

REVIEW OF AIR TRAFFIC CONTROL TRAINING REQUIREMENTS

Final Report

Vers. 2.0



Integra Consult A/S

September 2003

TABLE OF CONTENTS**Page****EXECUTIVE SUMMARY**

1	INTRODUCTION	6
1.1	General	6
1.2	Scope and structure of the document	7
1.3	Background	7
1.3.1	Today's situation	7
1.3.2	Training issues	7
1.4	Methodology – Questionnaire and Approach	8
1.4.1	Purpose	8
1.4.2	Composition	8
1.4.3	Philosophy	8
1.4.4	Cooperation – Review Group	9
1.4.5	Workshop	9
1.5	Team Composition	10
1.6	Acknowledgments	10
2	MAIN FINDINGS	11
2.1	Candidate Entry Qualifications	11
2.1.1	Observations and Analysis	11
2.2	Training	12
2.2.1	Observations and Analysis	13
2.3	Unit Training	14
2.3.1	Observations and Analysis	14
2.4	Licences, Ratings and Endorsements	15
2.4.1	Observations	16
2.5	Maintenance of competence	17
2.5.1	Observations	17
2.6	Suspension and revocation of licences	18
2.6.1	Observation	18
2.7	Recognition of foreign licences	19
2.7.1	Observations	19
2.8	Accreditation criteria and sanctions	19
2.8.1	Observations	20
2.9	Adherence to EUROCONTROL documents	21
2.9.1	Observations	21
3	COMMENTS FROM STAKEHOLDERS/MEMBER STATES	23
4	COMPARATIVE CONCLUSIONS BETWEEN OTHER PROFESSIONAL GROUPS	24
4.1	Pilots	24
4.1.1	Background	24
4.1.2	Main findings/Conclusions	24
4.2	Doctors	24
4.2.1	Background	24
4.2.2	Main Findings/Conclusions	25
4.3	Maritime	25
4.3.1	Background	25
4.3.2	Main findings/Conclusions	26
5	WORKSHOP	27

6	MAIN CONCLUSIONS.....	28
6.1	Sub-conclusions and Details	29
7	ACRONYMS AND REFERENCES	30
7.1	Abbreviations and Acronyms.....	30
7.2	References.....	30

EXECUTIVE SUMMARY

As part of the Single European Sky Programme the European Commission set up a High Level Group to advise the European Commission on the reform of the Air Traffic Management sector in Europe.

One of the recommendations from the High Level Group was to introduce a European Air Traffic Controller License in order to ensure adequate safety standards and controller mobility between Member States.

In July 2002 the Directorate - General Energy and Transport - launched an invitation to tender for a services contract regarding "Review of air traffic control training requirements with a view to reinforcing harmonisation and mobility".

The contract was awarded to Integra Consult, Denmark, and a Project Team was subsequently composed of specialists from DFS Consulting and Hanson Consult within the fields of Air Traffic Management, Training and Human Resources.

This report contains the conclusions of the Project Team, and it conforms to the objectives of the study, in that it identifies the present situation throughout the EU:

- in the area of recruitment and training;
- in the implementation of EUROCONTROL ESARR 5 and related documents;
- in the comparability with other professions;
- in the social issues related to a license;
- in linguistic requirements;
- in medical requirements;
- in requirements to maintain a license;
- in national regulatory procedures for license administration;
- in mutual acceptance of foreign licenses and training.

The conclusions in the report are based on:

- questionnaires distributed to all EU Member States;
- validation visits to selected States;
- video interviews with active ATC instructors and ATCO candidates;
- contributions from stakeholders;
- analyses of comparative professional groups,
- outcome of a seminar held in June 2003.

During the process it has been essential that all EUROCONTROL activities and deliverables related to the implementation of ESARR 5 and the European Manual of Personnel Licensing - Air Traffic Controllers should not be duplicated, but the outcome of the study should be a complementary report.

The main conclusions in the report are:

- the introduction of the European ATCO licence will contribute to the improvement of safety and as a side-effect might facilitate the mobility of controllers;
- the EUROCONTROL training deliverables should be adhered to;
- training plans at all levels of training should be harmonised;
- initial training should be more thorough with regard to skills of the student to make the on the job training more efficient while maintaining safe operations;

- fully transparent training quality and audit systems should be introduced;
- qualification requirements for instructors, assessors, examiners and auditors should be harmonised;
- appeal rights for candidates and controllers, who fail assessments should be harmonised and made public;
- a common policy for acceptance of foreign licenses and examinations should be elaborated;
- linguistic requirements should be homogenous accreditation criteria for training
- certification criteria for training providers should be developed.

The above conclusions are based on the analysis of our database and detailed explanation and recommendations are listed under Chapter 2.

The Project Team has also conducted follow up discussion after the workshop and it can be concluded that Regulators and ANSPs expressed their wish to improve the current situation in the above mentioned areas. As a main point it was underlined that, the introduction of candidate licence should lead to a clear definition of the performance objectives of the Initial Training.

Subsequently the Candidate licence has to be mutually recognized and the validity of the licence regulated at European level.

Strengthening the initial training should reduce Pre-OJT and the safety critical OJT period. In order to ensure full harmonization of the training performance, the responsibility of the national regulator should be described in detail within the framework of the EU standards and the respective controlling activities.

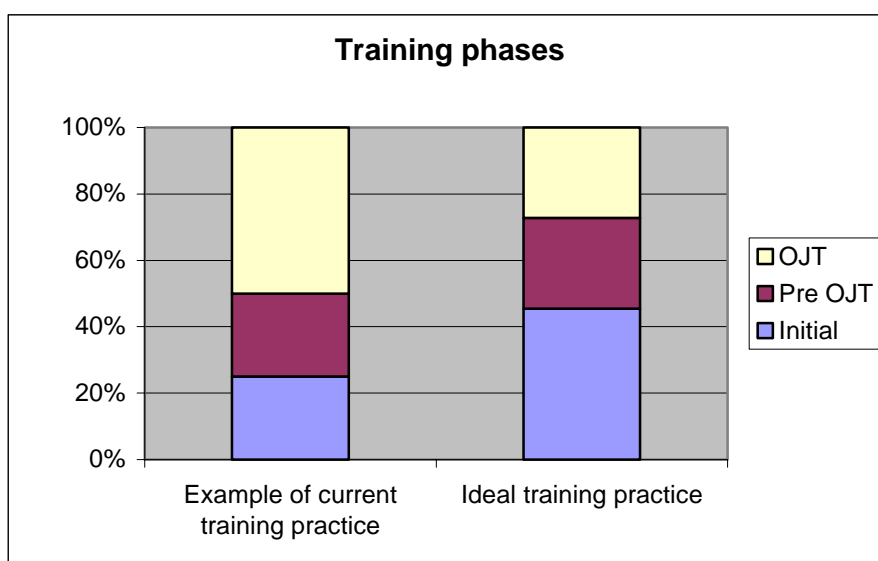


Figure 1: Training phases

As part of this study, our team has also examined the differences and the similarities between controllers, pilots, maritime and doctors' training. This issue will be summarised in detail later in this document, but the main conclusions based on the reference group study imply that the key to a successful harmonisation of the ATCO training is found in the level and length of initial training.

An extract from the answers of the most important areas can be found in Annex A.

1 INTRODUCTION

1.1 General

Integra Consult has been contracted by the Directorate General for Transport and Energy of the European Commission to carry out a study on Air Traffic Control training requirements with a view to reinforcing harmonisation and increasing mobility.

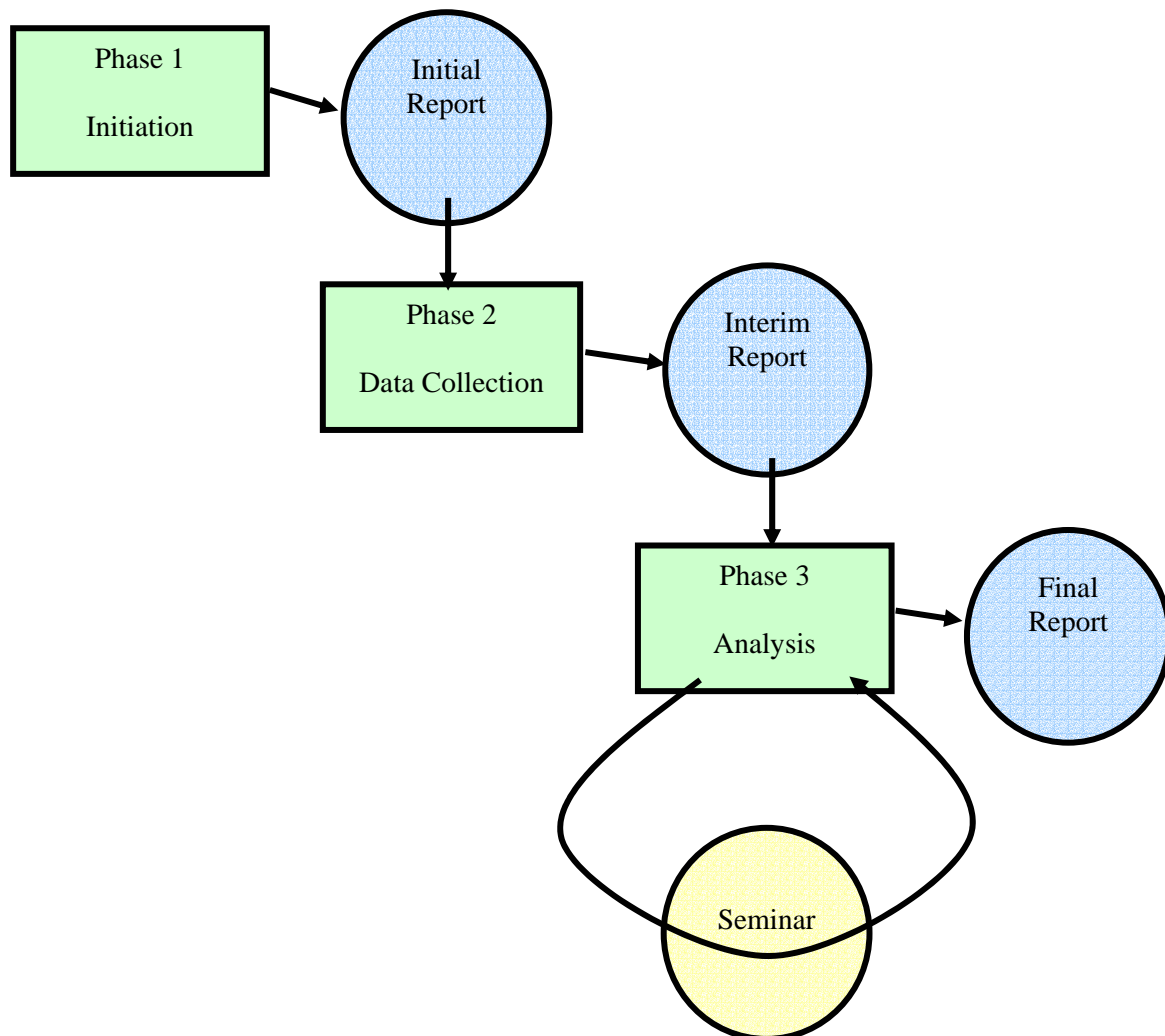
The objective of the study is to collect information on all aspects of the present situation in Air Traffic Controller training and licensing and, based on the data analysed, provide the Commission with recommendations for community legislation.

In its proposal, Integra Consult has defined a number of phases and work packages in order to define a work structure and thus ensure the high quality and timely delivery of the deliverables. The defined phases as it was stated in the proposal and in the initial report are the following:

- Phase 1 – Initiation
- Phase 2 – Data Collection
- Phase 3 – Analysis.

These phases are shown in the figure below.

Figure 2: Project Phases



1.2 Scope and structure of the document

The main focus of the present document is to analyse, summarise and conclude the findings of the study and of the seminar and to provide decision basis to the European Commission based on the observations made within the different areas of training and licensing.

The document comprises:

- analysis of and comments on the data collection results;
- general comments received from stakeholders during the project process;
- a comparative analysis of different professional groups of training resources and issues related to harmonisation;
- extracts from the workshop held in connection with the project;
- general comments and recommendations from the project team.

1.3 Background

1.3.1 Today's situation

The variety of national processes and national standards, including Air Traffic Management, is an example of Europe's diversity. The Single European Sky initiative aims to harmonise the provision of Air Navigation services. Harmonised standards have to be implemented, followed up and audited in order to ensure safety and mobility. ATCO training and licensing are no exception. Although ICAO has developed recommended rules and practices, air traffic control has always been a mixture of international standards and local regulations. ICAO and EUROCONTROL have done considerable work to ensure common standards for ATM training methodology, but unfortunately as practice (e.g. lack of mobility) shows there are still areas that need to be addressed.

1.3.2 Training issues

When discussing training, one of the first topics coming up is the failure rate of the training. For the ATC community, the "Study on Impediments to the Recruitment of Air Traffic Controllers" prepared by AirEurosafe, revealed interesting facts about the failure rate. These rates for candidate air traffic controllers vary Europe wide from "almost nil to 20-25%". The resulting question why the figures vary that much over Europe can have a multitude of answers. It could be the recruitment process, the initial or unit training, the standards set in the exams, the trainers or the attitude of trainees.

The project team does not intend to answer this question, but is going to analyse and to draw up a picture about existing training practices and about planned changes.

One issue not to be neglected is the safety issue connected to candidate controllers working in a life environment. The On-the-Job Training (OJT) is a fine-tuning of already existing skills. The On-the-Job Training Instructor (OJTI) expects these skills to be developed so he/she can leave the trainee to control the traffic and only interfere if a situation occurs, which the trainee obviously cannot handle. This requires a highly qualified OJTI with regard to human and controller skills. This definition of the OJT and the expectations of the OJTI oblige the trainee respectively the training institute to prepare as good as possible for the job. This includes among others the attitude towards the OJT, and a thorough theoretical and sufficient practical training.

With regard to the mobility of candidate controllers and controllers the training should be standardised in a way that every ANSP knows what kind of qualification and theoretical/practical skills it will be employing. This requires European wide standards as depicted e.g. in the CCC including training methods, simulation and examination standards or standards for OJTI qualification.

1.4 Methodology – Questionnaire and Approach

As a means of data collection for the analysis of training requirements in the EU Member States, a questionnaire was developed. The questionnaire was tested through validation visits to selected states and thereafter distributed to all EU Member States. The incoming questionnaires were consolidated into a knowledge database upon which future work within the field of training regulation can be performed.

1.4.1 Purpose

The most important perspective of the data collection is to consolidate an accurate knowledge database which describes the present situation regarding controller training requirements in the EU-States. From this perspective, future work could be implemented based on the true status description.

1.4.2 Composition

The questionnaire is divided into two main parts:

1. Regulatory questions (To be answered by regulatory unit)
2. ANSP questions (To be answered by service providing unit).

Each of the two main categories comprises four sub categories:

- a) Institutional
- b) Quality management/auditing
- c) Regulations
- d) Licensing of foreign controllers.

The composition is shown in Figure 3 below.

1.4.3 Philosophy

The questionnaire is aimed at assessing training requirements in EU Member States by applying a breakdown of different legislative, regulation and recommended practice requirements. These requirements are subtracted from ESARR 5, The European Manual of Personnel Licensing, ICAO Annex One etc. The breakdown of requirements could be applied at different levels, but for the purpose of this study, an overall level of detail has been chosen. Thus, the focus is on the overall certification issues comparable with other types of certification (e.g. a driver's licence). The breakdown of requirements is visualised in Figure 3 below. Other aspects of the data collection process will comprise a workshop and a reference group.

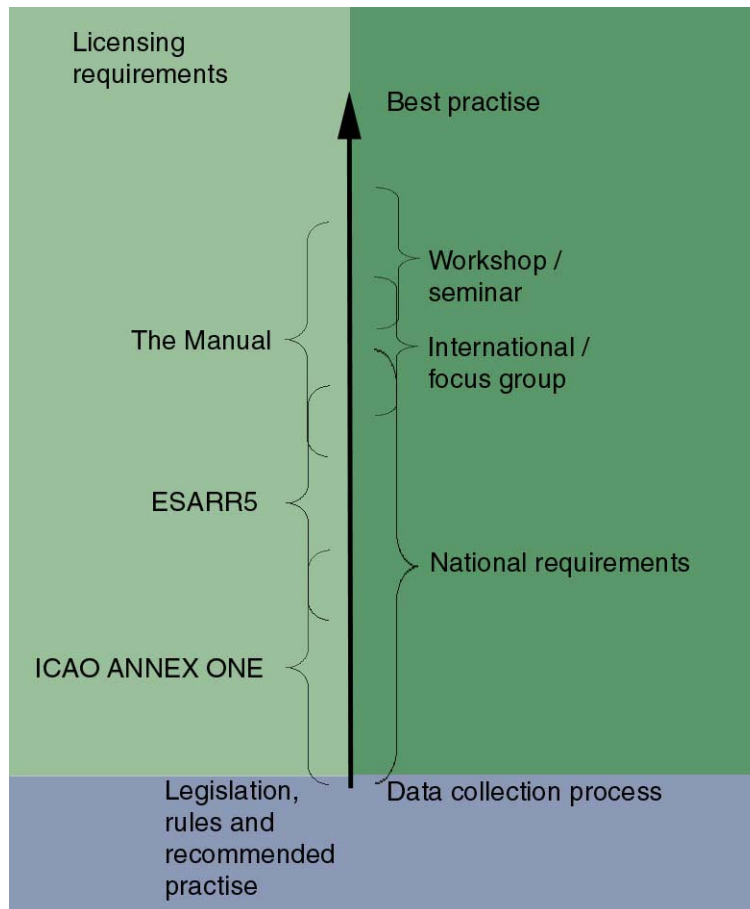


Figure 3: Questionnaire philosophy

1.4.4 Cooperation – Review Group

In order to ensure that the questionnaire is comprehensible, complete and unambiguous the monitoring group, composed of EUROCONTROL, CANSO and ETF, has revised the questions. Furthermore, the questionnaire was validated in a few European States and then finalised based on the remarks of the validation states and of the review group.

1.4.5 Workshop

One of the most important parts of the project was the organisation of a workshop in Brussels on 19 June 2003. During the planning process of this study, great attention was paid to schedule all activities in a logical order. The project team was keen to follow the proposed phases and the agreed milestone events that have been divided into 3 phases with related work packages and activities (Figure 2).

The project team used the previously performed analysis as a basis for professional discussions during the seminar. Although most of the answers indicated the planned and ongoing work in the ATCO training harmonisation, the incoming answers clearly identified the current differences or even shortcomings in the legislative, institutional, training delivery and auditing areas.

Although Phase 2 was devoted to focus on the training and mobility situation of ATCOs, an initial review of the situation in the so called reference groups (pilots, doctors, maritime officers) has shown an interesting perspective to further elaborate similarities and lessons learnt by these professional groups.

Therefore, the seminar also included a presentation by two speakers from the reference groups and one speaker representing a non-European ANSP.

However, the main objective of the seminar was to collect consolidated views and proposals to support the EU legislative process and to increase awareness on the licensing and training harmonisation issues.

1.5 Team Composition

The project team is composed of:

Mr Zoltán Gáti, Project Manager, Integra Consult
Mr Klaus-Dieter Ehrhardt, Senior Expert, DFS
Mr Achim Baumann, Senior Expert, DFS
Mr Per Hanson, Senior Expert, Hanson Consult
Mr Claus Lund Jensen, Expert, Integra Consult
Ms Annamária Bózsza, Co-ordinator, Integra, Consult

1.6 Acknowledgments

The project team hereby would like to thank EUROCONTROL, Canso, ITF and all participating countries for their efforts, support and contribution to this study. Furthermore, the project team would like thank EUROCONTROL for creating the documents that are referred to or used in the Final Report.

2 MAIN FINDINGS

The questionnaires, separate ones for ANSP and CAA questions, were sent out to all EC Member States. Addressees have been the ANSPs and regulatory authorities or ministries depending on the organisation existing within in the states government. For the ANSP part of the questionnaire, 14 filled versions have been received. The response for the regulatory part were 13 filled versions.

Further analysis is based on the main findings resulting from the data collection in the following domains:

- 1) candidate entry qualifications;
- 2) initial Training;
- 3) On-the-Job Training;
- 4) licences, Ratings and Endorsements;
- 5) maintenance of competence;
- 6) suspension and revocation of licences;
- 7) recognition of foreign licences;
- 8) accreditation criteria and sanctions;
- 9) adherence to EUROCONTROL documents.

Note that some answers were unavailable in certain states, which is why some of the questions had a hit rate below 100%.

2.1 Candidate Entry Qualifications

This subchapter relates to requirements and qualifications for potential candidates.

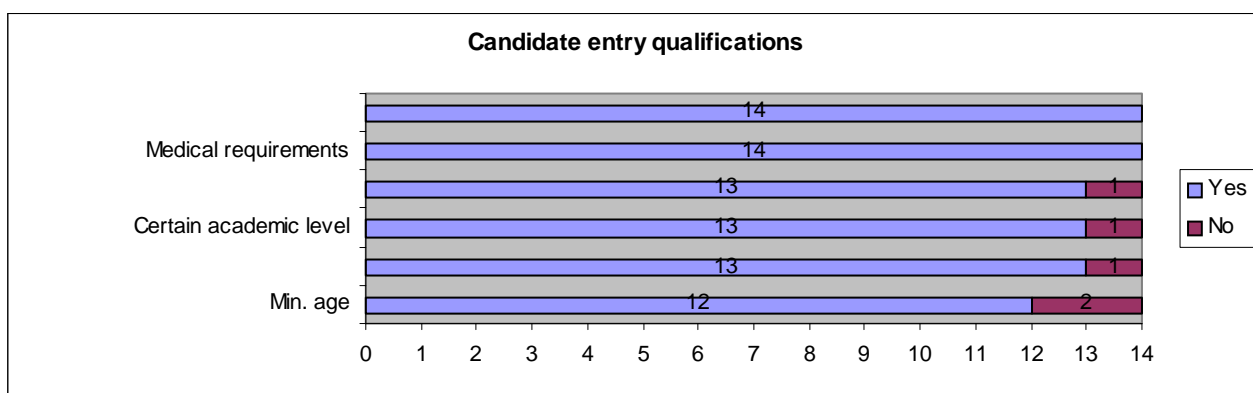


Figure 4: Candidate entry qualifications

2.1.1 Observations and Analysis

Most states have uniform candidate entry qualifications, (university entry level or higher education is required to start an ATCO training). Language qualification has a particular safety importance for the ATCO job and it should be harmonized at EU level. However, interviews conducted in different EU countries have indicated that - compared with the situation of e.g. 20 years ago - in most EU countries the candidates of today have acquired quite a high level of English before they apply to become an ATCO. Therefore, the proposed EU Directive could establish English language standards, which go beyond the global ICAO requirements. EUROCONTROL EPT or PELA English tests are likely to be the most appropriate and accepted tools to ensure a harmonized level of English qualifications.

Recommendations:

Candidate entry qualifications should be comprised in the EC Directive/Regulation. Candidate entry qualifications should include minimum education, age, language, aptitude test, medical and psychological approval.

Remarks:

Whilst the states should be given the freedom to establish a minimum and preferred level of education as entry requirement, any differences in EU level would have the following two consequences: if one state requires – as a standard! – higher diploma/academic education, the minimum age of candidates will be consequently higher in that particular country (as an example, a student can be 19 and holding a student licence whereas he wants to go to a country which requires 21 years of age or more). The other aspect is, however, more complicated. Air traffic controllers in countries where academic education is required might oppose the acceptance of colleagues who do not have the same academic grade. It might therefore negatively influence the mutual recognition of European licence and controller's mobility.

2.2 Training

This subchapter relates to requirements and responsibilities of training.

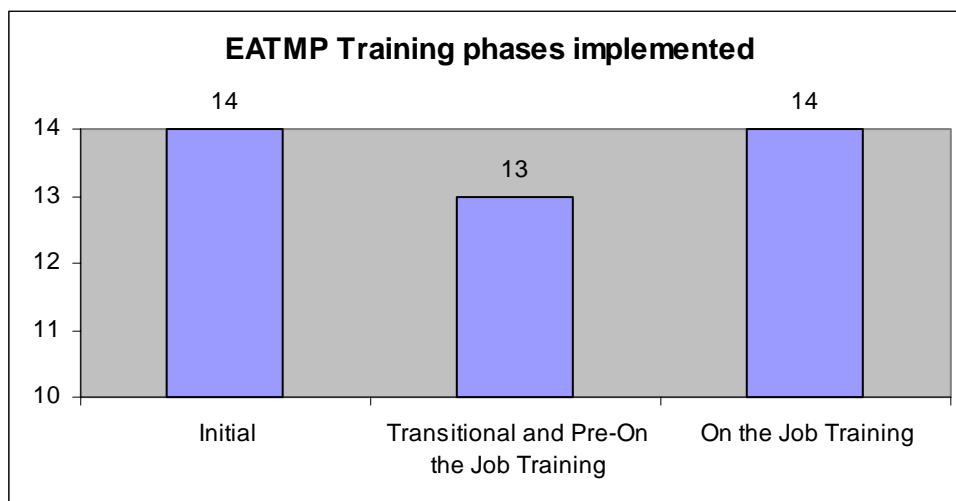


Figure 5: EATMP Training phases implemented

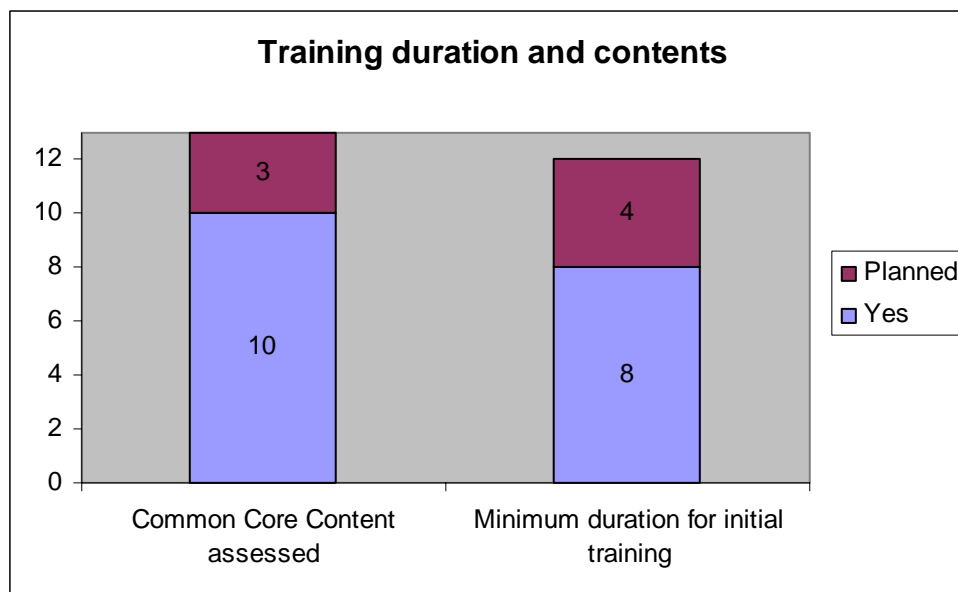


Figure 6: Training duration and contents

2.2.1 Observations and Analysis

Most states have implemented the EATMP training phases. Although, going into detail significant differences were found in the current training practices/modules in EU Member States. The main elements of the training in almost all states follow the EATMP training guidelines. The initial training provides candidates with the necessary skills and knowledge to a level of competence that will prepare them for training at operational units. Unit training, divided into transitional training, Pre-On-The-Job training and On-The-Job training must adequately prepare candidates for final examination/assessment as Air Traffic Controllers. Most states comply with the EUROCONTROL Guidelines for initial training, however, the performance objectives of the initial and unit training are quite different in each state/ATC unit.

Whilst the complexity of the unit training clearly depends on the actual operational requirements (local environment), the initial training could be based on more standardized criteria. Hence, the introduction of a Candidate licence is one of the new elements of ESARR 5, therefore clear and standardized performance requirements should be linked with this training phase. Keeping safety in mind, today the operational ATC environment cannot accept “candidate service” to the increasing number of aircraft. With other words, ATCO candidates must learn as much as possible in simulated environments ensuring a reduction in the OJT period and an increase in safety. Comments from IFATCA have confirmed that experienced OJTIs are more and more reluctant to take candidates for longer periods. It is therefore in the interest of all involved to strengthen the initial training (“unsuitable candidates should be identified and selected out as early as possible”). In this case, the Candidate licence could ensure a real value, the same quality regardless at which institute the initial training was delivered. In addition, from performance point of view the Candidate licence could be mutually recognized for any kind of unit training.

Recommendations:

The EATMP training phases should be adopted in the EC Directive/Regulation. The Common Core Content should be referred to in the EC Directive/Regulation as a minimum means of compliance with the Directive/Regulation. The training objectives of the initial training should be fully harmonized based on clear performance requirements.

2.3 Unit Training

This subchapter relates to requirements and responsibilities of OJT.

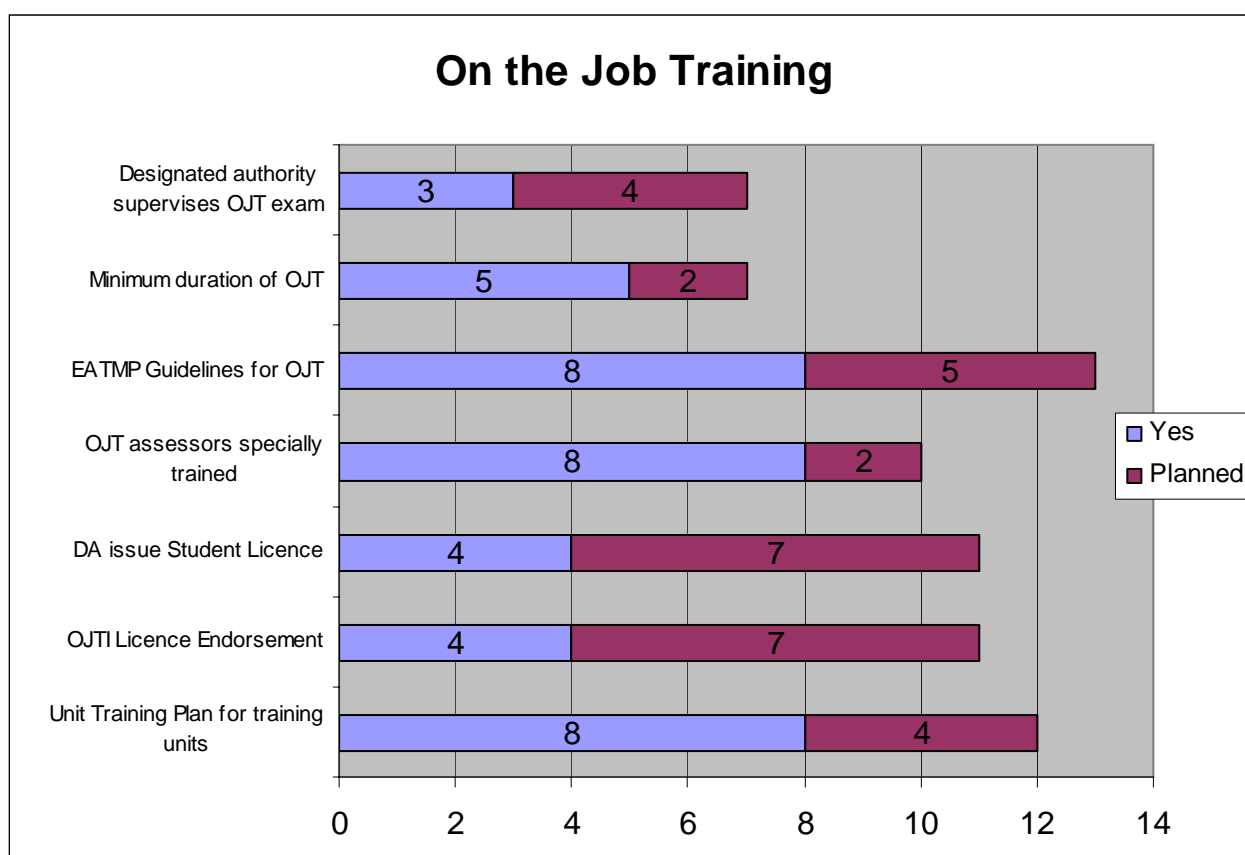


Figure 7: On-the Job Training

2.3.1 Observations and Analysis

Most states have implemented or are planning to implement the EATMP Guidelines for On-the-Job Training, Unit Training Plans, On-the-Job Training Instructor Licence Endorsement, and Candidate Licenses. Some states have determined, or are planning to determine a minimum duration of OJT.

The designated authorities are only limited involved in OJT examinations/assessments. OJT is the most safety critical part of an ATCO training. On the other hand the study shows that in some states OJT is also the most unregulated part leaving quite a lot of freedom to the unit instructors of how to manage the candidate training. Whilst the general guidelines of EATMP are applied by most states, the licensing (thus the quality) of OJTIs is not fully ensured.

Recommendations:

EATMP Guidelines for On-the-Job Training, requirements regarding Unit Training Plans, On-the-Job Training Instructor Licence Endorsement, and Candidate Licenses should be incorporated in the EC Directive/Regulation. On-the-Job Training Assessors' qualifications should be elaborated by the designated authority in accordance with the authority involvement in examinations/assessments. A proper mechanism to ensure the fair and equal treatment of candidates during the unit training should be established including standard feedback procedures. The OJT period should not be open-ended. A minimum and a maximum

required duration/actual working hours/ of the On-the-Job Training for each operational sector/position as part of the Unit Training Plan is recommended. (*Safety issue*)

A minimum percentage of operational working hours for On-the-Job Training Instructors without instructional tasks should be specified in the EC Directive/Regulation. Based on interviews with active OJTIs this requirement should be reflected in the Unit training regulations.

2.4 Licences, Ratings and Endorsements

This subchapter relates to the existence of licences, ratings and endorsements.

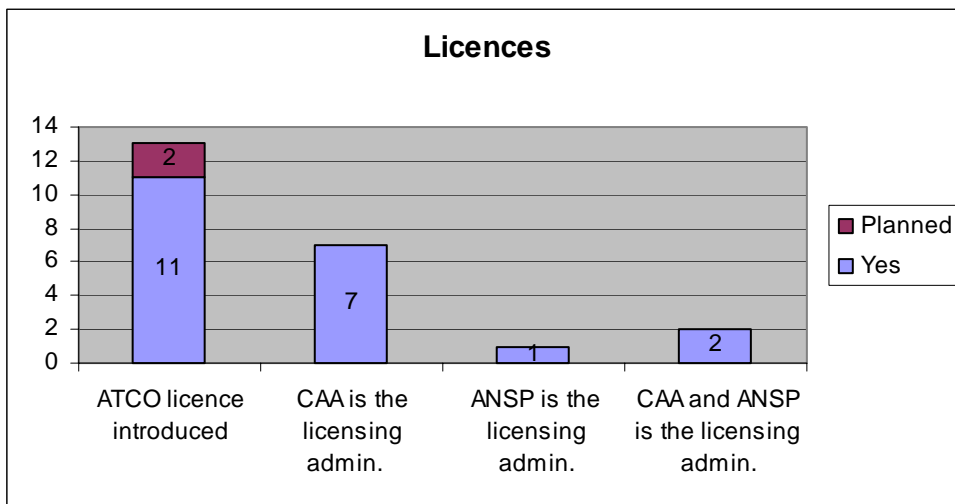


Figure 8: Licences

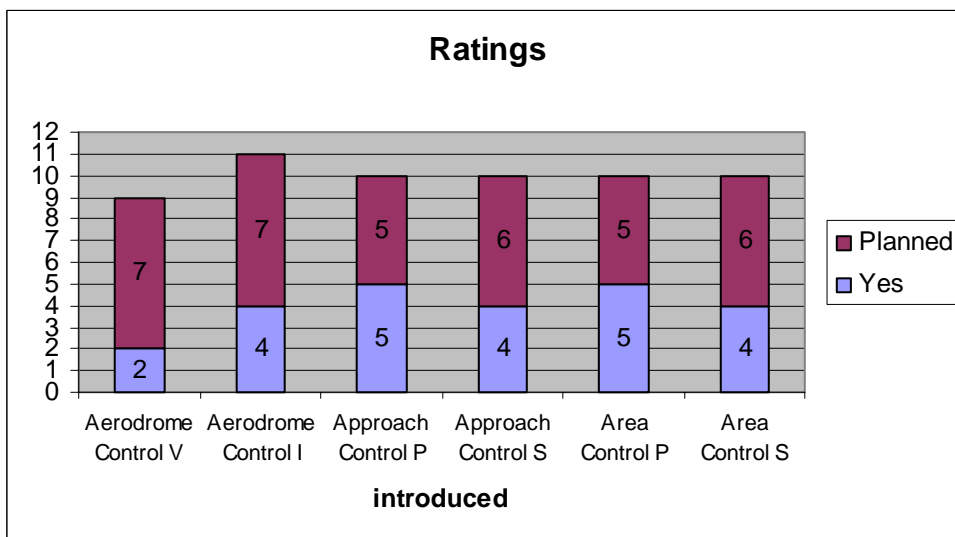


Figure 9: Ratings

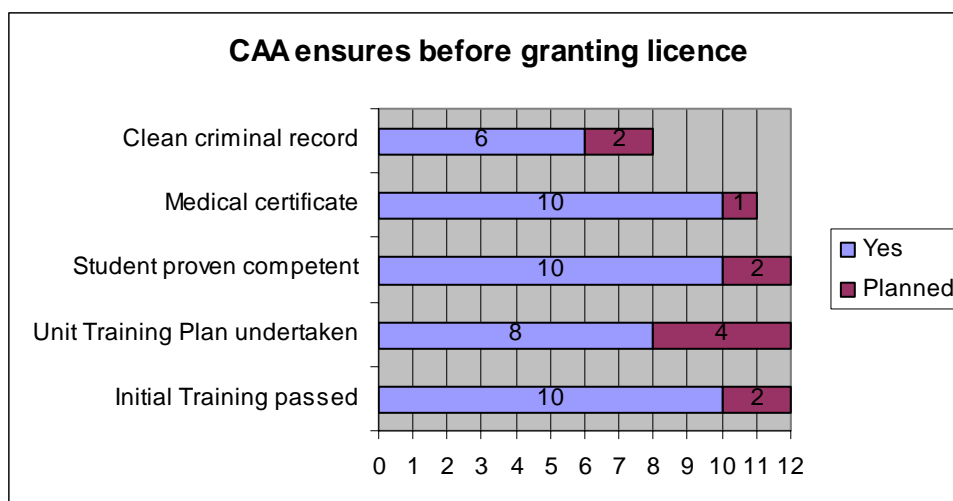


Figure 10: CAA ensures before granting licence

2.4.1 Observations

Most states have introduced or intend to introduce ATCO licenses or certificates of competence and ratings as stipulated in ESARR 5. This should ensure that ATC is performed only by properly qualified personnel and the required number of ATCO is available. In most states the designated authority is the licensing administrator. However, the owner of the licence is not clearly defined.

The conditions to be ensured before a license is granted are commonly agreed, however, not all states require a clean criminal record. The role of CAA regarding the approval and assessment of a Unit Training Plan seems to be the “weakest link” in some states.

Recommendations:

The licence (or certificate of competence) should be the property of the holder. Ratings and endorsements as specified in ESARR 5 and European Manual of Personnel Licensing – Air Traffic Controllers should be adopted in the EC Directive/Regulation. Additional endorsements specifying linguistic (English and – if required other) qualifications should be introduced as standards not to give room for local interpretations of the rules.

In case justified language requirements other than English exist, a standard certificate issued by a competent language institute should be the accepted means of compliance in line with existing European regulations in other safety related areas.

Conditions to be ensured before an ATCO licence is granted should comprise Initial Training passed, Unit Training Plan undertaken, candidate proven competent and reliable, and medical certification valid based on standardized periodical checks.

Remarks:

It must be noted that in order to be valid a rating must be associated with rating endorsement(s) and unit endorsement(s) appropriate to the ATC service being provided.

2.5 Maintenance of competence

This subchapter relates to the management of competencies and competency requirements.

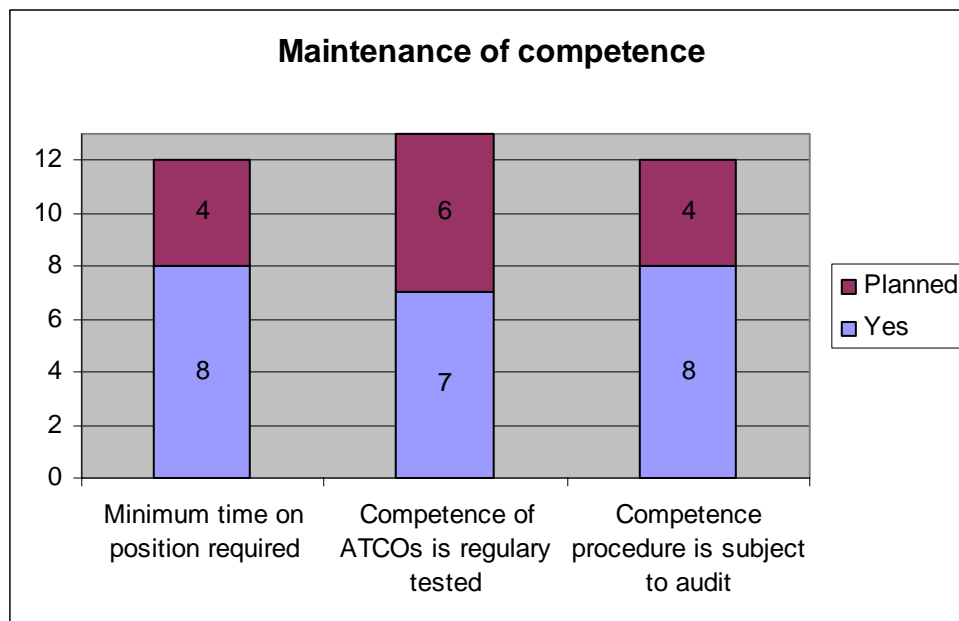


Figure 11: Maintenance of competence

2.5.1 Observations

Most of the responding states are regularly testing air traffic controller competence. In most states are competence procedures subject to audit by the designated authority, and a minimum time on operational positions is required in order to maintain competence. This minimum time on operational positions is a safety issue, therefore it should be harmonized at EU level.

Recommendations:

The EC Directive/Regulations should refer to an obligation of the Designated Authorities to specify minimum time on operational positions and maximum interval between competence assessments.

The EC Directive/Regulation should define the qualifications required to perform competence assessment and introduce a Competence Assessor/Examiner endorsement.

2.6 Suspension and revocation of licences

This subchapter relates to the management of licences.

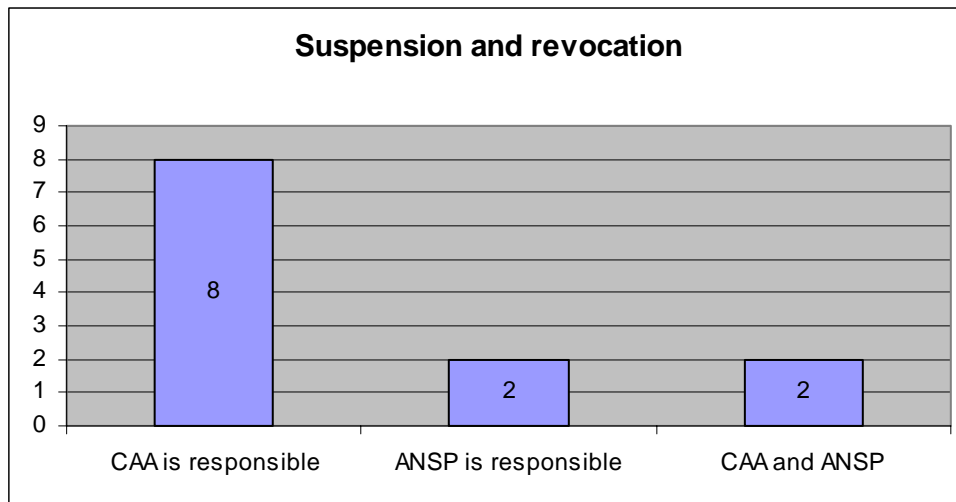


Figure 12: Suspension and revocation

2.6.1 Observation

In most states the responsibility for suspension and revocation of licenses rest with the designated authority. Solution must be found in case of ATC services provided in multinational environment.

Recommendations:

Suspension and revocation of licenses and ratings must be the responsibility of the designated authority. Suspension of endorsements could be delegated to the ANSP in order to shorten the administrative process.

2.7 Recognition of foreign licences

This subchapter relates to the acceptance of foreign licences.

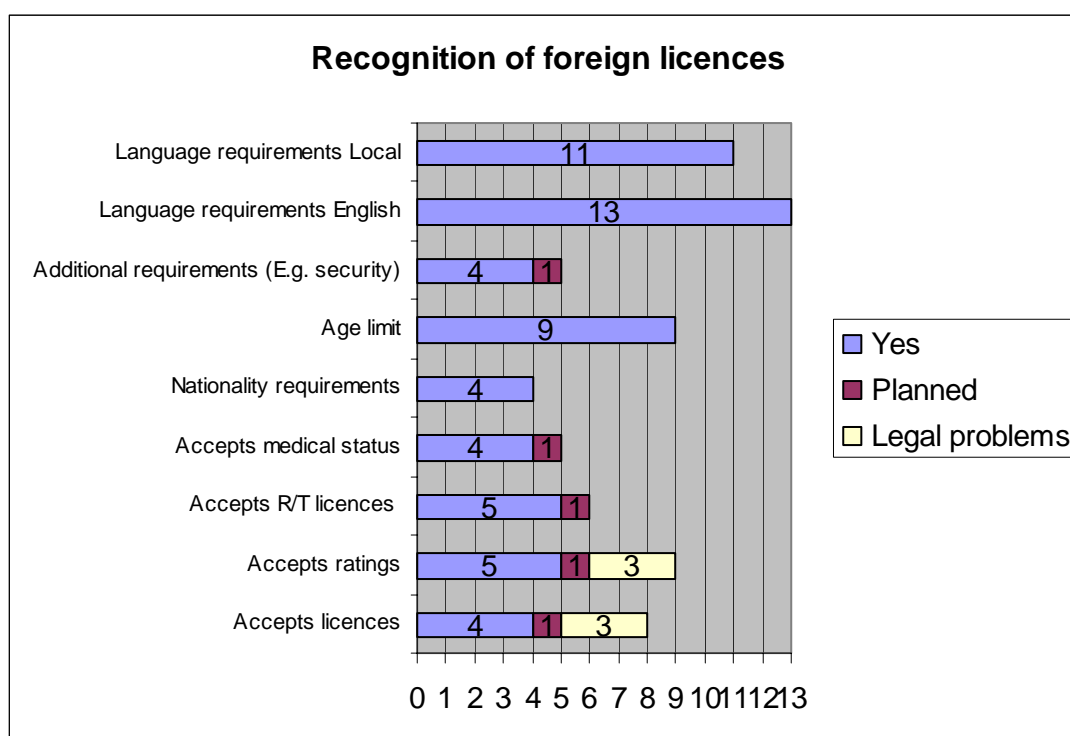


Figure 13: Recognition of foreign licences

2.7.1 Observations

Only few states recognise foreign licenses, ratings, medical status and R/T licences. Insufficient recognition of foreign licenses, rating, medical status and R/T licences is an essential impediment to the mobility of air traffic controllers. By introducing a European Air Traffic Controller Licence it is expected that the impediments to mobility will be reduced.

Language requirements are common, as all states require a certain level of English knowledge, however, most states require also a level of local language knowledge. The necessity to be able to communicate in other languages than English can be justified by existing regulations (such as mixed civil-military environment or on airports and airfields with a significant amount of flights following Visual Flight Rules). However, the necessary “level” of local language knowledge is not always determined on internationally recognized standards/examination. Also, the requirement for R/T certificate is not the same in EU Member States.

Recommendations:

Language proficiency should be notified as an endorsement in the licence. The linguistic requirements for English are fully in line with EUROCONTROL recommendations and no obstacle for mobility, while local language requirements obviously can cause problems. English language requirements should be specified according to ICAO Annex 1 and evaluated regularly, but local language requirements should only be imposed when deemed necessary for safety reasons.

2.8 Accreditation criteria and sanctions

This subchapter relates to approval of training facilities.

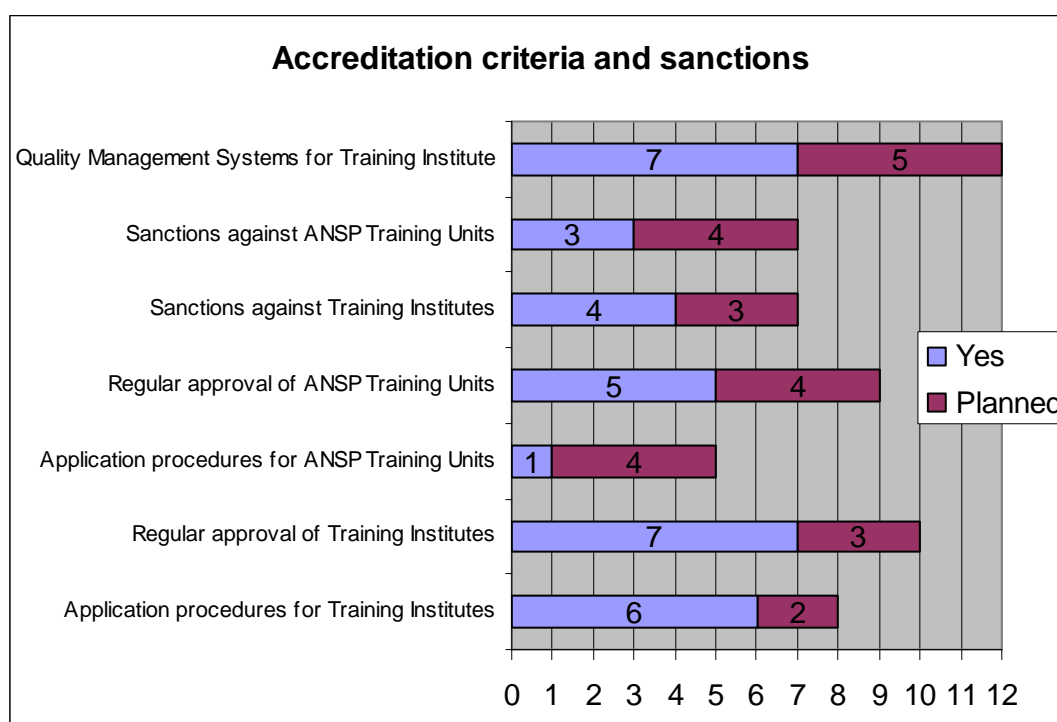


Figure 14: Accreditation criteria and sanctions

2.8.1 Observations

In some states Training Institutes must pass an application procedure to be recognised by the designated authority, and additional number of states are planning to implement an application procedure for Training Institutes. Most states have introduced or are planning to introduce regular approval of Training Institutes. Only one state has, however, an application procedure for ATC Training Units, but more states are planning to introduce application procedures for ATC Training Units.

Most states have implemented or are planning to implement regular approval of ATC Training Units. Sanctions against Training Institutes and Training Units are imposed in some States and more States are planning to introduce such sanctions.

As a key element of the study, the role of the training institutes vv ANSP was analysed. The project team agrees that the current EU wide situation is not fully satisfactory. In most cases, in line with ESARR 5, lot of changes are planned which will improve the current situation. However, a clear cooperation between initial and unit training is still missing. The introduction of Candidate licence will set focus on the modularity of the training, and in particular, the objectives of initial training shall be clearly specified and properly audited. In the future, it should not be possible to provide commercial training course participants with questionable initial training quality. External clients, who today just need a Certificate of Attendance, shall in the future require the issue of a Candidate licence. Therefore, the accreditation of Training institutes should have a high priority issue in order to avoid training dumping. If a training institute assessed to perform below European training standards, all training should be suspended and sanctions should be imposed on it by the Designated Authority.

Today, most of the training academies are strongly linked to ANSPs, who are both clients and supervisory bodies. This is not the best market principle. Training institutes should be given more freedom to react on market demand. In principle, initial training could be conducted in any accredited training academy, where

the accreditation ensures a required and uniform quality. Competition among training institutes will be focussed on decreasing price levels.

Having interviewed some ATCO candidates, who have performed training modules in different countries, it can be concluded that training modules can be conducted in different institutes if the training quality is the same. On the other hand, poor quality initial (or unit) training has a great influence on the success rate at OJT and it has a strong impact on safety.

Recommendations:

Training Institutes should be recognised by the designated authority only after an application procedure has been completed. The recognition process must include required training programmes, syllabi, training and lesson plans, instructor qualifications and training equipment. The recognition process should be described in the EC Directive/Regulation. The designated authority should perform regular audits of recognised Training Institutes.

ATC Units should be recognised as Training Units by the designated authority as part of an ATC Unit certification procedure. The recognition process must comprise instructor qualifications requirements (OJTI) and equipment standards requirements.

The designated authority should perform regular audits of recognised ATC Training Units. It is recommended to establish a regulatory overview mechanism to ensure uniform and accurate audits by the designated authorities at national level.

Appeal procedures for candidates and licensed Air Traffic Controllers, who fail an assessment, should be included in the EC Directive/Regulation.

2.9 Adherence to EUROCONTROL documents

This subchapter relates to adherence to EUROCONTROL documents by the States.

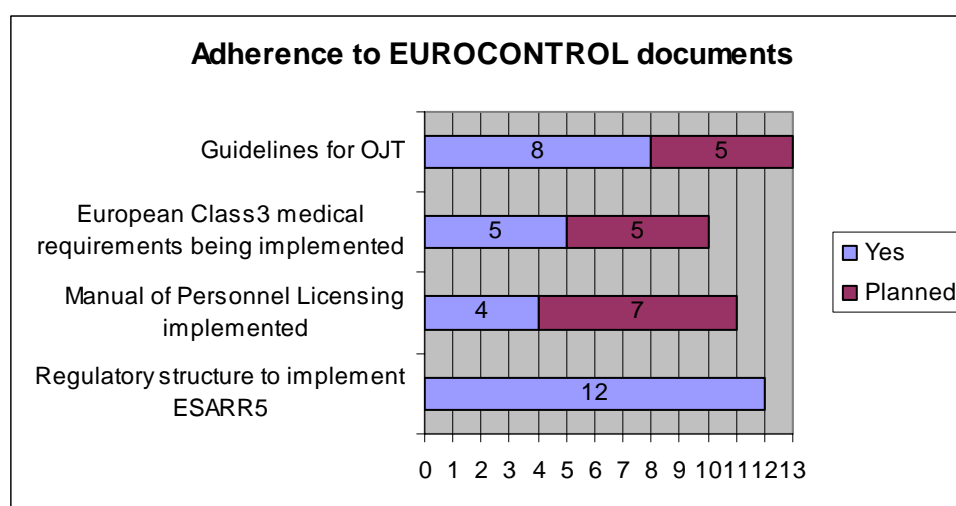


Figure 15: Adherence to EUROCONTROL documents

2.9.1 Observations

Most states have implemented or are planning to implement the EUROCONTROL requirements and guidelines.

EUROCONTROL has in many years developed training material for the use of ECAC Member States. These documents are used in most of the training institutes and the study confirms the very high level of adherence by states to EUROCONTROL documents, be it training material like CCC, or pure regulatory guidelines. Due to the implementation of new ATC technology and operational procedures (stripless environment, OLDI, RVSM or PRNAV procedures) the developing role of EUROCONTROL (IANS) has been appreciated by the aviation society and the courses developed/delivered by IANS represent a very high value. There is, however, a kind of conflict of interest, which should be solved.

One essential element of the proposed EU Directive on training harmonization is the clear separation of training provision and supervision (regulatory) functions. Training institutes might develop own material, but the approval of courses and the performance check of the instructors should be done by a neutral Designated Authority. It should be ensured that there is no overlap in these functions. It is therefore obvious, if such requirements are valid for all EU training institutes, IANS should be managed under similar principles.

Recommendations:

The adherence to EUROCONTROL material should be promoted by the EU Directive (A list of applicable documents is given in Chapter 7). However, direct references to or copying of EUROCONTROL documents (making them binding) might prove difficult even though their contents and intention are fully applicable. EUROCONTROL documents are sometimes written as guidelines or the like and therefore contain ambiguities and texts not suitable for use in a directive. When developing new training material EUROCONTROL – as in the past - should ensure that duplication is avoided by consulting with training providers who might have similar “products” to allow appropriate adaptations for EU members who would like to go faster and further. Separation between training provision and training regulation should be ensured at European level.

3 COMMENTS FROM STAKEHOLDERS/MEMBER STATES

According to the contract obligations the Project Team has organized some Follow up meetings to discuss the results of the workshop and the initial findings. These consultations were aimed to receive direct feedback and comments mainly from training managers, whose institutes are involved in multinational training and regional ATC provisions such as MUAC, NUAC and CEATS. Thus, the following comprise some of the most important comments collected during the consultations.

- As a general comment the usefulness of a European ATCO licence thus the regulatory initiative of the EU was supported. The harmonization of training and regulatory enforcement is crucial to ensure the same output in particular at the issue of Candidate licence.
- The terminology of candidates vis-à-vis students should be clearly defined. Having a student licence would not give the right to a specific person to be hired by a service provider. The service providers will select potential candidates according to their skills. It would be unacceptable for a service provider to be forced by European law to employ a person purely on the basis of him/her holding a licence.
- In recent years ATC training has been affected by two main factors:
 - the increase of traffic
 - the introduction of new technology.
- “Today, ATCOs have to be able to handle a very high amount of traffic, therefore due to safety reasons it is simply impossible to learn “On-the-Job” the major parts of ATC skills”.
- “It would be good to make a proper definition of Initial Training, as this seems to vary between Training institutions.”
- Other comments were concentrated on “to reduce Pre-OJT and OJT periods” as well as to define the requirements to be fulfilled by institutional and operational training units inclusive of the relevant infrastructure and staff qualification.
- European standards (list of criteria) for recognition of training institutes were strongly recommended including a transparent and continuous self-assessment system.
- Training managers welcomed the legal back up (by EU) to the harmonization (of all elements) of the ATM training, e.g. refresher and competency training. On the other hand, it was also proposed that the EU directive should carefully differentiate what should be regulated at EU level and what should be left to national consideration. However, the training performance should not be compromised.
- The need for proper social dialogue was highlighted since highly skilled human resources are the main attributors to the provision of safe and efficient ATC services. The mutual recognition of European licence or certificate of competency can only be effective if the knowledge behind the licence is the same.

These comments are fully in line with the Project Team’s own findings and they largely repeats the views expressed during the workshop listed under Chapter 5.

4 COMPARATIVE CONCLUSIONS BETWEEN OTHER PROFESSIONAL GROUPS

4.1 Pilots

4.1.1 Background

The reference group “Pilots” has been chosen and agreed at the Kick off Meeting. This decision was taken in the light that pilots have a similar situation with regard to mobility as controllers have. They face the same problem of recognition of their skills and competencies proven in their previous working life and documented in their licences.

With a Council directive N° 91/670/EEC on mutual acceptance of personnel licences for the exercise of functions in civil aviation in place the community of pilots has already a EU instrument in place supporting mobility. Nevertheless the Joint Aviation Authority (JAA) has developed, supported by the Member States, the requirements for flight crew licensing (JAR-FCL) including medical requirements.

The JAR FCL 1 (Aeroplane) and the JAR FCL 3 (Medical) are implemented and used in most of the full Member States of JAA. As a means to ensure the standardisation activities connected to these JARS, JAA implements and facilitates Licensing Standardisation Teams (LIST) and Medical Standardisation Teams (MEST). These teams visit the Member States and support the recommendations made by the Central JAA on behalf of the Member States for the mutual recognition of licences.

With regard to R/T licences, it has to be said that there is no separate licence procedure for a pilot. Pilots will receive the licence for R/T at the moment they hold their pilot licence.

When moving pilots, the JAA has noticed several points impeding the mobility such as:

- Language requirements either required by law or required for mandatory test, e.g. in aviation law or training courses
- Costs to produce documents or participate in trainings
- Procedures applied to recognise the licence do not take into account its limited period of validity.

These points have also drawn the attention of the EU and the project team, as they are valid with regard to the Controllers mobility.

4.1.2 Main findings/Conclusions

According to the information made available during and after an interview with JAA representatives, it seems that, concerning mobility of pilots, the concept of mutual recognition is generally working. Impediments do stem from regulations outside the JAR-FCLs. It seems worthwhile to consider some of the outside impediments mentioned above as controllers and pilots face similar issues concerning language and validity of licences.

Standardisation at every level, e.g. training, licensing, examinations or medical requirements, is the key for the concept of mutual recognition. These standards have to be implemented, checked and updated regularly, which can be done by specific organisations/teams.

4.2 Doctors

4.2.1 Background

The directive for mutual recognition of medical diplomas was adopted in 1975 and came into effect in 1976. Since then the directive has been implemented and commonly used and resulted in an almost frictionless

movement of doctors. Mutual recognition will be granted to basic training credentials, based upon agreed criteria if they are recognized in two or more countries with a specified duration of training.

To ensure that the directives are in line with new developments a process was established implementing an Advisory Committee on Medical training (ACMT) together with a Committee of Senior Officials of Public Health (CSOPH).

Comparing ATCOs, pilots, maritime officers and doctors it is obvious that doctors are the most “visible” actors in mobility scenarios. Language plays an important and safety critical role for doctors as well. Nevertheless, this group has managed to “produce” a significant number of professionals working in other countries than their origin.

4.2.2 Main Findings/Conclusions

One of the reasons for the mobility of doctors is the long-standing standardisation and mutual recognition of diplomas (Council Directive 92/51/EEC of 18 June 1992).

The education itself takes longer time (10-12 years to become “fully licensed”), but is less expensive as for ATCOs or for pilots and therefore is usually financed by the candidates themselves. For the mutual recognition of basic training credentials an accepted procedure exist which supports also the mobility during the education programme of doctors. For the local language it has to be said that it is essential for a doctor to communicate with his/her patients in the local language, but this ability can be acquired during required practice periods.

It can be difficult to make a detailed comparative analysis between doctors and controllers, but as an obvious prerequisite for mobility, the recognition of diploma/licence should be solved at European level. With other words, the recognition (of equal quality) of the appropriate training courses delivered in any European institute/university has to be ensured.

4.3 Maritime

4.3.1 Background

The choice of Maritime training/licensing requirements was considered by the project team as a relevant area to include in the study. However, it has become clear that full harmonisation of maritime training requirements and subsequent licensing is rather limited, because European seafarers sailing under certain national flags can be approved under different rules than European Standard.

The fundamental requirements in the field of maritime training and licensing are issued by the International Maritime Organisation, IMO, as the “Convention on Standards of Training, Certification and Watchkeeping”, STCW Convention. This is identical to the requirements issued by International Civil Aviation Organisation, ICAO as Standards and Recommended Practices, SARPs in ICAO Annex1, Personnel Licensing. The European Parliament and the Council have subsequently issued Directives concerning training and certificates of competency.

Maritime Training Institutions must be approved by the Maritime Authorities in the country concerned and be subject to audit by the Authorities. Such audits shall be conducted by qualified persons with intervals of not more than five years. A Maritime Training Institution approved by the Maritime Authorities in one EU Member State is accordingly recognised by other Member States. The Maritime Authorities do not take part in examinations, but random checks are performed by a joint EU Audit Team.

A maritime certificate of competence has a five years period of validity, and certificates issued in a EU Member State are recognised in other EU Member States, however, a recognition certificate of competence

must be issued in the specific state. Apart from the common acceptance of EU issued certificates, also certificates issued in some third countries are accepted by EU Maritime Authorities. The acceptance of certificates issued in none EU States is subject to an approval of the Training Institute, where the training has been completed, by the Maritime Authorities in a EU State.

4.3.2 Main findings/Conclusions

In general the Maritime requirements regarding training and licensing are comparable to the Civil Aviation requirements.

Looking at the situation for standards it seems that all relevant areas like training, licensing, and academies are covered. Again, it shows that standardisation is the key to mutual recognition.

One remarkable achievement for the maritime training/licensing is that procedures for recognition of Licences of none EU States also exist. This process defined here could be a viable way to go ahead once the mutual recognition of European ATCO Licences is established.

5 WORKSHOP

The workshop took place on 19 June 2003 in Brussels where administrations, air navigation service providers, training institutes and trade unions from the European Union and candidate countries were represented. The aim of the seminar was to introduce the idea of a common Air Traffic Controller Licence and get the initial comments from the stakeholders.

The following conclusions were made:

- The most important factor to be taken into account is safety. The directive should focus on ensuring safety besides developing common training requirements.
- Training standards for Candidate Air Traffic Controllers and Air Traffic Controllers to be established for the issuance and prolongation of licences, ratings and endorsements. The underlying principle is to ensure common standards so that Member States have confidence in each other's training systems and mutually accept each other's licences. This goal can only be reached if there is enforceable and high-quality legislation.
- Definition of minimum standards should be set for initial training courses and for the operational training phases as well as for regular refresher and competency trainings.
- Organisational requirements also need to be defined for the delivery of initial, advanced and competency training with regard to performance standards, institutional and operational phases of the training process, type of licences, ratings and endorsements.
- The directive should allow for individualised course requirements since, due to the diversity of training courses, it is difficult to set a specified course length of operational and conversion training or on the number of hours of work required to maintain the licence valid. Overregulation should be avoided.
- Some delegates stated that Common Core Content objectives are not sufficient. If CCC is to be the baseline for the issue of Candidate licence, some more work will be needed.
- Guaranteeing in particular performance standards for unit training and quality standards for instructing staff.
- There was a general support to use ICAO regulation regarding language requirements, but the scope needs to be defined.
- The national regulator should provide a detailed description of the training and licensing regulations and develop guidelines for the implementation of the licence.

6 MAIN CONCLUSIONS

The current legislative situation is not satisfactory. In spite of the professional work done by EUROCONTROL to develop training guidelines and material, some of these documents are not binding or too broad to be used as a directive. Under the current EUROCONTROL Convention, states are not obliged to review the full cycle of the national ATCO training programmes.

The collected data has clearly shown that harmonisation can be strengthened in the following areas:

- implementation of fully transparent training quality and audit system;
- harmonised training plans, in particular more attention on the Unit Training Plans;
- agreed adherence to EUROCONTROL training documents;
- harmonisation of instructors/assessors criteria;
- common policy of accepting – at least the initial training – examination/certificates at European level; thus the student licence should be a mutually recognized document.
- commonly accepted language requirement, clearly specified for each type of ATC job;
- and finally a fair treatment of those ATC specialists who might be interested to use their mobility rights inside the EU.

Hence, the project team underlines the following:

Compared with the executive power of the EU, EUROCONTROL does not have the necessary enforcement tools to accomplish and monitor regulations. Therefore, an EU Directive on Air Traffic Controller Licence will provide the community with precise and identical regulations for the benefit of safety and mobility.

Main elements, which the project team recommends to be treated by such a directive, are:

- Age limitations, validity of rating endorsements and unit endorsements should be provided related to conditions to obtain and maintain a license.
- Competency checking of controllers, the training process and the requirements for examinations including linguistic qualifications and assessments should be described related to candidate training and competence standards.
- All facilities should be accredited, and instructor qualification requirements should be specified related to recognition of Training Institutes and Training Units.
- The circumstances and the appeal process should be described concerning the rights for candidates who fail examinations and controllers who fail assessments.
- The distinction should be transparent and clearly defined related to independence between Regulatory Authorities and Service Providers.
- European standards for recognition of training institutes is strongly recommended including a transparent and continuous self-assessment system.
- Although the introduction of a European ATCO licence is welcomed, the EU directive should carefully differentiate what should be regulated at EU level and what should be left to national consideration.
- Proper social dialogue is a key contributing element to the provision of safe and efficient ATC services and as such, the proposed EU directive should include reference regarding the recognition of licences from third countries.
- The mutual recognition of European licence or certificate of competency can only be effective if the knowledge behind the licence is the same.

The general comment from the Project Team is that the proposed EU Directive should be built on ESARR 5 and on its guidance material. However, ESARR 5 in its current form cannot provide a solution on many outstanding questions in ATCO training, therefore the EU Directive must go beyond ESARR 5 to be able to eliminate these obstacles and to be able to give real value for the proposed European ATCO certificate.

In our opinion the introduction of a European ATCO licence is an important element of the Single European Sky programme. Definitely, it is a right step into the right direction. Based on interviews with training experts in different EU states we can conclude that any further progress in ATCO training harmonization is welcomed. However, it is very important that the right balance is kept between high-level principles and clearly defined performance objectives in every phase, be it initial, unit or continuation training.

6.1 Sub-conclusions and Details

ATCO training (be it initial or continuation) is a safety issue and the main question is not WHAT to do, but HOW to do it in order to cope with the future European environment?

Therefore, the initial proposal of the Project Team is to develop clear and commonly adopted objectives to ensure full harmonization of the knowledge required to obtain a candidate licence. Consequently, the candidate licence should be fully recognized in all EU Member States allowing an ATCO candidate to continue his/her ATCO education in other EU states if she/he wishes to do so.

Secondly, the introduction of a kind of complexity level based licence on the declared sector or runway capacity figures would be desirable. Today, or even after the implementation of ESARR 5, the licence does not give a clear indication about the practical skills of the holder. With the same ratings and endorsement, one might come from a very complex traffic environment, another from a low density unit. Obviously, they might be both excellent controllers, but the two persons would require different transition training in case of internal or external mobility.

Further study would be required to evaluate the advantages or disadvantages of the establishment of a kind of complexity criteria (maybe level 1, level 2 and level 3), which should then justify the necessary transition training period linked with each category.

It should be underlined that these complexity categories should strictly focus on the Unit complexity level and not on the controllers' capabilities.

7 ACRONYMS AND REFERENCES

7.1 Abbreviations and Acronyms

ACC	Area Control
ACP	Area Control Procedural
ACS	Area Control Surveillance
ADI	Aerodrome Control Instrument
ADS	Automatic Dependent Surveillance
ADV	Aerodrome Control Visual
AIP	Aeronautical Information Publication
AMC	Aeromedical Centre
AME	Approved Medical Examiner
APP	Approach Control Procedural
APS	Approach Control Surveillance
ATC	Air Traffic Control
ATCO	Air Traffic Control Officer
ATM	Air Traffic Management
ATS	Air Traffic Services
CAA	Civil Aviation Authority
EATCHIP	European Air Traffic Control Harmonisation and Integration Programme
EATMP	European Air traffic Management Programme
EC	European Commission
ECAC	European Civil Aviation Conference
ESARR	EUROCONTROL Safety Regulation Requirement
EU	European Union
IANS	Institute of Air Navigation Services
ICAO	International Civil Aviation Organization
JAR	Joint Airworthiness Requirements
OJT	On-the-Job Training
OJTI	On-the-Job Training Instructor
PAR	Precision Approach Radar
SRA	Surveillance Radar Approach
SRC	Safety Regulation Commission
SRU	Safety Regulation Unit
STD	Standard
TWR	Tower Control
UTP	Unit Training Plan
WP	Work Package

7.2 References

01	Guidelines for Common Core Content and Training Objectives for Air Traffic Controllers Training (Phase I: Revised); HRS/TSP-002-GUI-01, Edition 2.0, 6 July 2001
02	Guidelines for Common Core Content and Training Objectives for Air Traffic Controllers Training (Phase II); HUM.ET1.ST05.1000-GUI-02, Edition 1.0, 20 July 2000
03	ESARR5-ATM Services' Personnel, Edition 2.0, 11 April 2002
04	European Manual of Personnel Licensing-Air Traffic Controllers; HUM.ET1.ST08.10000-STD-01,

	Edition 1.0, 8 September 2000
05	ICAO Annex 1-Personnel Licensing; Ninth Edition, July 2001
06	EATMP Human Resources Team (1999). Air Traffic Controller Training at Operational Units. HUM.ET1.ST05.4000-GUI-01. Released Issue. Edition 2.0.
07	EATMP Human Resources Team (2000c) Requirements for European Class 3 Medical Certification of Air Traffic Controllers. HUM.ET1.ST08.10000-STD-02
08	Joint Aviation Authorities (JAA) (1997). Joint Aviation Requirements. Flight Crew Licensing (Medical). JAR-FCL3 5 (February).

ANNEX A

	Austria	Belgium	Denmark	Finland	France	Holland	Germany	Greece	Ireland	Italy	Spain	Sweden	UK	Portugal
Who is responsible for the provision of initial training?	ANSP	ANSP Other	ANSP CAA	ANSP	Other	ANSP	ANSP	CAA	Other	ANSP	Other	Other	ANSP Other	
Do you have a minimum duration of time for initial training?	No	No	No	Yes	Yes	No	No	Yes	No	Planned	Yes	Planned	No	
Do all training units have a unit training plan?	Yes	Yes	Yes	Planned	Planned	Yes	Planned	Yes	No	Yes	Yes Planned	Yes	Planned	
Does your designated authority issue OJTI endorsement?	No	Yes	Planned	Planned	Planned	Yes	Yes	Planned	Planned	Planned	N/A	Planned	Yes	
Are your OJT assessors specially trained?	Yes	No	Yes	Planned	Yes	Yes	Yes	Planned	Yes	No	N/A	Yes	Yes	
Do you have a minimum duration of time for OJT?	Yes	No	No	Yes	No	No	No	Yes	Yes	Planned	Yes	Planned	No	
Does your designated authority supervise the examinations in all training phases?	N/A	Initial OJT	OJT	ANSP does so	No	ANSP does so	No	Initial OJT	No	Under evaluation	Initial	Planned OJT	See comment	
Have you implemented unit competency schemes for ATCOs with regular intervals?	Planned	Yes	Planned	Yes	Yes	Yes Planned	Planned	Planned	Planned	Planned	N/A	Yes	Yes	

	Austria	Belgium	Denmark	Finland	France	Holland	Germany	Greece	Ireland	Italy	Spain	Sweden	UK	Portugal
If procedures to ensure ongoing competence of ATCOs are implemented are they subject to audit?	Planned	Internal External	Internal	Internal	Planned	Internal	N/A	No	Planned	Internal	Planned	External	Internal External	Internal
Do you accept a foreign ATC licence issued in other EU Member States?	No	Yes	Yes	Planned	No	No	Yes	Legal problems	Yes	Legal problems	No Legal Problems	No	No	
Do you accept Radio/Telephone Licence issued in another EU Member State?	No	Yes	N/A	Planned	No	No	Yes	Yes	No	No	No	Yes	No	
Do you accept medical validity status certified in other EU Member States?	No	Yes	No	Planned	No	No	No	No	No	Planned	No	Yes	No	
Are there language requirements?	English Local	English Local Other	English Local	English Local	English Local	English Local	English Local	English Local	English	English Local	English Local	English Local	English	
Has the Training Unit passed through an application procedure in order to be approved?	No	Planned	Yes	Yes	Yes	No	No	No	Yes	No	Planned	Yes	Yes	

	Austria	Belgium	Denmark	Finland	France	Holland	Germany	Greece	Ireland	Italy	Spain	Sweden	UK	Portugal
Has the ANSP Training Unit passed through an application procedure in order to be approved as a training unit?	No	Planned	Yes	Planned	No	No	No	No	Planned	No	No	Yes Planned	Planned	
Do you have an internal Quality Management System covering the Training Institute?	Yes	Yes	Yes	Planned	No	Yes	Yes	Planned	Planned	No	Planned	Yes	Yes	Planned
What is the legal status of air traffic controllers in your country?	Individual Contractor	State Employee	Civil Servant	Civil Servant	Civil Servant	Civil Servant	N/A	Civil Servant	State Employee	State Employee	Individual Contractor	Civil Servant	Individual Contractor Other	Civil Servant
Will the implementation of ESARR 5 cause a high degree of alteration on present licensing certification procedures?	Minor	Yes	Yes	Minor	Yes	Yes	Minor	Minor	Yes	Yes	Minor	Minor	Minor	