implementing rules should include the PPL. However, it was considered adequate to use this licence also for gas airships with a maximum certificated take-off mass below 4,600 m <sup>3</sup> .
9.6C	Do not create an LPL or PPL for airships  This option was considered by the group, but it was discarded since ICAO Annex 1 foresees a PPL for airships.

**Table 139: Summary of alternative options**

In terms of safety, the 3 options are considered to score similarly. Option 9.6C doesn't create a licence for private operations, and therefore is neutral in terms of safety. Option 9.6B proposes to create a PPL, with requirements based on ICAO Annex 1, and therefore is also considered to neutrally, since ICAO SARPs have a long established safety record. When it comes to option 9.6A, the safety impact did not deserved deeper analysis, since this options was soon rejected.

In terms of economic and social impacts, options 9.6A and 9.6B score higher than option 9.6C that, in fact, has a negative score.

No environmental impacts have been identified for any of the options.

For the 3 options, the impacts on other aviation requirements outside EASA scope, as well as on foreign compatible regulatory requirements are considered to be negligible, taking into account the nature and privileges associated with the licence.

No equity or fairness issues have been identified.

In conclusion, **option 9.6B is the preferred** one. At least one private or leisure licence for airships needed to be created, in compliance with ICAO Annex 1. Creating both a LPL and a PPL for airships was not considered adequate, since it did not seem relevant to have an LPL for these aircraft category. Therefore the only viable option was to have a PPL licence for all gas airships with additional ratings. Hot-air airships are considered as a category of balloons (class) and are covered by the requirements for balloon pilots.

#### 2.14.1.7 Validity of the LPL

When developing the concept of the LPL, one of the issues that were considered by the experts was the systems to maintain the validity of the licence. In the ICAO system, the validity of a PPL(A) and (H) is dependent on the validity of the class or type ratings held. This system creates a burden for pilots and national authorities, which may not always be justified in the case of the LPL, taking into account the

objectives and the privileges of the licence. On the other hand, for some aircraft, like sailplanes and balloons, class and type ratings have not been established.

The options considered in relation to this issue can be summarised in the following table:

Alternative options	
N.	Description
1A	<p>Keep the system of type and class ratings as determined in ICAO for the PPL</p> <p>This option is not adequate, since the system of class and type ratings is considered to be too burdensome for the LPL. In addition, for some of the aircraft categories included in the privileges of the LPL there are no class or type ratings.</p>
1B	<p>Establish the undetermined validity of the licence.</p> <p>This option was rejected for creating concerns from a safety aspect.</p>
1C	<p>Establish the undetermined validity of the licence, but with currency requirements for maintaining the privileges.</p> <p>This is the preferred option. In this system there are no class or type ratings with a specific revalidation date, but the licence holder has to verify if s/he complies with the currency requirements at all times.</p> <p>The figures for the currency requirements are very close to the figures given for the PPL revalidation of a class rating.</p>

**Table 140: Summary of alternative options**

In terms of safety, option 1B scores negatively, since it raises serious concerns on whether a system of pure undetermined validity would ensure that the standards of knowledge and skill of the pilot could be maintained. In this respect, this option is also contrary to the Essential Requirements for pilot licensing and training, established in the Basic Regulation, which require a regular demonstration that the pilot maintains the level of skill. Therefore, this option was summarily rejected, and didn't deserve any deeper analysis in relation to other impacts. Both options 1A and 1C score positively from a safety point of view.

In terms of economic and social impacts, options 1C and 1A are considered to score similarly. On one hand, option 1A would potentially create more FTEs for examination and in the national authorities, related to the revalidation of class and type ratings. However, it would represent additional costs for the revalidation procedure for both the pilots and national authorities. Option 1C potentially still creates FTEs for examination and the national authorities, but the number of these is reduced in relation to 1A. Conversely, the additional costs for pilots and national authorities are also lower. Option 1C is, therefore, the most apt to reach the objectives of the creation of the LPL: to create a licence that would provide for easier access to aviation, in order to revitalise general aviation in Europe.

No environmental impacts have been identified for any of the options.

For the 3 options, the impacts on other aviation requirements outside EASA scope, as well as on foreign compatible regulatory requirements are considered to be negligible, taking into account the nature and privileges associated with the licence.

In terms of equity or fairness, option 1C is found to score higher than option 1A. Although both options score similarly in what relates to safety, economic and social impacts, as was explained above, if only the interest of pilots is taken into account, and specifically the costs supported by them, option 1C scores higher for a economic and social impact point of view: as was explained above, option 1C reduces the costs supported by pilots with the system for maintaining their privileges current.

In conclusion, **option 1C is the preferred** one. Keeping the system of the revalidation of type and class ratings as determined in ICAO for the PPL is not adequate. A system of undetermined validity of the licence creates concerns on whether the necessary level of safety could be maintained. The only viable option is then to establish the undetermined validity of the licence, but with currency requirements for maintaining the privileges.

## 2.14.2 Issues for other pilot categories

### 2.14.2.1 One or more pilot licences

One of the issues that were considered by the FCL.001 group was how to solve the issue of how many pilot licences one person can hold at the same time. JAR-FCL establishes that a pilot shall not hold more than one licence in each aircraft category, but, if s/he has privileges to fly more than one category of aircraft (for example, aeroplanes and helicopters), then s/he shall hold one licence for each category.

On the other hand, Part-66, which establishes the licensing requirements for maintenance personnel, establishes no limitation to the number of licences a person may hold at any time. This system was adopted taking into account the principles of freedom of movement, and the notion that if one person complies with the requirements for the issuance of a licence, that issuance can not be denied by administrations on the basis of that person already holding another licence issued by another authority. However, this system has been questioned by national authorities since it creates difficulties for oversight, making it difficult for authorities to know at any given time if a person has been subjected to enforcement action by another authority.

The options considered in relation to this issue can be summarised in the following table:

Alternative options	
N.	Description
15.1A	Keep the Part-66 system This option does not solve the issue identified.
15.1B	Use the JAR-FCL system This option solves the oversight issue. However, it is considered to be bureaucratically burdensome and to create confusion by obliging the pilot to control validity periods and limitations inserted in more than one document.
15.1C	Create a system whereby a person shall not, at any time, hold more than one licence issued in accordance with Part FCL. The preferred option. It solves the oversight issue, and has none of the disadvantages of option 15.1B. Furthermore, it is consistent with the global system of the total system approach, of which one of the corollaries is 'one certificate, covering all privileges'.

**Table XXX: Summary of alternative options**

From a safety perspective, both options 15.1B and 15.1C score higher than option 15.1A, since both solve the oversight issue identified by national authorities.

From an economic and social point of view, option 15.1A has the potential of creating more FTEs for national authorities, since it potentially multiplies the number of applicants. Both options 15.1B and 15.1C maintain the number of FTEs in national authorities. Conversely, assuming that the fees for issuing a licence are lower than those applied to an amendment thereof (to add different privileges, related to other category of licences, option 15.1C has the potential of cutting the costs supported by pilots. However, contrary to option 15.1B, it has the potential of requiring national authorities to support some additional costs initially, to adapt their licence formats. Nonetheless, it is important to remember that these costs would always need to be incurred by the national authorities as a consequence of the adoption of European rules on licence format: some adaptations to the national formats would always need to be made. Therefore, these last costs on national authorities, related to a change in licence formats are considered to be negligible.

No environmental impacts have been identified for any of the options.

In relation to the impacts on other aviation requirements outside EASA scope, as well as on foreign compatible regulatory requirements, neither option has a significant impact, since all the 3 systems are possible in accordance with ICAO Annex 1 SARPs.

In terms of equity or fairness, option 15.1C is found to score higher than the others, since, as it was explained above, it creates a more advantageous regime for pilots, from an economic point of view: it has the potential of cutting the costs supported by pilots.

In conclusion, **option 15.1C is the preferred** one. Adopting for pilot licensing a system modelled on Part-66 may lead to a proliferation of licences and then difficulties for oversight. The system of JAR-FCL is considered to be bureaucratically burdensome and to create confusion by obliging the pilot to control validity periods and limitations inserted in more than one licence. In conclusion the best option is to create a system whereby a person shall not, at any time, hold more than one licence issued in accordance with Part FCL. This option solves the oversight issue, and furthermore, is consistent with the Agency's approach, and scores higher in relation to equity and fairness issues.

#### 2.14.2.2 Language proficiency

When the JAR-FCL requirements on language proficiency were developed, the re-assessment periods were left to the discretion of the authorities, since they were only an ICAO recommendation. Thus, in the system created by JAR-FCL the frequency of language proficiency re-assessments were different in each State. The implementing rules to the Basic Regulation cannot leave this to the discretion of the competent authorities, since there is a need to ensure legal certainty and a level playing field. Therefore, the FCL.001 group considered several options on how to solve this particular issue.

The options considered can be summarised in the following table:

Alternative options	
N.	Description
11A	Do nothing Leave the re-assessment periods at the discretion of the national authorities. This option does not solve the issue identified
11B	Establish re-assessment periods different from ICAO recommendation This option solves the issue, but creates a discrepancy from the ICAO SARPs
11C	Establish re-assessment periods in accordance with ICAO recommendation The preferred option. It solves the issue, and is in compliance with ICAO SARPs

**Table 141: Summary of alternative options**

From a safety point of view, all options are considered to score similarly, since the ICAO Annex 1 provisions in this respect are only a recommendation. There is not sufficient safety information at this time to allow an evaluation of the different options that would result in different scores.

The same can be said for both the economic and social impacts. Since not enough information has been given to the Agency on how each Member State has implemented this requirement, it is not possible at this time to evaluate the different options in a way that would allow for the attribution of scores.

No environmental impacts have been identified for any of the options.

In relation to the impacts on other aviation requirements outside EASA scope, as well as on foreign compatible regulatory requirements, option 11C is considered to score slightly higher, since it establishes compliance on a European level with the ICAO recommendation.

In terms of equity or fairness, options 11B and 11C score higher than option 11A, since they establish a level playing field in Europe, and ensure legal certainty for pilots.

In conclusion, **option 11C is the preferred** one. Leaving the establishment of the re-assessment periods to the discretion of the authorities is not feasible since this will not create uniform rules and will even possibly distort competition. Neither is establishing re-assessment periods different from the ICAO recommendation considered appropriate. So the only viable solution is to legally establish uniform re-assessment periods in accordance with the ICAO recommendation.

#### 2.14.2.3 Instrument rating for helicopters

In JAR-FCL 2, the instrument rating for helicopters is type specific, meaning that a specific IR is needed for each type rating held. This is an inconsistency in relation to JAR-FCL 1, since the type rating for aeroplanes is not type specific. This system has a strong economic impact for helicopter pilots, increasing

the costs supported by them. Therefore, the FCL.001 group considered different options in relation to this issue, which can be summarised as in the table below:

Alternative options	
N.	Description
8A	Keep JAR-FCL 2 system – type specific This option has a strong economic impact for pilots without apparent strong safety benefits.
8B	Harmonise with system for aeroplanes – not type specific The preferred option. There isn't a negative impact on safety, a positive economic impact for pilots and consistency with system from aeroplanes.

**Table 142: Summary of alternative options**

From a safety perspective, both options are considered to score equally. In fact, the system of making the instrument rating type specific in the case of helicopters was introduced in a later amendment of JAR-FCL 2, which hasn't been applied in all Member States. Therefore, no significant safety data exists that would allow concluding that option 22A is better from a safety perspective.

In relation to economic and social impacts, option 8A represents a higher number of FTEs for instruction and examination as well as for the national authorities. On the other hand, option 8B significantly cuts the costs supported by helicopter pilots for the revalidation of their ratings.

No environmental impacts have been identified for any of the options.

Similarly, no impacts have been identified in relation to the impacts on other aviation requirements outside EASA scope, as well as on foreign compatible regulatory requirements.

In terms of equity or fairness, option 8B scores higher than option 8A, since it reduces the costs for helicopter pilots, bringing them to a similar level to what is supported by helicopter pilots, thus reducing the inequalities created by JAR-FCL 2.

In conclusion, **option 8B is the preferred** one. Requiring a specific instrument rating for each type of helicopter for which the pilot has privileges is considered excessively bureaucratic, due to the significant commonality of modern avionics and with no significant additional safety benefits. Therefore the only viable option is to establish that a single instrument rating be valid for an entire category of helicopters.

#### 2.14.2.4 Additional ratings

While developing the implementing rules for pilot licensing, the FCL.001 group noted that many Member States required other qualifications and ratings than those included in JAR-FCL 1 and 2. Since once the implementing rules are in place Member States will no longer be able to impose additional safety requirements on pilots, it was considered necessary to take these national ratings into account. Accordingly, the Agency asked the national authorities, through their representatives at the Licensing Sectorial Team of the JAA, to provide information on any additional ratings or qualifications that they had established in their national rules.

The FCL.001 group analysed the information received, and considered several options, that are summarised in the table below.

Alternative options	
N.	Description
17.1A	Do nothing option – keep only the ratings existing in JAR-FCL This option is not adequate, since it doesn't address the issue identified.
17.1B	Develop ratings for all the examples of additional qualifications given by Member States. This option addresses the issue identified, but it is considered disproportionate in some cases, specifically when the examples given by Member States are better addressed by requirements on operational training.

17.1C	Develop ratings for aerobatic flying, sailplane and banner towing and mountain flying, and leave the rest of the examples given by Member States under the general responsibility of operators to provide training for their staff.  The preferred option, since it addresses the issue and establishes a proportional solution.
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**Table 143: Summary of alternative options**

From a safety perspective, options 17.1B and 17.1C both score positively, since additional requirements for training and checking are developed for specific activities that are considered technically challenging for the pilot. Option 17.1A was considered to score negatively from a safety perspective, and therefore did not deserve additional analysis in relation to other impacts.

From an economic perspective, both options 17.1B and 17.1C have the potential of creating FTEs for instruction and examination, as well as for national authorities. They also represent an increase in income for training organisations and for national authorities, with the related additional costs for pilots. However, when equity and fairness issues are considered, option 17.1C scores higher than option 17.1B, since the system established by the former is more balanced, and effectively establishes a sharing of costs between pilots and operators.

In what refers to environment, other aviation requirements outside EASA scope, as well as foreign compatible regulatory requirements, no relevant impacts have been identified.

In conclusion, **option 17.1C is the preferred** one. Keeping only the night ratings existing in JAR-FCL doesn't address the identified issues. However it would be disproportionate to introduce ratings for any possible flight activity, whose requirements can be fulfilled by operational training. The only adequate solution was then to develop only three additional ratings for: aerobatic flying; sailplane and banner towing and mountain flying.

#### *2.14.2.5 Commercial privileges for pilots of balloons, airships or sailplanes*

When developing the licensing implementing rules for balloons, airships and sailplanes, one of the issues that the FCL.001 group had to specifically address was the need for a commercial licence for these categories of aircraft. ICAO does not foresee a CPL for balloons or sailplanes. However, it is known that in some Member States commercial activities are developed with these aircraft even though not all those Member States have a commercial licence for these pilots (for example, in the case of balloons, there is only one country in Europe with a CPL).

The options considered can be summarised in the following table:

Alternative options	
N.	Description
14.1A	Do nothing This option is not adequate, since it does not solve the problem identified.
14.1B	Create CPL for balloons/sailplanes/airships This option solves the problem identified, but it is considered disproportionate in the case of sailplanes and balloons.
14.1C	Create a CPL for airships and provide for the extension of the privileges of the BPL / SPL to commercial activities, under some conditions This is the preferred option, since it solves the issue identified in a proportionate manner. The requirements proposed for the extension of privileges ensure that an adequate level of safety is reached in the case of balloons and sailplanes, and in addition OPS related requirements for the crew will have to be fulfilled.

**Table 144: Summary of alternative options**

From a safety perspective, both options 14.1B and 14.1C score positively, while option 14.1A has the potential of scoring negatively, if pilots continue to exercise commercial activities without having the



necessary privileges, and without establishing the necessary oversight by national authorities. Therefore, option 6A did not merit any further analysis in relation to other impacts.

From an economic perspective, both options 14.1B and 14.1C have the potential of creating FTEs for instruction and examination, as well as for national authorities. They also represent an increase in income for training organisations and for national authorities, with the related additional costs for pilots. However when equity and fairness issues are considered, option 14.1C scores higher than option 14.1B: the system established by the former is more balanced.

In what refers to environment, other aviation requirements outside EASA scope, as well as foreign compatible regulatory requirements, no relevant impacts have been identified.

In conclusion, **option 14.1C is the preferred** one. Creating a CPL for balloons and sailplanes is, almost unanimously, considered disproportionate. Having only PPL and LPL introduces safety concerns for airships. Therefore, the only adequate solution is to create a CPL for airships and to provide requirements for the extension of the privileges of the BPL and SPL to commercial activities, under certain conditions, to ensure an acceptable level of safety.

#### 2.14.2.6 CPL/Instrument rating for airships

When developing the requirements for the CPL and instrument rating for airships, the FCL.001 group took into account both ICAO Annex 1 SARPs and the existing national systems of the Member States. When analysing both sets of requirements, it was considered that the ICAO SARPs were too demanding on some aspects.

The options considered can be summarised in the following table:

Alternative options	
N.	Description
17.2A	To follow ICAO SARPs. This option was considered disproportionate.
17.2B	Take ICAO SARPs as reference, but create different requirements in some aspects. This is the preferred option. The FCL.001 experts came to the conclusion, based on the analysis of the national systems that the ICAO experience requirements for IR and CPL applicants for airships were too demanding. The proposed flight training for the instrument rating requires therefore a total amount of 35 hours whereas ICAO defines 40 hours of instrument training.

**Table 145: Summary of alternative options**

From a safety perspective, both options are considered to score similarly. In fact, as was already mentioned, the experience in the Member States has shown that the ICAO SARPs are too demanding, and that an adequate level of safety can be reached with lower requirements. These conclusions and experience were the basis for the proposals considered in option 17.2B, which therefore have also a proven safety record.

From an economic perspective, both options score similarly when it comes to income for training organisations, to the number of FTEs for instruction and examination, as well as for national authorities, with a slight advantage for option 17.2A. However, when equity and fairness issues are considered, option 17.2B slightly lowers the costs for pilots, and therefore scores higher than option 17.2A: the system established by the former is more balanced.

In what refers to environment, no relevant impacts have been identified.

In relation to other aviation requirements outside EASA scope, as well as foreign compatible regulatory requirements, option 17.2A scores higher than option 17.2B, since the latter establishes a difference in relation to ICAO SARPs.

In conclusion, **option 17.2B is the preferred** one. The FCL.001 experts came to the conclusion, based on the analysis of the existing national systems that the ICAO requirements for IR and CPL applicants for airships were too demanding. The only viable option is then to require a lower amount of instrument and night flying training in the case of the CPL and a total amount of 35 hours, instead of the 40 hours of instrument training as required by ICAO in the case of the instrument rating.

#### 2.14.2.7 Pilots of powered lift aircraft

ICAO Annex 1 contains provisions on the licensing of pilots for the powered-lift aircraft category. ICAO Contracting States should introduce this new licence category in their regulatory systems by March 2011. The FAA has already developed rules for the licensing of powered- lift pilots.

At the same time, the first type of powered-lift aircraft to be used in civil aviation, the BA609, should finish its certification process in the last quarter of 2010, and the first pilot courses should be delivered at the same time. Therefore, it is necessary to create ICAO compliant European rules for the licensing of the powered-lift pilots in time to allow industry to use the aircraft once it is launched in the market, and in any case before March 2011. This is not an easy task, since the introduction of the BA609 requires a fundamental change to the method currently used to licence pilots for either aeroplanes or helicopters under JAR-FCL.

In fact, the BA609 does not fall into a neat category of aircraft. It is a hybrid category and as such the licensing system needs a new approach. A pilot only holding a current ATPL (A) licence does not have the necessary theoretical knowledge or piloting skills to fly the helicopter procedural profiles demanded by the BA609. The same can be said for the holder of an ATPL(H). Therefore, before commencing a course to learn to fly the BA609, an aeroplane or helicopter ATPL holder must gain the relevant theoretical knowledge and flight experience on the other category of aircraft. Essentially, the pilot must pass certain of the theoretical exams to the standard of an ATPL holder on the other category of aircraft. Ideally, the pilot should also have flight time as pilot at the controls of the other category of aircraft – if the pilot doesn't have such flight time, it may be gained during the BA 609 conversion course, once its content is determined by the Operational Suitability Certificate.

The manufacturer's - Bell Augusta Aircraft Corporation (BAAC) - belief is that all the theoretical knowledge needed should be taught as part of the conversion course [estimated as 40 hours CBT (computer based training) and up to 20 hours with interactive courseware]. Regarding flight time in the other category of aircraft, BAAC's current intention is to require that a pilot without the relevant knowledge, flight experience or licence in the other category of aircraft gains some flight experience before it is considered an acceptable entry level pilot converting to the BA609. For the initial courses, until some experience is gained by BAAC, its intention is to require that applicants for the BA609 PL course shall comply with the following:

- For pilots with dual Helicopter/aeroplane licences, the helicopter licence should be commercial, and they should also have an instrument rating or an ATPL in the other category;
- For pilots with a helicopter licence only, they should have a CPL(H) or ATPL(H) with Instrument Rating (IR), and recorded aeroplane flight instruction with a minimum of 40 hours flight time.
- For pilots with an aeroplane licence only, they should have a CPL(A) or ATPL(A) with IR and recorded helicopter flight instruction with a minimum of 40 hours flight time.

The cautious approach shown by BAAC has benefits in the early stages of course development for this new category of aircraft, taking into account the level of knowledge on these aircraft available at the moment. It also has advantages in relation to taking a similar approach to the FAA and developing at the stages requirements for the licensing of this category of aircraft which will certainly need to be reconsidered at a later stage, once more knowledge is available on this category of aircraft.

Therefore, the FCL.001 group had to consider whether it would be adequate to develop now a full licensing system for these aircraft, or if a phased approach would be better. The options considered can be summarised in the following table:

Alternative options	
N.	Description
15.2A	<p>Do nothing</p> <p>No new material would be drafted. This option does not solve the problem identified above, neither from the point of view of industry, nor ICAO compliance. It is also not possible since the Commission's proposal for the extension of the EASA Regulation contains the powered lift aircraft licence category.</p>
15.2B	<p>Completely regulate new licence category</p> <p>This is the option that the FAA took. It has the advantage of ensuring that Member States are ICAO compliant. However, it would be very difficult to finish this task during the time frame established for FCL.001: not only the number of man-hours required would be too much, but most importantly the specialist knowledge needed to develop the EASA requirements for all licence levels from PPL to ATPL is not available. At this stage of the introduction of the aircraft it is still not clear, even for the manufacturer, what should be the detailed syllabus requirements for pilot training.</p>
15.2C	<p>Create only ATPL and type rating for this category</p> <p>To create only a specific ATPL(PL) and a type rating (PL), leaving the other licence categories for a later stage. Since the ATPL(PL) is a stand alone licence, the requirement to obtain it would have to be that the pilot already holds an ATPL(A) or (H). This would have the effect of restricting the initial entry for the type to those pilots holding either an ATPL(A) or ATPL(H) with IR. This option has the advantage of being achievable within the FCL.001 time frame. However, it would require a subsequent rulemaking task to create the rest of the powered-lift licensing system. Since this would be done at a later stage, there is a good chance that more expertise would be available in order to complete the task.</p>
15.2D	<p>Create only type rating (PL) accessible to ATPL (A) or (H)</p> <p>This would have the effect of restricting the initial entry for the type to those pilots holding either an ATPL(A) or ATPL(H) with IR, which agrees with the intention of the manufacturer as explained above. This option has the advantage of being achievable within the FCL.001 time frame. However, it would require a subsequent rulemaking task to create the rest of the powered-lift licensing system. Since this would be done at a later stage, there is a good chance that more expertise would be available in order to complete the task.</p>

**Table 146: Summary of alternative options**

The "Do nothing" option is not an acceptable option, as has already been said. Not only doesn't it solve the problem, but it is against the Commission's proposal for the extension of the Basic Regulation. Therefore, it did not merit an extensive evaluation of the other impacts considered.

When evaluating the remaining 3 options from a safety, economic and social perspective, a quantitative approach is difficult to take, taking into account the knowledge available on this category of aircraft. Therefore, in trying to determine which option would be more adequate, a qualitative approach was taken.

Regarding Option 15.2B, the development of the IRs for EASA Part FCL would take longer than the time that is available and much of the subject matter hasn't been finalised yet by the manufacturers. In order to fly this category of aircraft, pilots would then have to qualify for an ATPL(A) at their own (or their companies) expense before being permitted to enter the PL type rating course.

Options 15.2C and 15.2D are similar in many aspects. Both would solve the issue in the short term, and share the same advantages. Both restrict eligibility for the initial type rating course to pilots already holding the ATPL(A) or ATPL(H) with IR, which would affect negatively pilots holding the CPL or PPL licences.

Despite their similarities, Option 15.2C shows an additional disadvantage when compared with option 15.2D: since initially the only condition to hold a ATPL(PL) would be holding an ATPL(A) or (H), option 15.2C is likely to create more difficulties in the second phase of the work, namely regarding the criteria for bridging from the additional privileges of the ATPL for the aircraft category that wasn't held in the first place.

Option 15.2D would be the easiest option for EASA to implement as a short-term measure. It wouldn't need the development of implementing rules for the licences, something that should be done with great care and which could delay the production of the EASA Part FCL in time for the NPA. For the initial courses on this new category of aircraft, any pilot holding an ATPL with IR would be eligible for the type course and would only have it included on their base licence as an additional type. It wouldn't confer the privileges to the licence holder for the other category of licence; for example, an ATPL(A) with PL type rating wouldn't qualify for the issue of the ATPL(H) and vice versa. This would serve as a good short term solution in that it would permit any ATPL (A) or (H) to attend the BAAC TRTO course, gain the relevant theoretical knowledge of the other licence requirements and then complete the course tailor-made for them. This probably means that a helicopter pilot would spend more time on the aeroplane aspects he would be missing and the aeroplane pilot would spend more time in the helicopter modes. On completion of the type rating course, the applicant would be issued with another type rating onto his/her licence without permanently conferring the privileges of the other category. For example, the holder of an ATPL(H) would have the BA609 added to the list of types but would not be eligible for the issue of an aeroplane licence based on the BA609 type rating course.

In relation to environmental impacts, no significant variation was found between the 3 options.

In what regards other aviation requirements outside EASA scope, as well as foreign compatible regulatory requirements, no relevant impacts were identified.

In conclusion, after due consideration **option 15.2D is the preferred** one. The "do nothing option" does not solve the issue identified, and the Agency considers that a rulemaking task needs to be initiated. Taking into account time constraints and lack of expertise available, Option 15.2B should be disregarded. When comparing Options 15.2C and 15.2D, option 15.2D appears as the best short term solution.

### 2.14.3 Issues for instructors and examiners

#### 2.14.3.1 New categories of instructors

With the introduction of new licences and ratings, as well as with the inclusion on further aircraft categories, it was necessary to develop provisions for the qualification of instructors and examiners. When considering this issue, the FCL.001 group evaluated several options, which are summarised in the table below.

Alternative options	
N.	Description
6.1A	Don't create any additional provisions for instructors or examiners. Not adequate, since instructors are necessary.
6.1B	Give privileges to existing categories of instructor / examiners Not adequate, since specific training and qualifications are needed in some cases
6.1C	Create new categories of instructors / examiners for all new types of licences and ratings. Disproportionate, since for some ratings there is no need for a specific type of instructor.
6.1D	Create two new categories of instructors for the LPL and the mountain rating, and add privileges to existing categories of instructors / examiners in all other cases. This is the preferred option, since it addresses the issue in a proportionate manner.

**Table 147: Summary of alternative options**

Option 6.1A is considered inadequate, since it didn't take into account the extended scope of the EASA licensing regulations in relation to what was covered by JAR-FCL. Therefore it was summarily rejected, and was not subject to a detailed evaluation of impacts.

In relation to option 6.1B, the privileges of the existing categories of instructors are extended without any consideration for the need for further training or qualification requirements. Therefore, this option was considered to score negatively in terms of safety, and thus rejected. Consequently, no further evaluation of other impacts was performed in relation to this option.

As for options 6.1C and 6.1D, both are considered to score similarly from a safety perspective, since safety concerns are covered by both options.

Similarly, in terms of economic and social impacts, both options score similarly, with no significant variation in costs, income or number of FTEs. However, option 6.1D introduces a further consideration of proportionality, and is therefore considered to score higher in terms of equity and fairness issues.

No relevant impacts on environment, aviation requirements outside EASA scope, or foreign compatible regulatory requirements were identified for any of the options.

In conclusion, **option 6.1D is the preferred** one. New provisions for instructors are necessary in the context of the new licences, ratings and aircraft categories. For some of those, specific requirements are necessary for instructors, which do not exist today. The best option is then creating only two new categories of instructors for the LPL and the mountain rating. In all other cases the privileges of the existing categories of instructors / examiners can be extended, without any negative effects on safety.

#### 2.14.3.2 Skill test for instructors

JAR-FCL did not foresee a skill test for all types of instructor. In some cases, there was a provision for a training flight under the supervision of an instructor nominated by the authority. This was an inconsistency in the system that did not seem to have a safety justification. Therefore, the FCL.001 group considered several options to solve this inconsistency, which can be summarised as in the table below.

Alternative options	
N.	Description
3A	Do nothing Maintain the JAR-FCL system. This option doesn't solve the issue identified.
3B	Require a skill test for all categories of instructor, taken with an examiner This option solves the inconsistency issue, but may be disproportionate in some cases, specifically, when the instructor does not need to hold a licence (MCCI and STI) or when the requirements for the issuance of the instructor certificate include the holding of another instructor rating (MI)
3C	Require a skill test for all categories of instructor, except for the MCCI, the STI and the MI. This option raises safety concerns, since there is no assessment of competence for MCCI, STI and MI.
3D	Require a skill test for all categories of instructor, except for the MCCI, the STI and the MI. For these categories, the assessment of competence is made as a part of the training course during a flight supervised by an instructor nominated by the authority. This option solves the issue and is proportionate, but represents an unnecessary burden for national authorities
3E	Require a skill test for all categories of instructor, except for the MCCI, the STI and the MI. For these categories, the assessment of competence is made as a part of the training course during a flight supervised by an examiner or an instructor specifically nominated by the training organisation for this purpose. The preferred option. It solves the issue identified; it is proportionate and doesn't create any additional burden for national authorities. Safety concerns about the qualification of the instructors making the assessment of competence are covered by the management system of the training organisation.

**Table 148: Summary of alternative options**

Option 3A is considered inadequate, since it did not solve the issue identified, which, with the addition of new categories of instructors, licences and aircraft becomes even more pressing. Therefore, it was summarily rejected, and was not subject to a detailed evaluation of impacts.

Moreover, option 3C was considered to score negatively in terms of safety, and thus rejected. Consequently, no further evaluation of other impacts was performed in relation to this option.

In terms of safety, all the remaining options, 3B, 3D and 3E are considered to score similarly, since in all cases an assessment of the instructor's competence is performed. The issue whether the assessment is made by an examiner or an instructor was not considered relevant in terms of safety, since JAR-FCL already allowed in some cases an instructor to be assessed by another instructor, with no visible negative effects on safety<sup>87</sup>. On the other hand, the difference between options 3D and 3E, namely, whether the instructor performing the assessment of certain categories of instructor is nominated by the national authorities or by training organisation, as part of the training course for the issuance of the certificate was also considered not to represent significant variations in terms of safety, since in the latter case the competence of the instructor nominated is covered by the safety management system of the training organisation.

In terms of economic and social impacts, options 3B, 3D and 3E are also considered to score similarly with no significant variation in costs, income or number of FTEs. However, options 3D and 3E introduce a further consideration of proportionality, and are therefore considered to score higher than 3B in terms of equity and fairness issues. When these two final options are considered, however, option 3E has the additional advantage of being fully in line with the Agency's approach to management systems and the European law principle of decentralisation, by reducing the intervention of the national authorities, where that reduction has no negative effects on safety. Therefore, option 3E scores higher than option XD in terms of equity and fairness.

No relevant impacts on environment, aviation requirements outside EASA scope, or foreign compatible regulatory requirements were identified for any of the options.

In conclusion, **option 3E is the preferred** one. The "Do nothing" option does not solve the issue identified. Requiring a skill test for all categories of instructor, taken with an examiner, is disproportionate in some cases, specifically, when the instructor does not need to hold a licence (MCCI and STI) or when the requirements for the issuance of the instructor certificate include the holding of another instructor rating (MI). Exempting the MCCI, STI and MI from the skill test would not be safe, since there will be no assessment of competence for those cases. However, the safety requirement has to be fulfilled with minimum burden on the authorities. Therefore, for the mentioned three categories of instructor, the best option is to assess their competence as a part of the training course, during a flight supervised by an examiner or an instructor specifically nominated by the training organisation for this purpose. Safety concerns about the qualification of the instructors making the assessment of competence are covered by the management system of the training organisation.

#### 2.14.3.3 Multi-Crew Co-ordination Instructor (MCCI) for helicopters

JAR-FCL did not foresee a specific MCCI for helicopters, contrary to what happened for aeroplanes. This is an inconsistency in the system that doesn't seem to have a safety justification; on the contrary, it is possible to conclude that a negative effect on safety may be identified. Therefore, the FCL.001 group considered several options in this matter, which can be summarised in the table below.

Alternative options	
N.	Description
6.2A	Do nothing. To keep the inconsistency. This option does not solve the issue and may create safety concerns.
6.2B	To delete the provision for an MCCI for aeroplanes This option may have negative safety and economic impacts.
6.2C	To create a MCCI for helicopters This is the preferred option. It solves the issue with no or positive safety impacts and positive economic impacts (if there isn't an MCCI for helicopters, the training will have to be provided by a TRI (H) – more costly qualification)

<sup>87</sup> It should be noted that the same reasoning does not apply in relation to the assessment of pilot's skill. In this case, the Basic regulation requires the assessment to be made by an examiner. However, the skill required from an instructor is not the same that is required from a pilot, and therefore the same safety considerations do not apply to both cases.

**Table 149: Summary of alternative options**

Both options 6.2A and 6.2B are considered to score negatively in terms of safety. Furthermore, option 6.2B is also considered to score negatively in terms of economic and social impact, since it would exclude a current category of instructor, with the consequent reduction of FTEs and income for the affected population.

Option 6.2C scores positively in terms of safety, as well in terms of economic and social impacts: contrary to option 6.2B, it potentially creates additional FTEs. It also reaches a positive score in terms of equity and fairness, by creating a specific category of instructor for a specific type of training.

No relevant impacts on environment, aviation requirements outside EASA scope, or foreign compatible regulatory requirements were identified for any of the options.

Therefore, **option 6.2C is clearly the preferred one**. JAR-FCL has provisions for an MCCI for aeroplanes but not for helicopters. Deleting the provision for an MCCI for aeroplanes is clearly not feasible. Maintaining the disparity is not justified. Therefore creating a MCCI for helicopters is the only viable option, with no adverse safety impact and with positive economic and social impact.

#### 2.14.4 Medical issues

##### 2.14.4.1 Medical certificate for BPL and SPL involved in commercial activities

In relation to the issue discussed above in 2.14.2.5, on whether to create a commercial licence for balloon and sailplane pilots when involved in commercial activities, also the question of what type of medical certificate these pilots should hold was discussed by the FCL.001 group.

The options considered can be summarised in the following table:

Alternative options	
N.	Description
5.2A	Require class 1 medical certificates for balloon and sailplane pilots when developing commercial activities. This option is considered disproportionate in the case of sailplanes and balloons.
5.2B	Require class 2 medical certificates for balloon and sailplane pilots when developing commercial activities. This is the preferred option, since it is proportionate.
5.2C	Develop specific medical requirements This option is considered inadequate

**Table 150: Summary of alternative options**

Taking into account that, as was explained above, it was decided to not require a commercial licence for balloon and sailplane pilots when involved in commercial activities, but simply to extend their privileges to commercial activities under certain conditions, option 5.2B is the only viable one. Since a CPL was not created for balloons and sailplanes, it would be disproportionate to require an ICAO class 1 medical certificate. Equally, it does not seem necessary to develop specific medical requirements in this case. The **preferred option is therefore 5.2B**.

##### 2.14.4.2 Competence for the initial issue of Class 1 medical certificates

In JAR-FCL 3, class 1 medical certificates were always issued by the aeromedical section of the competent authority. Conversely, the Basic Regulation establishes that medical certificates may be issued by aeromedical centres and aeromedical examiners, without making any distinction on the class of certificate concerned. Therefore, in this issue several options could be considered as to who is competent for the issue of class 1 medical certificates. The options evaluated by the FCL.001 group can be summarised as in the table below.

Alternative options	
N.	Description
5.3A	Initial issue of Class 1 medical certificates by the competent authority. This option is not considered adequate, since it doesn't take into account the provisions of the Basic Regulation.
5.3B	Initial issue of Class 1 medical certificates by both aeromedical centres and aeromedical examiners. This option raises safety concerns, related to the capacity of aeromedical examiners to issue class 1 medical certificates.
5.3C	Initial issue of Class 1 medical certificates by aeromedical centres, but may be revalidated by aeromedical examiners. This is the preferred option, since the safety concerns are addressed and the system thus created is proportionate.

**Table 151: Summary of alternative options**

In terms of safety, option 5.3B is considered to score negatively, since doubts can be raised as to the competence of aeromedical examiners to issue class 1 medical certificates, without the support given by an organisation, which is conversely guaranteed by options 5.3A and 5.3C. The latter are both considered to score similarly positively in terms of safety, since there is no safety data that would confirm that there is an added safety benefit in having the competent authorities issuing the class 1 medical certificates, in relation to the option of giving that competence to aeromedical centres, taking into account the demanding approval requirements for these organisations (in particular, the existence of a safety management system).

In terms of economic and social impacts, options 5.3A, and 5.3C are considered to score similarly with no significant variation in costs, income or number of FTEs. However, option 5.3C lowers the bureaucratic burden for aeromedical centres and competent authorities, and is therefore considered to score higher than 5.3A in terms of equity and fairness issues. Additionally, option 5.3C has the advantage of being fully in line with the Agency's approach to management systems and the European law principle of decentralisation, by reducing the intervention of the national authorities, where that reduction has no negative effects on safety. Therefore, option 5.3C scores higher than option 5.3A in terms of equity and fairness.

No relevant impacts on environment have been identified. The same can be said in relation to aviation requirements outside EASA scope, or foreign compatible regulatory requirements.

In conclusion, **option 5.3C is the preferred one.**

#### 2.14.4.3 Validity of Class 2 medical certificates

The validity period of class 2 medical certificates required in JAR-FCL 3 follows the ICAO standards in Annex 1, but also the recommendation in paragraph 1.2.5.2.5 (i.e. revalidation every 12 months) for PPL, SPL and BPL holders which have passed their 50<sup>th</sup> birthday. The requirements of JAR-FCL have been repeatedly considered to be too burdensome for private pilots, and this is one of the issues that has been raised. Therefore, the FCL.001 group considered several options in relation to this matter, which are summarised in the table below.

Alternative options	
N.	Description
5.4A	Do nothing Maintain the system of JAR-FCL 3. This option does not solve the issue identified.
5.4B	Change the system of JAR-FCL 3, by taking only the ICAO standard of paragraph 1.2.5.2.4, which would extend the validity period of Class 2 medical certificates for PPL holders above the age of 50 from 12 to 24 months. This is the preferred option, since it addresses the issue identified without a negative impact on safety.



**Table 152: Summary of alternative options**

In terms of safety, both options are considered to score similarly. It is not demonstrated that the more stringent requirement of JAR-FCL 3 provides a significant safety benefit in relation to option 5.4B. In addition, option 5.4B is not considered to represent a safety risk taking into account that the validity period can be shortened by the aeromedical examiner or aeromedical centre for medical reasons, whenever necessary.

In terms of economic and social impacts, option 5.4B implies a reduction in FTEs related to revalidation of class 2 medical certificates. However, in terms of equity and fairness issues, this option scores higher, since it reduces the costs that have to be supported by pilots.

No relevant impacts on environment have been identified. The same can be said in relation to aviation requirements outside EASA scope, or foreign compatible regulatory requirements were identified for any of the options, since both options follow ICAO standards.

In conclusion, **option 5.4B is the preferred one.**

#### 2.14.4.4 Validity of AME certificates

The JAR-FCL 3 system required the certificate for AME to be revalidated every three years. Revalidation criteria were the maintenance of skill, through professional practice and theoretical and scientific refresher courses. However compliance with these requirements can be ensured by oversight by the competent authority, without the need to revalidate the certificate. In fact, it was considered by the experts that this latter administrative action only adds unnecessary bureaucracy. The FCL.001 group, therefore, analysed several options, which are summarised in the table below.

Alternative options	
N.	Description
5.6A	Periodic revalidation Maintain the system of JAR-FCL 3. This option does not solve the issues identified.
5.6B	Establish a system of unlimited validity for aeromedical examiners certificates, with no additional requirements. This options creates safety concerns
5.6C	Establish a system of unlimited validity for aeromedical examiners certificates, with requirements on the maintenance of knowledge and skill. This is the preferred option, since it addresses the issue identified without a negative impact on safety.

**Table 153: Summary of alternative options**

Option 5.6B, unlimited validity with neither additional training requirements nor periodic oversight, raises safety concerns, as medical knowledge changes and results of new scientific research need to be taken into account when assessing a pilot. Therefore, this option was summarily rejected, and was not subject to any further impact evaluation.

Options 5.6A and 5.6C score similarly from a safety point of view, since in both cases the safety concerns are addressed.

From an economic and social perspective, both options are also considered to score equally, since the FTEs needed for national authorities in both options are the same, the difference being that in option 5.6B these FTEs are used for revalidation actions and in option 5.6C they are primarily used for oversight. However, from a equity and fairness perspective, option 5.6C scores higher, since it allows to reach the same objectives but with significantly less bureaucratic burden to be supported by aeromedical examiners.

No relevant impacts on environment have been identified. The same can be said in relation to aviation requirements outside EASA scope, or foreign compatible regulatory requirements were identified for any of the options.

In conclusion, the **preferred option is 5.6C**, which allows eliminating a significant part of the administrative burden while maintaining the specific training and currency requirements as in JAR-FCL 3, subject to oversight by the competent Authority.

### 3. Conclusions

The purpose of this RIA is to perform a comparative analysis of the alternative options that were possible when developing the proposed implementing rules of the Basic Regulation in the field of pilot licensing. This comparative analysis serves as the basis for the choices the Agency made in regards to those options, and that are included in NPA 2008-17.

Hence, having assessed the impact of each considered option, against the specific objectives of the proposed policy, in terms of safety, economic, environmental and social aspects, as well as in relation with other policies, and after extensive consultation with stakeholders, the proposals made by the Agency in its NPA 2008-17 reflect the following choices:

#### *How to implement the LPL:*

- In relation to the basic entry level for the LPL (A) and (H), to **select option 16C**: to create a Basic LPL, with easier training requirements than the full LPL, but with reduced privileges. This option has a positive score in safety and economic and social terms, is acceptable in terms of regulatory harmonisation and, even though it has a slightly negative impact for environment (i.e. more hours flown), in quantitative terms this is marginal over the total of aviation environmental impact.
- Regarding the extension of the privileges of the LPL to other types or classes within the same aircraft category, to **select Option 13C**: to create a new system for the controlled extension of privileges to another class of aeroplane (e.g. from single engine piston aeroplanes below 2000 Kg MTOM to touring motor gliders) or for the extension of privileges to other types in the case of helicopters. This option scores sufficiently in positive safety terms, and it is definitely the best from the economic point of view as well as in terms of regulatory harmonisation, and it is environmentally neutral.
- Concerning the minimum age for the LPL, to **select option 9.1B**: to establish the minimum age of 16, as per proposal of the group, after comparison of national models. This option is positive for safety and neutral from an environmental point of view, and is the best in terms of economic and social impacts.
- In what regards the concept of the full LPL(A), to **select option 9.2C**: to take ICAO SARPs as reference, but create less stringent requirements in some aspects. This option is positive in terms of safety and neutral from an environmental point of view, and is the best in terms of economic and social impacts.
- Relating to the concept of the full LPL(H), to **select option 9.3C**: to take ICAO SARPs as reference, but create different requirements in some aspects. This option is positive in terms of safety and neutral from an environmental point of view, and is the best in terms of economic and social impacts.
- As to the concept of the full LPL(S), to **select option 9.4C**: to take ICAO SARPs as reference, but create different requirements in some aspects. This option is the only one to score positively in terms of safety, it is neutral from an environmental point of view, and it is acceptable in terms of economic and social impacts.
- In relation to the concept of the full LPL(B), to **select option 9.5C**: to take ICAO SARPs as reference, but create different requirements in some aspects. This option is the only one to score positively in terms of safety, it is neutral from an environmental point of view, and it is acceptable in terms of economic and social impacts.
- With reference to whether or not to introduce private licences for airships, to **select option 9.6B**: to create a PPL for airships, but not an LPL. This option scores positively in terms of safety and economic and social impacts, and it is neutral from an environmental point of view.
- In what pertains to the validity of the LPL, to **select option 1C**: to establish the undetermined validity of the licence, but with currency requirements for maintaining the privileges. This option scores positively in terms of safety and economic and social impacts, it is neutral from an environmental point of view, and it is the best from an equity and fairness point of view.

### *Other categories of pilots*

- Pertaining to the issue of whether to request proficiency checks for all non-commercial pilots, to **select Option 2D**: Establish for all non-commercial pilots (LPL, PPL, BPL, SPL) the need for proficiency checks with a flight examiner at least every 6 years. This option has a good score in safety terms, is environmentally neutral, maintains a balance between the positive economic impact on society and the additional jobs and the burden for the pilots and is the best in terms of regulatory harmonisation.
- Concerning to whether or not allow non-commercial pilots to provide instruction for remuneration, to **select option 14.2C**: allow all non-commercial pilots, with the exclusion of the LPL, to provide remunerated instruction, providing that they hold a valid instructor certificate for the relevant aircraft category and class. This option scores positively in safety terms, is environmentally neutral and almost neutral in terms of regulatory harmonisation, and is the best in economic and social terms.
- In what regards the issue of the number of pilot licences that can be held, to **select option 15.1C**. This option scores positively in terms of safety, it is neutral from an environmental point of view, and even if it not the best in terms of economic and social impacts, it is the best from an equity and fairness point of view.
- In reference to the re-assessment interval for language proficiency, to **choose option 11C**: to establish re-assessment periods in accordance with the ICAO Annex 1 recommendation. This option is neutral in safety, economical and social terms, but it is the best in terms of ensuring compliance with ICAO requirements.
- Relating to the issue of whether the instrument rating for helicopters should be type specific, to **select option 8B**: to harmonise with the system for aeroplanes, making the instrument rating not type specific. This option is neutral in safety, economical and social terms, but it is the best in relation to equity and fairness issues.
- As to the issue of whether or not to establish additional ratings in relation to those that existed in JAR-FCL, to **select option 17.1C**: to develop ratings for aerobatic flying, sailplane and banner towing and mountain flying, and leave the rest of the examples given by Member States under the general responsibility of operators to provide training for their staff. This option scores positively in terms of safety, economic and social impacts, and it is the best in relation to equity and fairness issues.
- In what regards the privileges to carry out commercial activities for pilot of balloons, airships and sailplanes, to **select option 14.1C**: to Create a CPL for airships and provide for the extension of the privileges of the BPL / SPL to commercial activities, under some conditions. This option scores positively in terms of safety, economic and social impacts, and it is the best in relation to equity and fairness issues.
- In relation to the requirements for the CPL and the instrument rating for airships, to **select option 17.2B**: to take ICAO SARPs as reference, but create different requirements in some aspects. This option scores positively in terms of safety, economic and social impacts, and it is the best in relation to equity and fairness issues.
- As per the question of the level of development of the requirements for pilots of powered-lift aircraft, to **select option 15.2D**: to create at this stage only a type rating for powered-lift aircraft, accessible to holders of an ATPL(A) or (H), and leaving the development of the full licensing system for these aircraft to a later stage, when more knowledge is available. Taking into account time constraints and lack of expertise available, this option appears as the best short term solution.

### *Instructors and examiners:*

- Regarding the issue of the skill test for instructors, to **select option 3E**: to require a skill test for all categories of instructor, except for the MCCI, the STI and the MI. For these categories, the assessment of competence is made as a part of the training course during a flight supervised by an examiner or an instructor specifically nominated by the training organisation for this purpose. This option scores positively in terms of safety, economic and social impacts, and it is the best in relation to equity and fairness issues.
- Concerning the issue of whether to require regular proficiency checks for instructors, to **select option 4I**: the requirement to fulfil two out of three requirements every three years, but with a

mandatory check each alternate revalidation for FI(A)/(H) and every third revalidation for LAFI and FI(S)/(B). This option is the best in safety terms, has, although creating additional costs for the FIs, a positive effect in terms of economic impact, scores on an acceptable positive level in terms of social impact and regulatory harmonisation, and is environmentally neutral.

- In what refers to whether or not to create new categories of instructors and examiners, to **select option 6.1D**: to create two new categories of instructors for the LPL and the mountain rating, and add privileges to existing categories of instructors / examiners in all other cases. This option scores positively in terms of safety, economic and social impacts, and it is the best in relation to equity and fairness issues.
- With reference to the issue of the MCCI for helicopters, to **select option 6.2C**: to create a MCCI for helicopters. This option is the only one to score positively in terms of safety, and it is also positive in terms of social and economic impacts.
- Regarding the requirements for examiners, to **select Option 7C**: to establish new and comprehensive common requirements and associated privileges. This option is the only one scoring positively in safety terms, is environmentally neutral, and creates a positive social impact

#### *Medical issues:*

- For the requirements for the medical certificate for the LPL, **select option 5.1C**: to create specific medical requirements for the LPL. This option is the best in terms of safety, scores positively in terms of economic impact and global harmonisation, and is neutral in terms of environmental and social impacts.
- Regarding which medical certificate should be required for BPL and SPL holders when developing commercial activities, to **choose option 5.2B**: to require class 2 medical certificates for balloon and sailplane pilots when developing commercial activities. This option is the most adequate since a CPL was not created for balloons and sailplanes: it would be disproportionate to require an ICAO class 1 medical certificate. Equally, it does not seem necessary to develop specific medical requirements in this case.
- Concerning the competence for the initial issue of class 1 medical certificates, to **select option 5.3C**: the initial issue of Class 1 medical certificates is done by aeromedical centres, but aeromedical examiners keep the competence for revalidation. This option scores positively in terms of safety, economic and social impacts, and it is the best in relation to equity and fairness issues.
- In relation to the validity of class 2 medical certificates, to **select option 5.4B**: to change the system of JAR-FCL 3, by taking only the ICAO standard of paragraph 1.2.5.2.4, which would extend the validity period of Class 2 medical certificates for PPL holders above the age of 50 from 12 to 24 months. This option scores positively in terms of safety, and even though it may reduce the FTEs for national authorities, it is the best in terms of equity and fairness.
- As for the validity of AME certificates, to **select option 5.6C**: to establish a system of unlimited validity for these certificates, with requirements on the maintenance of knowledge and experience. This option scores positively in terms of safety, economic and social impacts, and it is the best in relation to equity and fairness issues.
- In relation to the competence to issue class 2 medical certificates in contentious cases, select option 5.5B: to give competence for the decision on medical fitness of private pilots who do not fully comply with the requirements to the AeMC and AME. This option scores positively in terms of safety and economic impacts, is neutral in terms of environmental and social impacts, and is the best in terms of equity and fairness.