EUROPEAN ORGANISATION
FOR THE SAFETY OF AIR NAVIGATION

EUROCONTROL

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European Manual of Personnel Licensing - Air Traffic Controllers

Guidance on Implementation

Edition Number	**:**	**1.0**
Edition Date	**:**	**29.11.2001**
Status	**:**	**Released Issue**
Intended for	**:**	**EATMP Stakeholders**

EUROPEAN AIR TRAFFIC MANAGEMENT PROGRAMME

DOCUMENT CHARACTERISTICS

TITLE
European Manual of Personnel Licensing - Air Traffic Controllers **Guidance on Implementation**

	EATMP Infocentre Reference:	010813-1
Document Identifier	**Edition Number:**	1.0
HUM.ET1.ST08.10000-GUI-01	**Edition Date:**	29.11.2001

Abstract

This document is intended to assist those Air Traffic Control (ATC) Service Provision or Regulatory Administrations who have decided to implement the provisions of the 'European Manual of Personnel Licensing – Air Traffic Controllers' (EATMP, 2000a) in order to fulfil the requirements of the EUROCONTROL Safety Regulatory Requirement – ATM Services' Personnel (ESARR5) with regard to air traffic controllers (SRC, 2000).

Keywords

Air Traffic Controller	Licence	Validation
Rating	Endorsement	Competency

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STATUS, AUDIENCE AND ACCESSIBILITY					
Status		**Intended for**		**Accessible via**	
Working Draft	☐	General Public	☐	Intranet	☐
Draft	☐	EATMP Stakeholders	☑	Extranet	☐
Proposed Issue	☐	Restricted Audience	☐	Internet (www.eurocontrol.int)	☑
Released Issue	☑	*Printed & electronic copies of the document can be obtained from the EATMP Infocentre (see page iii)*			

ELECTRONIC SOURCE		
Path:	G:\Own_use\Delvrabl\Released\Licensing\Manual_Guidance	
Host System	**Software**	**Size**
Windows_NT	Microsoft Word 8.0b	246 Kb

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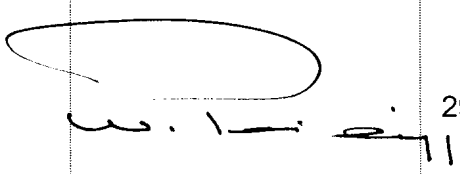
Senior Director Principal EATMP Directorate (SDE)	 W. PHILIPP	29.11.2001

DOCUMENT CHANGE RECORD

The following table records the complete history of the successive editions of the present document.

EDITION NUMBER	EDITION DATE	INFOCENTRE REFERENCE	REASON FOR CHANGE	PAGES AFFECTED
0.1	August 2000		Draft	All
1.0	29.11.2001	010813-1	Released Issue	All

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EXECUTIVE SUMMARY

This document is intended to provide advice and assistance to those responsible for implementing the Air Traffic Controller licensing scheme which is laid out in the document 'European Manual of Personnel Licensing – Air Traffic Controllers' (EATMP, 2000a).

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1. THE EUROCONTROL PROJECT TO DEVELOP A HARMONISED EUROPEAN ATC LICENCE

1.1 Introduction

The European Civil Aviation Conference (ECAC) is an inter-governmental organisation consisting of 38 States. Although it works in close liaison with the International Civil Aviation Organization (ICAO), it is an autonomous body in that it is neither a completely independent agency nor a body subordinate to ICAO. ECAC aims to promote the continued development of a safe, efficient and sustainable European air transport system. As a contribution to satisfying this aim ECAC has implemented a programme, which is designed to harmonise and integrate Air Traffic Control (ATC) systems and to increase capacity. This programme, the European Air Traffic Control Harmonisation and Integration Programme (EATCHIP), which was renamed the European Air Traffic Management Programme (EATMP) in 1999, is executed and managed on ECAC's behalf by EUROCONTROL. Added impetus to the former EATCHIP Work Programme (EWP), in respect of personnel licensing, was provided by European Union (EU) directives - in particular, that of the 'free movement of labour'. Reference to this directive was made in the document 'ECAC Strategy for the 1990's' (ECAC, 1990).

This project relates to Specialist Task 8 (ST08), 'Establish Standards for Personnel Licensing' of the former EATCHIP Human Resources Management Harmonisation Work Programme, specifically the Human Resources Domain (HUM) Business Plan, Executive Task 1 (ET1). At the Executive Task level the project deliverable is a European Manual of Personnel Licensing, with its critical success indicator being the approval of the 'European Manual of Personnel Licensing - Air Traffic Controllers' (EATMP, 2000a).

To provide an executive overview of the project the Domain Executive View Description, DEV4 Licensing, defines the objective of the project as 'development of harmonised legal and institutional procedures for the issue of controller certification in the form of licences and specifications of common criteria and documentation to promote consistency in the quality of service and safety throughout a harmonised Air Traffic Management (ATM) system'.

The purpose of Specialist Task 8 is defined as 'establish the precise criteria which have to be met for the issue of personal ATS operators licences', its objective being 'development and continuous assessment of common standards of qualification and competence'. The deliverables are 'documented common licensing requirements across the ECAC area' and 'European manual for licensing practice, including standards'. Its critical success indicator is 'acceptance of common licensing standards'.

The contract to complete ST08 on behalf of EUROCONTROL was awarded to the Safety Regulation Group (SRG) of the United Kingdom Civil Aviation Authority (UK CAA) on 17 January 1996.

Harmonisation of training requirements was undertaken by the Task Force Common Core Content (TF-CCC) set up in 1995 by the EATCHIP Human Resources Team via its Training Sub-Group (TSG). The TF-CCC has produced common syllabi for all rating training (EATMP, 2000b).

1.2 The Licensing Project

Although the United Kingdom was specifically contracted to complete ST08 the project was overseen in accordance with the EATCHIP (now EATMP) team structure in the same manner as other EATMP projects. The project to establish standards for personnel licensing was overseen by the EATMP Human Resources Team (HRT) consisting of staff from national administrations, the EUROCONTROL Agency, official international and representative bodies. Where the work to be completed cannot be undertaken by the Team, the management structure allows the Team to propose the formation of sub-groups. Where the work is too intensive and complex to be undertaken by the Team or the Sub-Group, a Task Force may be proposed to complete the task. For ST08 a Licensing Sub-Group was formed, but the UK CAA project team, in accordance with the contractual agreement, undertook the work normally addressed by a Task Force.

In the case of Specialist Task 8, the UK project relied on the cooperation of EUROCONTROL and a number of European States which provided representatives to work with the UK project team on a Licensing Work Group (LWG). This Group scrutinised and debated all aspects of the licensing project. The countries represented on the LWG are The Netherlands, France, Denmark, Ireland, Portugal and Germany. The Danish representative also represented the interests of the other Nordic States. In addition to the UK project team there was also a representative from the TF-CCC and from the International Federation of Air Traffic Controllers' Associations (IFATCA) as well as the EUROCONTROL Licensing Project Manager and latterly a representative from the EUROCONTROL Safety Regulation Unit (SRU).

In addition to membership of the LWG the majority of volunteer representatives from other States were also members of the Licensing Task Force (LTF) and a number were on the HRT. Because of this the LTF was disbanded and the LWG deliverables are directly considered by the HRT.

Project deliverables accepted by the LWG were published in the draft 'European Manual of Personnel Licensing - Air Traffic Controllers' (EATMP, 2000a) of which six editions were produced during the project, and forwarded to the HRT for further consideration. Work was approved or referred back to the LWG with comments for further consideration and development. Following endorsement by the HRT, each version of the draft Manual was distributed to the EATCHIP Liaison Officers or other nominated representative in each ECAC Member State. The Liaison Officers (now EATMP Focal Points) undertake consultation in their own States and direct their comments to the HRT.

A seventh and final edition of the document was produced as a proposed issue and this was agreed by the HRT for release in its April 2000 meeting. Other project deliverables were also subjected to approval of the HRT.

1.3 Representation and Consultation

Not all the Member States of ECAC are directly involved in the project by being represented on the LWG or the HRT; indeed this could not be the case on the LWG because of the number of States involved. In this respect they do not have a direct say in the development of the licensing standards and procedures. To overcome this, EUROCONTROL has protocols for consulting with States and providing information about the progress of the various work packages.

In respect of the European licensing project, provisions for consultation built into the project required the EATCHIP Liaison Officer in each of the ECAC States to be kept advised of all stages of the project and to be provided with the deliverables for comment. To enhance the consultation process, the representatives on the LWG also took on the responsibility for being the focal point for groups of States not represented on the LWG or the HRT. Additional briefings were given by the LWG in a number of States to which other adjacent States' representatives were invited. Representatives from most of the ECAC States have attended these briefings.

It was recognised that there could be a conflict of interest between the air traffic regulators and the service providers. In the LWG there is a balance of representation between providers and safety regulators.

1.4 ICAO Licensing Standards

ICAO publishes Standards and Recommended Practices for personnel licensing in Annex 1 to the Convention on International Civil Aviation (ICAO, 1988). In addition to general rules concerning licences, Annex 1 also specifically addresses the licensing of air traffic controllers. Member States of ICAO issuing air traffic controller licences in accordance with Annex 1 requirements are expected to advise ICAO of non-compliance with any of the standards. States are also requested to advise non-compliance with the recommended practices. Except for a few minor differences, all the ECAC States comply with the Annex 1 requirements for air traffic controller licensing.

Under the present standards States may either require air traffic controllers to hold air traffic controller licences or, where air traffic controllers are State employees meeting the same standards as licensed air traffic controllers, they may operate under individual State arrangements.

The Annex 1 general rules concerning licences accept the principle that a Contracting State may render valid a licence issued by another Contracting State by the issue of a suitable authorisation. It does not, however, require or

recommend to Contracting States that they accept the licensing qualifications of Air Traffic Services (ATS) personnel from other Contracting States.

1.5 Development of a Harmonised ATC Licence

The project team was mindful that any radical departure from the licensing standards already published in Annex 1 to the Convention on International Civil Aviation (ICAO, 1988) would be difficult to implement. The terminology involved in the provision of ATC services is well established and universally understood within the member States of ICAO. Major changes would have a considerable impact on the ATC service providers, established ATC licensing systems and the law under which these licences are implemented. Radical changes would also result in the licensing standards of member States of ECAC being significantly different from those of other member States of ICAO.

While being aware of these constraints, the project team is also conscious that the controller's task is changing. The increase in traffic levels has led to the introduction of new equipment and the use of more complex and specialist operating techniques. To satisfy the continuing development in the provision of air traffic control services, the project team saw the need to develop a more flexible licensing scheme. Such a scheme was also seen as a way of encouraging a modular approach to training, which could be directed to satisfying operational requirements for the use of more specialist operational techniques. It should also ensure that the harmonised ATC licence would meet licensing requirements of all the ECAC States.

The European Licensing Manual (EATMP, 2000a), which is the outcome of the project, provides a comprehensive system for the licensing and regulation of air traffic controllers. States participating in the harmonised European licence will be required to comply with all the licensing requirements listed in the Manual. However, compliance with the guidance in the Manual is not required but is recommended to enable a greater degree of harmonisation and understanding of the processes and procedures between participating States.

1.6 Training - Common Core Content

In addition to the development of common licensing standards, the EATMP requires the development of guidelines for the training of ATS staff in ECAC Member States. As part of this programme EUROCONTROL staff assisted by representatives from a number of ECAC Member States developed Common Core Content training syllabi for all the ATC licence rating disciplines (EATMP, 2000b). This task was conducted in parallel with the licensing project and a Member of the TF-CCC who attended LWG meetings integrated work between the projects. The syllabi are documented in the ICAO TRAINAIR format, providing objectives and stating the levels to which knowledge and skills are to be taught.

The 'European Manual of Personnel Licensing - Air Traffic Controllers' (EATMP, 2000a) has, as one of its Safety Regulatory Requirements -

Training, a requirement that initial courses of training must as a minimum satisfy the EATMP guidelines on Common Core Content (EATMP, 2000b).

Compliance with the licensing requirements in conjunction with meeting these training guidelines should bring identifiable benefits to both the service providers and airspace users. The provision of a standard minimum level of training and the introduction of phased unit training is aimed at improving the level of expertise of air traffic controllers and consequently the standard of air traffic service provided. Requirements for ongoing competence, refresher and emergency training should also contribute to developing and maintaining controllers' skills and improve the air traffic services provided.

1.7 Review of Medical Standards

Although not part of ST08 the LWG, supported by the HRT, considered it appropriate to review the ICAO Class 3 medical standards (see ICAO, 1988) that are applied to air traffic controllers and the Joint Authorities Requirements (JAR) FCL3 medical requirements (JAR, 1997). This task was undertaken by SRG, supported by an ATCO Medical Requirements Study Group (AMRSG) consisting of representatives from the LWG and medical experts from The Netherlands, France, EUROCONTROL, the United Kingdom and Portugal. The Study Group considered the appropriateness of all the existing medical standards in great detail and in the light of the latest medical thinking. Where agreement could not be obtained the AMRSG sought the advice of medical experts from outside the Group. The revised medical standards will form the requirements for a European Class 3 Medical Certification of Air Traffic Controllers. The European Licensing Manual (EATMP, 2000a) has, as one of its Safety Regulatory Requirements - Medical, a requirement that student air traffic controllers and air traffic controllers may not exercise the privileges of their licences unless they hold a European Class 3 Medical Certificate.

The document titled 'Requirements for European Class 3 Medical Certification of Air Traffic Controllers' (EATMP, 2000c) refers.

1.8 The Safety Regulation Commission and the Safety Regulation Unit

Since the project to develop a Harmonised European ATC licence was initiated, both the EUROCONTROL Safety Regulation Commission (SRC) and Safety Regulation Unit (SRU) were established under the revised EUROCONTROL Convention. The objective of the SRC is 'to provide advice to ensure through cooperation between States on safety regulation, consistent high levels of safety in ATM within the ECAC area'. The SRC is supported by the Safety Regulation Unit (SRU) which is responsible for the preparation of harmonised safety regulatory objectives and requirements for the ATM system.

The SRC/SRU has produced the EUROCONTROL Safety Regulatory Requirement for ATM services' personnel (ESARR5) (SRC, 2000) which sets out the general requirements for the designated authority, providers of

services and persons who undertake tasks in the provision or support of air traffic services which are safety-related. The Safety Regulatory Requirements relating to air traffic controllers set out the requirements to be applied by the designated authority which regulates air traffic control personnel. They also contain requirements applicable to the providers of air traffic services and individual licence holders.

The European Licensing Manual (EATMP, 2000a) is expected to be adopted as an Acceptable Means of Compliance (AMC) with ESARR5, which must be implemented by EUROCONTROL Member States by 9th November 2003.

2. IMPLEMENTATION OF THE HARMONISED EUROPEAN ATC LICENCE IN INDIVIDUAL STATES

2.1 Introduction

As ECAC States presently use the procedures in ICAO Annex 1, 'Personnel Licensing' (ICAO, 1988), on which to base the regulation of their air traffic controllers, the guidance on implementation expects that all States either already issue their air traffic controllers with ATC licences and/or certificates of competence, or that their air traffic controllers are State employees having the same qualifications as licensed air traffic controllers. It is therefore expected that States will have detailed records of their air traffic controllers, including their personal details and ATC qualifications and experience.

2.2 Regulation and Legislation

States implementing the harmonised European ATC licence will be required to comply with the ESARR 5 (SRC, 2000). This requires States to at least identify the ATS regulator and provider(s), if not to actually separate their functions, to ensure they both meet the requirements placed upon them. Legislative changes may be required to give the regulator the necessary powers to ensure compliance with ESARR 5.

States should also consider what legislative changes might be required to implement the requirements associated with the harmonised European ATC licence. In particular, legislation may be required to support its associated safety regulation procedures and the requirement to hold its particular ratings, rating endorsements and licence endorsements, as these differ from the existing ICAO ratings. Legislation may be required to enable States to accept the ATC licence qualifications of controllers issued by other States and to permit the State to conduct whatever tests and to require any training it considers necessary.

States' existing licensing and/or safety regulatory requirements may also have to be amended to satisfy the harmonised European ATC licence requirements. In developing these safety regulatory requirements, States should also consider conforming to the guidance associated with the licensing requirements, although they are not obliged to do so. Compliance with the guidance would lead to a greater degree of harmonisation and understanding between States of each other's licensing processes. This will be important to States when they are considering accepting the licence qualifications of a controller from another State, particularly the safety aspects associated with training and competency.

2.3 Regulation of Training

The training requirements associated with the harmonised ATC licence are designed to ensure that air traffic controllers have the appropriate knowledge and skills to undertake their controlling tasks. The designated authority has the responsibility for ensuring that initial training conducted at institutions and unit training meet the licensing requirements.

2.4 Initial Training

One of the requirements for the issue of a harmonised air traffic controller licence is that rating training courses must, as a minimum, meet EATMP guidelines for the Common Core Content (EATMP, 2000b).

The designated authority should require training institutions to demonstrate how their courses meet these training guidelines or, if they cannot, their plans to amend their training to meet the requirements.

It is accepted that it may not be possible for all States to meet the training requirements by November 2003 (the deadline for implementation of ESARR 5) and that, to avoid any interruption to the training of controllers, a transition period may be required. During such a period States should make available information about the compliance of their training courses with the EATMP guidelines to other States participating in the harmonised European ATC licence.

2.5 Unit Training

Units will be required to have unit training plans approved by the designated authority. EUROCONTROL provides advice on unit training in the EATMP document titled 'Air Traffic Controller Training at Operational Units' (EATMP, 1999). Although not a requirement, compliance with the guidance given in this document would ensure that unit training was conducted throughout the ECAC States to a satisfactory standard. To assist in the regulation of unit training plans, an example standard format can be found at Annex 1. The regulation of unit training will also include requiring providers to have procedures for ensuring the competence of On-the-Job Training Instructors (OJTIs).

It is recognised that existing controllers will have trained on initial courses, prior to the development of the Common Core Content, which do not, when viewed in retrospect, meet the new training requirements. While controllers will continue to gain knowledge and skill during their careers by updating themselves in new operating procedures, new aircraft types and performance, etc., this should not be regarded as a substitute for formal continuation training. Units should therefore develop appropriate continuation training to assist controllers in the development and maintenance of competence.

2.6 Medical Certification

States participating in the harmonised European ATC licence will be required to comply with the European ATCO medical requirements (see EATMP, 2000c) and ESARR 5 (SRC, 2000). A State's Aeromedical Section (AMS) will be responsible for implementing and applying the European Class 3 medical standards. The AMS may authorise an Aeromedical Centre (AMC) to carry out initial and renewal medical examinations and issue medical certificates associated with the harmonised ATC licence. It may also appoint Approved Medical Examiners (AMEs) to carry out renewal medical examinations and issue medical certificates.

In States that have not previously required air traffic controllers to undertake medical examinations to ICAO Class 3 standards (see ICAO, 1988), it is possible that some may fail to meet the European medical standards. It may not be practical to withdraw these controllers from operational duty, not only because of the time needed to recruit and train replacement controllers, but also because of the projected retirement rate and the general shortage of air traffic controllers.

Controllers who have a particular medical condition, which was acceptable under the ICAO Class 3 or domestic standards, but not under the European Class 3 medical standards (EATMP, 2000c), may be permitted to continue to provide an ATC service under existing State rules. However, if such a controller develops a new medical condition, which is disqualifying under the European Class 3 medical requirements, the existing medical certificate should be withdrawn or not reissued. Aeromedical and operational air traffic expertise should be sought to determine the risks of permitting controllers who do not meet the new European Class 3 medical requirements to continue to provide an operational air traffic control service.

It may be that some controllers will be found to have medical problems where there is a high probability that they could become suddenly incapacitated. It would be inappropriate to permit such controllers to continue to provide an air traffic control service. From the time a State implements the harmonised ATC licence, all applicants for student air traffic controller or air traffic controller licences must hold a current European Class 3 medical certificate.

2.7 Licence Administration and Institutional Arrangements

It is important that States participating in the harmonised European ATC licence are confident that other participating States are applying the same licensing standards by issuing licences in accordance with the licensing requirements. States should ensure that applicants fully meet the criteria for the issue of licences and that the processes and procedures they undertake to obtain a licence, including, for example, initial rating and unit training, fully satisfy the licensing requirements.

The designated authority should review its arrangements for the regulation of training institutions and ATC units. It must ensure that its own procedures will

meet its obligations under ESARR 5 (SRC, 2000). It must also ensure that the providers of air traffic services have the necessary procedures in place to meet their obligations under these requirements.

It would be expected that the provider's safety management systems ensure that all of its units have common internal procedures. However, the designated authority may still need to audit or monitor the air traffic services provided to ensure consistency of standard. Where there are a number of independent ATS providers, the designated authority may have to impose common internal procedures and will almost certainly have an increased role in ensuring a consistent standard of air traffic service across the units.

Where a designated authority will have to increase regulation to meet the requirements of the harmonised ATC licence, it may wish to consider at an early stage who will bear the cost of any additional regulation and who will be responsible for implementing the licensing requirements. The regulatory burden on service providers may be eased by permitting units to satisfy particular regulatory requirements by internal procedures, on condition that they can demonstrate that these are robust and will achieve the same aims as external regulation.

2.8 Awareness

Consideration should be given to documentation required to ensure that providers of air traffic services and individual licence holders are aware of the processes and procedures by which the designated authority will require them to satisfy the European ATC Licence requirements. Such information should be made available to other ECAC States that participate in the harmonised European ATC Licence.

2.9 Database

A licensing database has been developed to enable designated licensing authorities to maintain licensing records and to print licences. It has been specifically designed for use with the guidance on administration procedures and the proposed licence pages. The database will be available from EUROCONTROL.

The transfer of data from the previous record keeping system should be comprehensive, with the controllers' current and previously held ATC qualifications being recorded. Where possible, previously held ratings should be converted to the new licensing format and entered on the database.

2.10 Example European Net Diagram

An example of a European net diagram listing the processes that will need to be considered for the introduction of the European licence is at Annex 2.

2.11 Example Implementation Process

An example of the implementation process being adopted in the United Kingdom is at Annex 3.

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3. CONVERTING EXISTING LICENCE/CERTIFICATE OR STATE ATC QUALIFICATIONS TO THE EUROPEAN LICENCE FORMAT

3.1 Introduction

The ratings and rating endorsements developed for the harmonised European ATC licence can be directly substituted for the air traffic control licence ratings contained within ICAO Annex 1, 'Personnel Licensing' (ICAO, 1988). Although the names of the ratings have changed they still relate to the provision of Aerodrome Control, Approach Control and Area Control.

The rating endorsements associated with the European ATC licence ratings have been introduced to recognise that, within the ratings, there are additional specialist disciplines that did not exist when the ICAO ATC licence requirements were first introduced and to indicate the type of equipment used to support the service provided. These additional sets of skills may require specialist training and should be viewed as separate entities within a rating when determining a controller's competence. The addition of rating endorsements has also enabled the ratings to be disassociated from the type of equipment used. An example of this is the ICAO Approach Radar rating, which in the European ATC licence becomes the Approach Surveillance rating with a Radar endorsement. This disassociation of the rating from the equipment enables the use of other surveillance systems to be integrated into the European ATC licence qualifications. The LWG selected Automatic Dependent Surveillance (ADS) for an additional endorsement, as it is the most likely next generation surveillance system. When other surveillance systems are developed they can also be recognised by an endorsement to a surveillance rating.

3.2 Transfer of Existing ATC Qualifications to the European Licence Format

The harmonised European ATC licence has a field for recording the rating and rating endorsement disciplines in which a controller has previously held a valid rating. This was introduced to enable designated authorities to determine the previous experience of controllers who hold ATC licences issued by other States that participate in the harmonised European ATC licence. When transferring equivalent ratings from a controller's existing licence to the European format, previously held valid ratings should be indicated.

3.3 Unit Endorsements

Unit endorsements detail the sectors or the operational positions at ATC units at which controllers are competent to provide air traffic control services.

Area Control Centre controllers may be competent on a number of sectors, the full designation of which would not fit on the licence document. It is therefore appropriate that units use an abbreviation/code for designating sectors, or a collective abbreviation/code where controllers are required to be competent on a group of sectors.

If a State has a particular requirement for the inclusion on the licence of the individual types of surveillance equipment used to provide the air traffic services on each individual sector this could take up a considerable amount of space on the licence. Therefore, it may be more appropriate, particularly where composite radar information is used, to have an abbreviation for the radar system as a whole. The details of the individual radar's, their location, coverage and the systems used to matrix the radars should be available in other required documentation.

Endorsements at aerodromes will use the three letter abbreviations indicated on the ATC licence, for example 'GMC' for 'Ground Movement Control'. Where positions are subdivided during periods of high traffic loading it may be appropriate to indicate individual operational positions.

3.4 State Rating Endorsements

States may have a requirement for additional national rating endorsements for particular types of air traffic control services, which lie outside the scope of the harmonised European ATC Licence.

3.5 Equivalent ICAO Qualifications

Included in the following pages are tables indicating the ratings associated with the ICAO ATC licence procedures and the equivalent European licence ratings and endorsements.

3.6 Licence Endorsements

To recognise the specialist skills, knowledge and successful qualification obtained by an On-the-Job Training Instructor (OJTI) a licence endorsement has been created. This endorsement will be validated in operational positions and/or sectors as required and recorded in the current validation section of the licence.

AERODROME CONTROL

Type of Unit and Controller Function	Existing Rating	Harmonised European Rating	Rating Endorsement
Aerodrome without instrument approach or departure procedures or an associated approach control service	Aerodrome Control	Aerodrome Control Visual (ADV)	If required, State-specific only
Aerodrome with instrument approach and departure procedures and an associated approach control service	Aerodrome Control	Aerodrome Control Instrument (ADI)	If required, State-specific only
Controller provides an aerodrome control service at a unit where aerodrome control is not differentiated into Ground Movement Control (GMC) and Air Control (AIR)	Aerodrome Control	Aerodrome Control Instrument (ADI)	Tower Control (TWR)
Controller provides Ground Movement Control (GMC) only	None	Aerodrome Control Instrument (ADI)	Ground Movement Control (GMC)
Controller with Ground Movement Control (GMC) or Tower (TWR) Control rating endorsements uses Aerodrome Surface Movement and Guidance systems (GMS)	Aerodrome Control	Aerodrome Control Instrument (ADI)	Ground Movement Surveillance Control (TWR or GMC + GMS)
Controller provides Air Control (AIR) only	Aerodrome Control	Aerodrome Control Instrument (ADI)	Air Control (AIR)
Controller with Air Control (AIR) or Tower Control (TWR) rating endorsement uses surveillance radar (RAD) in the provision of an aerodrome control service	Aerodrome Control	Aerodrome Control Instrument (ADI)	Radar (TWR or AIR + RAD)

APPROACH CONTROL

Type of Unit and controller function	Existing Rating	Harmonised European Rating	Rating Endorsement
Approach control unit established at an aerodrome or area control centre. Controller provides an approach control service without the use of any surveillance equipment	Approach Control	Approach Control Procedural (APP)	If required, State specific only

Approach Control Surveillance

Type of Unit and Controller Function	Existing Rating	Harmonised European Rating	Rating Endorsement
Approach control unit established at an aerodrome providing an approach control service with the use of surveillance equipment	Approach Radar Control	Approach Control Surveillance (APS)	If required, State specific only
The surveillance equipment is radar	Approach Radar Control	Approach Control Surveillance (APS)	Radar (RAD)
The surveillance radar is used to provide Surveillance Radar Approaches (SRAs)	Approach Radar Control	Approach Control Surveillance (APS)	Surveillance Radar Approach (SRA)
The controller provides Ground Controlled Approaches using Precision Approach Radar (PAR)	Precision Approach Radar	Approach Control Surveillance (APS)	Precision Approach Radar (PAR)
The surveillance equipment is Automatic Dependent Surveillance (ADS)	None	Approach Control Surveillance (APS)	Automatic Dependent Surveillance (ADS)
The controller provides a service in Terminal Control Airspace and associated adjacent sectors as designated by the State, with the RAD or ADS endorsement.	Approach Radar Control	Approach Control Surveillance (APS)	Terminal Control (TCL)

AREA CONTROL

Type of Unit and Controller Function	Existing Rating	Harmonised European Rating	Rating Endorsement
An area control service is provided from an Area Control Centre without the use of any surveillance equipment.	Area Control	Area Control Procedural (ACP)	If required, State specific only

Area Control Surveillance

Type of Unit and Controller Function	Existing Rating	Harmonised European Rating	Rating Endorsement
An area control service is provided from an area control centre with the aid of surveillance equipment	Area Radar Control	Area Control Surveillance (ACS)	If required, State specific only
The surveillance equipment used is radar	Area Radar Control	Area Control Surveillance (ACS)	Radar (RAD)
The surveillance equipment used is Automatic Dependent Surveillance (ADS)	None	Area Control Surveillance (ACS)	Automatic Dependent Surveillance (ADS)
The controller provides a service in Terminal Control Airspace and associated adjacent sectors as designated by the State, with the RAD or ADS endorsement	Area Radar Control	Area Control Surveillance (ACS)	Terminal Control (TCL)

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4. HARMONISED LICENSING ISSUES

4.1 Harmonisation Options

One of the Specialist Task 08 deliverables was a task analysis of harmonisation options for implementing the European licence and the risks involved. It has been decided that the most satisfactory strategy would seem to be one where all States were able to introduce the harmonised ATC licensing scheme by the end of 2003.

However, accepting a controller from another State directly into On-the-Job Training (OJT), who is not familiar with the receiving State's national ATC operating procedures or advanced controlling techniques, could lead to a situation where the trainee made a controlling error. Therefore, it would be necessary to put in place safeguards to enable States to test controllers from other member States to a level that would satisfy their own standards of operation.

4.2 Other Considerations

Given that member States are unlikely to have detailed information on the levels of competence, knowledge and skill of controllers from other States, there will need to be some degree of exchange of information on how far a particular State has implemented the harmonised ATC licence scheme.

Critical areas are:

- Conversion of existing ATC qualifications of licensed or State employed air traffic controllers to the new ratings and rating endorsements;
- Medical certification;
- Safety regulatory procedures including:
  - initial training that complies with the Common Core Content training standards,
  - competence assessment,
  - unit training plans that include transition, pre-OJT and OJT.

Within ECAC a number of States with highly developed ATM systems will already satisfy the requirements published in the 'Manual of Personnel Licensing - Air Traffic Controllers' (EATMP, 2000a). In other States meeting the requirements will require more fundamental changes.

During the lifetime of the project to produce a harmonised ATC licence it became apparent that, although States operate largely in accordance with ICAO Standards and Recommended Practices, their ATC operations and

regulation vary considerably. There is not sufficient commonality to set specific requirements for States to accept the harmonised ATC licence qualifications of controllers from other States. Adjacent States and States that are grouped together by Convention, such as EUROCONTROL, may have sufficient information about the ATC operations in other States to accept their harmonised ATC licence qualifications with few or no limitations. However, some States may have little information about the ATC operations in other States and must qualify their acceptance of the harmonised ATC licence qualifications from those States.

The more information that States have about the ATC operations and regulation of other States, the easier it will be to determine what level of acceptance is appropriate. It is therefore proposed that States should be required to inform EUROCONTROL when they have completed stages towards meeting the harmonised European ATC licence requirements and, when requested, provide other States with this information. The major milestones to be addressed are listed in first paragraph of this sub-chapter. A process to monitor progress of States towards harmonisation will need to be developed.

Because of the diversity of ATC operations among the Member States of ECAC, it is proposed that States should not be constrained by set processes and procedures for the acceptance of holders of harmonised ATC licences or State ATC qualifications from other States. States must be free to make their own assessments of the suitability of controllers from other States to work in their own ATC environment.

The provision of information by the States about their progress in implementing the harmonised ATC licence requirements and information supplied on individual controllers should give States a good indication of the level of knowledge and skills they can expect of migrant controllers from other States. States would be expected to use the minimum testing and retraining consistent with assuring that controllers from other States have the necessary experience, knowledge and skills to provide a safe ATC service in their States.

ANNEX 1: GENERIC UNIT TRAINING PLAN

Unit Name: _____ Issue Number: _____ Date: __ / __ / __

1. Introduction

PURPOSE

The purpose of the Unit Training Plan (UTP) is to provide structured objective-based training so that a controller may achieve and maintain validation standard. The UTP should develop the generic training provided by an initial training centre (Institute or college) into the specific requirements of an individual unit.

INTENT

The plan sets targets for the trainee based upon the expectations of the unit. The rate at which a trainee develops is determined by many factors including the complexity of the unit, the background or experience of the trainee and his/her ability to absorb information and develop skills. The plan assumes an average trainee recently qualified from a training institute but it has an element of flexibility built in to allow for different rates of learning. None the less all trainees and trainers should be aware of the targets and expectations of the training system.

DEVELOPMENT

The UTP is designed by analysing the tasks of the controller on each operational position at the unit. This serves to ensure that all relevant knowledge and skills are encountered, rather than leaving it to chance, and that at the point of validation it can be demonstrated that there have been no gaps in the training. This information can be used to support the validation process when the examiner at best can only sample the knowledge and skill base in a direct manner. The examiner is now able to refer to the training assessments to support the decision to award a validation.

RECORDS

The plan also details the method of recording the training given on a day-to-day basis; this information can be used to ensure that all applicable knowledge and skill requirements have been adequately covered and that no gaps in the training given exist.

ASSESSMENT

Assessment of the trainee's development is an integral part of the UTP. The method of assessing and the assessment regime are detailed in it. This effectively sets the targets for the trainee and trainer alike.

LAYOUT OF THIS DOCUMENT

This document sets out in several sections the requirements of a UTP with guidance and examples.

2. Personnel Responsibilities

REQUIREMENT

A list of all personnel, including management, with responsibility for any part of the UTP together with a statement of their responsibilities, specifically related to the plan.

GUIDANCE

The list of personnel should begin with the person in charge of the ATS unit with detail of his specific responsibilities for the UTP, this will probably consist of selecting the training personnel and interviewing trainees specifically those who are not achieving the required standards and are likely to or are in the process of having their training terminated.

The list should then progress through the training manager, OJTIs and persons involved in the assessment task. It is also appropriate to include the responsibilities of persons involved in determining competence (validation examiners) and continuing competence (local competence examiners) where these staff are locally based. It would not be appropriate to include the responsibilities of nationally appointed examiners working for the regulatory authority in this document.

Example:

Training Manager

Responsible for:

- reviewing and amending the unit training plan to reflect current techniques and requirements;
- allocating training responsibilities to OJTIs;
- performing local training of OJTIs and unit assessors;
- assessing the competence of OJTIs and unit assessors.

3. Competence Training

REQUIREMENT

Details of:

a) any transitional and pre-OJT that the trainee will undertaken;

b) the topics and sub-topics, taken from the requirements for air traffic controllers, in which competence will have been achieved when the training plan has been successfully achieved showing the levels at which the elements will be assessed;

c) the training objectives for each level showing the topic they aim to achieve.

GUIDANCE

Transitional Training

This phase of training follows rating training during which site-specific theoretical knowledge and understanding will be transferred to the trainee using a variety of methods and during which skills may be developed through the use of site-specific simulators.

Transitional training must be delivered in a manner compatible with the complexity of the air traffic control unit. It may be self-study of published documentation such as the Aeronautical Information Publication (AIP) and local operating instructions to formal lessons conducted in a classroom. Where simulation is deemed to be necessary as part of this training low fidelity part task training devices will usually suffice. The syllabus for transitional training may be derived from the Common Core Content reworded to become site-specific.

Pre- On-the-Job Training (Pre-OJT)

This phase of locally based training makes extensive use of simulation using site-specific facilities to enhance the development of previously acquired routines and abilities to an exceptionally high level of achievement.

It is appropriate to those busy units where there are insufficient light traffic periods to allow early stages of practical training to be safely and efficiently conducted. Simulators used for this type of training will therefore be of the high fidelity type that accurately reproduce the look and feel of real life situations in all respects. Not only must the visual representation be accurate but also the data displays, switches and controls must accurately reproduce the working environment.

On-the-Job Training (OJT)

Training where previously acquired skills and routines are further developed and consolidated under the supervision of a qualified OJTI in a live traffic situation.

Topics and Sub-Topics

The purpose of this listing is to show that on completion of the UTP the trainee has met the requirements developed by the EATMP Licensing Work Group and approved by the Human Resources Team (HRT) for issuing an ATC licence under the harmonisation scheme.

Example:

Using the requirements for the Aerodrome Control Visual (ADV) rating.

UNIT ELEMENT	DESCRIPTION	ASSESSED AT LEVEL		
		50	100	150
A.1	**Check and operate communications equipment**			
A1.1	Establish and monitor the communications equipment serviceability	X	X	X
A1.2	Use the communications equipment	X	X	X
A.2	**Communicate from a visual control room**			
A2.1	Use standard phraseology applicable to aerodrome control	X	X	X
B1	**Correlate flight data into appropriate proforma for display**			
B1.1	Obtain flight data information	X	X	X
B1.2	Insert flight data into the appropriate proforma	X	X	X
B.2	**Maintain a representative flight data display for aerodrome control**			
B2.1	Correlate flight data into a display for aerodrome control	X	X	X
B2.2	Update the aerodrome control flight data display	X	X	X
C.1	**Obtain interpret and disseminate meteorological information**			
C1.1	Obtain meteorological information	X	X	X
C1.2	Interpret meteorological information		X	X
C1.3	Disseminate meteorological information		X	X
C.2	**Obtain interpret and disseminate aeronautical information**			
C2.1	Obtain aeronautical information	X	X	X
C2.2	Interpret aeronautical information		X	X
C2.3	Disseminate aeronautical information		X	X
D.1	**Select the runway in use and appropriate visual aids**			
D1.1	Select the runway in use	X	X	X
D1.2	Operate aerodrome lighting		X	X

UNIT ELEMENT	DESCRIPTION	ASSESSED AT LEVEL		
		50	100	150
G.1	**Manage flights operating in the vicinity of the aerodrome**			
G1.1	Manage flights operating under the visual flight rules.	X	X	X
G1.2	Manage flights operating under the instrument flight rules		X	X
G.2	**Manage aerodrome surface movements**			
G2.1	Control aircraft on the manoeuvring area and aprons and vehicles and personnel on the manoeuvring area	X	X	X
G.9	**Effect liaison with other agencies**			
G9.1	Liaise with non ATC agencies		X	X
G9.2	Liaise with the safety services		X	X
G10	**Handle diversions**			
G10.1	Handle diversions			X
G.11	**Work as a team member for the aerodrome control operational position**			
G11.1	Accept responsibility for the operational position		X	X
G11.2	Monitor performance whilst responsible for the operational position			X
G11.3	Transfer responsibility for the operational position		X	X
H.1	**Manage developed emergencies from the aerodrome control unit**			
H1.1	Manage radio failures			X
H1.2	Manage situations arising from unlawful interference			X
H1.3	Manage Aircraft Emergencies			X
H1.4	Provide Alerting Service		X	X
H.2	**Manage domestic contingencies in an aerodrome visual control room**			
H2.1	Safely evacuate the control room			X

It is not necessary to assess all sub-topics at all levels, they should be introduced as and when the unit expectation requires. One introduced however the sub-topic should continue to be assessed at all further levels. Where certain items, such as low visibility operations or surveillance radar approaches, have not been assessed during the period it should be noted on the assessment report but this does not preclude continuation on the plan as long as the sub-topic is assessed at some time before the unit training plan is completed.

In the example in topic G.11, 'Work as a team member …' it has been assumed that the OJTI will perform the hand-over and take-over for the first 50 hours of training, thereafter the trainee will perform this task under supervision and will be assessed at the 100 and 150 levels. After level 100 the trainee will additionally be expected to analyse the workload he is experiencing and his ability to sustain it, taking action, for instance to seek assistance or support, when appropriate.

The breakdown in the example is only intended as a guide to the layout; each unit must decide where and when the training emphasis is placed.

Training Objectives

The training objectives are listed in the Common Core Content document (EATMP, 2000b) as topics and sub-topics; they are not identical to the topics and sub-topics in the Requirements.

The Common Core goes beyond the requirements in that it also specifies the foundation knowledge that underpins the ability to achieve the requirements specifically in terms of understanding of such subjects as Meteorology, Navigation and International Aviation Law, its primary use is in institutional training. The statements in the common core are generic and refer to all units. Where Unit Training Plans (UTPs) require to use items from the Common Core, the statements should be unit specific, for example where the Common Core specifies that a trainee should 'Identify the equipment to be found specifically in a Visual Control Room (VCR)' would need a list of the specific equipment at the unit. Ideally UTPs should refer to the Requirements.

At all but the final assessment the objectives may qualify the level of OJTI assistance that can be accepted, the traffic complexity appropriate for the level and whether documentation may be referred to. For the final assessment the trainee will be required to demonstrate achievement without OJTI assistance at all normal traffic levels. Even then reference to documentation may be appropriate; for instance, it may be necessary for the trainee to interpret a transition level table but not to calculate the transition level mathematically. The qualifying statement may be general to the whole level assessment or may be specific to the objective.

Example:

Using the requirements for the Aerodrome Control Visual (ADV) rating

AERODROME CONTROL VISUAL PERFORMANCE LEVEL 50

At the 50 level check without reference to documents, in light traffic, and with limited OJTI help the trainee will be able to:

Objective 1: Establish and monitor the communications equipment serviceability

Visual and/or aural indications are checked whilst making and receiving transmissions for indications of normal operation.
Documentation confirming equipment status is checked.
Malfunctions and defects are recorded and reported to the appropriate authority according to standing procedures.

Aerodrome Control Visual references

Topics	A1	Check and operate communications equipment.
Sub-topics	A1.1	Establish and monitor the communications equipment serviceability.

Objective 2: Use the communications equipment

The readability of transmissions is assessed.
Standard speech technique is adhered to.
The appropriate frequency is selected and used.
Transmit and intercom switches are used in accordance with standard procedures.
The appropriate telephone is used.
Ancillary telephone equipment is used in accordance with standard procedures.

Aerodrome Control Visual references

Topics	A1	Check and operate communications equipment.
Sub-topics	A1.2	Use the communications equipment.

Objective 3 Use standard phraseology applicable to aerodrome control

Standard phraseology is employed in all communications.
Composition of messages is concise and unambiguous.
Station identity is used correctly.
Acknowledgements and read-backs are obtained and verified when required.
Abbreviated phraseology is used when appropriate.

Aerodrome Control Visual references

Topics	A2	Communicate from a visual control room.
Sub-topics	A2.1	Use standard phraseology applicable to aerodrome control.

4. Emergency Training

REQUIREMENT

Details of:

a) site-specific emergency training given to trainees before validation;
b) site-specific emergency training given routinely after validation.

GUIDANCE

Emergency training falls into two areas.

The first is to prepare trainees, prior to validation, in the procedures used in the event of an emergency situation developing both to aircraft and within the control unit itself which may affect the normal operation of the unit or even require its' evacuation.

Trainees will require full familiarisation with the level of safety service cover, additional emergency services available, methods of call out and classification of emergencies.

Full training will also have to be given on such topics as the handling of aircraft subject to hijacking and the action to be taken in the event of a bomb threat. Wherever possible simulation should be used for this training. It is recommended that trainees participate in at least one actual or practice call out during their competence training. Reference to the requirements for air traffic controllers shows the areas where training is required prior to validation, topics H.1 and H.2, liaison with the safety services is in topic G.9.

Example:

Taken from the Aerodrome Control Visual Rating

Objective 1 Safely evacuate the control room
Available information is evaluated to determine the need to evacuate the control room.
Traffic is disposed of in accordance with laid down procedures.
Evacuation is conducted in accordance with laid down procedures.

Aerodrome Control Visual references.

Topics	H.2	Manage domestic contingencies in an aerodrome visual control room.
Sub-topics	H2.1	Safely evacuate the control room.

The second area of emergency training consists of routine refresher training to enable qualified controllers to respond to unusual or emergency situations in a competent and professional manner. It is recognised that emergencies are becoming less common and that controllers will therefore be less practised in handling them, it is for this reason that refresher training is undertaken to enable controllers to react appropriately under unusual circumstances.

It may be felt necessary to practice those items already covered for competence training refresher training should widen the scope to cover other contingencies that are considered pertinent to the unit. It may be advantageous to practice situations that have occurred elsewhere so that the effect of such incidents can be experienced. A statement detailing occurrences routinely included in refresher training and the system by which any additional scenarios are evaluated for inclusion should be made.

Refresher training should not be considered a pass/fail item however controllers' competence may be called into question if he fails to achieve the Requirements for air traffic controllers during the training.

5. Assessment Requirements

REQUIREMENT

Details of:

a) the occasions upon which trainees will be assessed;
b) the methods by which the assessments will be carried out.

GUIDANCE

Trainees should be assessed at least at the end of transition training and where applicable the end of pre-OJT. Failure to reach a satisfactory standard should preclude progression to the next stage of training.

Trainees should be assessed at regular intervals during OJT. This section should define the process followed where a trainee is shown to be making less that satisfactory progress particularly if remedial training is required.

Assessments may be carried out, by a suitably trained OJTI, in a number of ways.

Practical skills by observation of practical work and reference to training reports for supporting evidence supplementary oral questioning should be used to test understanding of the applicable techniques and rules governing them.

Understanding can be tested orally using scenarios. Knowledge can also be tested orally although more difficult to administer than written questioning it is more flexible. Units should beware of presenting the trainee with an overpowering oral board, an assessment is not an examination it is a guide to training requirements.

Tabletop exercises can be used to test in a practical sense scenarios that units are unable to simulate where time constraints are not a major consideration.

6. Training Records

REQUIREMENT

Records of transitional, pre-OJT and OJT given and any assessments shall be to a common format.

GUIDANCE

Transitional training is generally classroom conducted, but may be self-study. The success of this training should be assessed before progression to the next phase of training. A report of the assessment should be included in the trainee's records.

Pre-OJT where this is carried out, which involves high-fidelity simulation, should also be assessed and reported before commencing OJT.

OJTIs should complete training reports on a regular, preferably daily, basis. A full formative report is usually given verbally as feedback to the trainee. However, it is advantageous to include a précis of the feedback as part of the written report. A summative report eases the assessment process and gives a rapid indication of progress in line with the training plan. Reports and assessments should be made using the training plan objectives as a standard.

Example:

AERODROME CONTROL VISUAL TRAINING REPORT

Name	Date
Training time this session	Total training time

Traffic Heavy Medium Light

Objective 1: Establish and monitor the communications equipment serviceability	Summative Summary
Performance Objectives Visual and/or aural indications are checked whilst making and receiving transmissions for indications of normal operation. Documentation confirming equipment status is checked. Malfunctions and defects are recorded and reported to the appropriate authority according to standing procedures.	
Formative Summary	

Each training objective is reported upon using the same phrases used for the appropriate performance level, in the example they will remain the same throughout the plan.

Ultimately, the same basic layout can be used for the level assessment easing the correlation between the two.

AERODROME CONTROL VISUAL TRAINING ASSESSMENT

Level 50

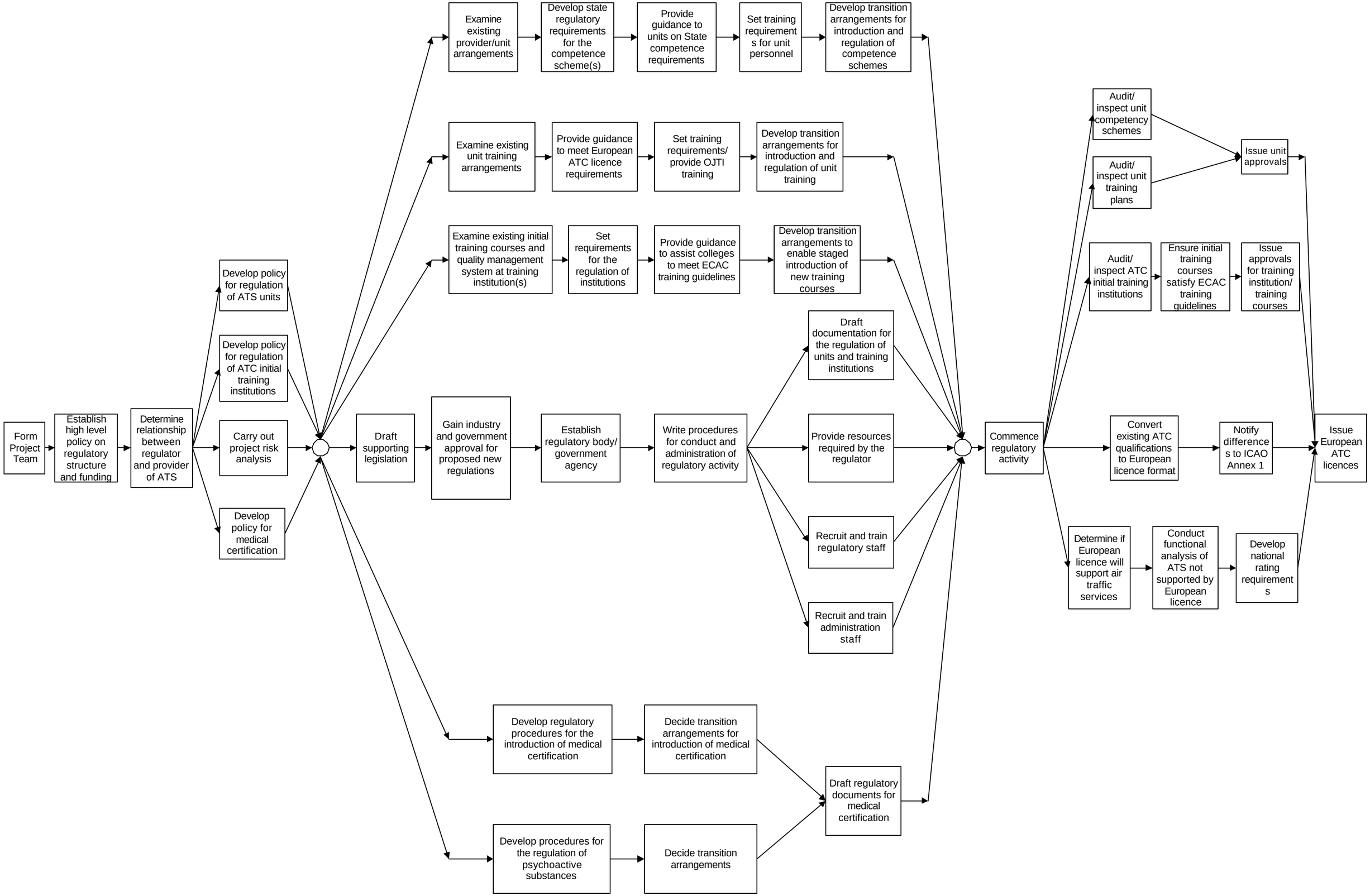
Name	Date
Training time this session	Total training time

Traffic Heavy Medium Light

Objective 1: Establish and monitor the communications equipment serviceability	**Grading**
Performance Objectives	
Visual and/or aural indications are checked whilst making and receiving transmissions for indications of normal operation.	
Documentation confirming equipment status is checked.	
Malfunctions and defects are recorded and reported to the appropriate authority according to standing procedures.	
Assessor's Comment	

The report will need to show whether the trainee's performance is satisfactory or improvement is needed. Units may wish to include a more detailed breakdown to indicate whether the trainee is just making satisfactory progress, is considerably ahead of expectation or falling well behind. Whatever method is used it should be self-evident from the assessment form what the target is.

ANNEX 2: DRAFT EUROPEAN ATC LICENSING PLAN


Form Project Team
Establish high level policy on regulatory structure and funding
Determine relationship between regulator and provider of ATS
Develop policy for regulation of ATS units
Develop policy for regulation of ATC initial training institutions
Carry out project risk analysis
Develop policy for medical certification
Examine existing provider/unit arrangements
Develop state regulatory requirements for the competence scheme(s)
Provide guidance to units on State competence requirements
Set training requirements for unit personnel
Develop transition arrangements for introduction and regulation of competence schemes
Examine existing unit training arrangements
Provide guidance to meet European ATC licence requirements
Set training requirements/ provide OJTI training
Develop transition arrangements for introduction and regulation of unit training
Examine existing initial training courses and quality management system at training institution(s)
Set requirements for the regulation of institutions
Provide guidance to assist colleges to meet ECAC training guidelines
Develop transition arrangements to enable staged introduction of new training courses
Develop regulatory procedures for the introduction of medical certification
Develop procedures for the regulation of psychoactive substances
Decide transition arrangements for introduction of medical certification
Decide transition arrangements
Draft supporting legislation
Gain industry and government approval for proposed new regulations
Establish regulatory body/ government agency
Write procedures for conduct and administration of regulatory activity
Draft documentation for the regulation of units and training institutions
Provide resources required by the regulator
Recruit and train regulatory staff
Recruit and train administration staff
Draft regulatory documents for medical certification
Commence regulatory activity
Audit/ inspect unit competency schemes
Audit/ inspect unit training plans
Issue unit approvals
Audit/ inspect ATC initial training institutions
Ensure initial training courses satisfy ECAC training guidelines
Issue approvals for training institution/ training courses
Convert existing ATC qualifications to European licence format
Notify differences to ICAO Annex 1
Issue European ATC licences
Determine if European licence will support air traffic services
Conduct functional analysis of ATS not supported by European licence
Develop national rating requirements

ANNEX 3: ATC REGULATION AND LICENSING IN THE UNITED KINGDOM

This Annex describes the current situation on regulation and the planned scheme for implementation of the European ATC licence in the United Kingdom. It is given as an example situation which may be of assistance to those responsible for implementation in a less advanced regulatory environment.

1. Regulatory Methods in the UK

In the United Kingdom air traffic services are provided by a number of commercial organisations, with the State Civil Aviation Authority (CAA) as the independent safety regulator. Although its regulation of personnel licensing is the same for all controllers, the way in which the safety regulatory procedures associated with the licence are regulated is different.

The area control centres and some of the major airports in the UK have elected to meet the ATC licensing and safety regulatory requirements via a safety case regime. This requires units to produce, develop and evolve Safety Cases that provide adequate arguments to demonstrate why the air traffic control service provided is safe, and to develop associated Safety Management and General (Quality) Management Systems.

In the UK a Safety Case is defined as 'A document which clearly and comprehensively presents sufficient arguments and evidence that a Facility, Facilities or Organisation are adequately safe in Air Traffic Services respects'. Under the Safety Case regime the providers of air traffic services take the basic safety regulatory requirements and demonstrate how these requirements and their own requirements are met. The existing UK licensing requirements are very prescriptive and safety cases will simply show compliance with these requirements. For example, certification of competence examination boards, by which the student/trainee controllers gain specific unit endorsements and make their ratings valid, have to be conducted in accordance with the licensing procedures by controllers having specific qualifications. In this case there is no scope for a safety case to demonstrate another adequate method of determining competence. However, with the introduction of the European harmonised ATC licence requirements, it may be appropriate to permit units operating under safety cases to offer alternative methods of determining competency.

Following initial acceptance of the appropriateness of the safety case by the regulator, ongoing regulation is by auditing. This is a sampling process in which not all aspects of a unit’s operations would be looked at every year. The auditing regime relies heavily on the regulator being satisfied that the providers have a corporate culture that embraces robust Safety Management Systems and General Management Systems which affect air traffic services safety.

The auditing approach recognises the role of the service provider in day to day safety management, and the role of the regulator in monitoring or probing such safety management. The topics for auditing are selected by the regulator; the reason for selection may be, for example, that the UK’s Mandatory Occurrence Reporting Scheme has identified a deficiency, the regulator’s inspectors have observed a deficiency or that other information has been received that indicates a problem area. The audit regime also requires the regulator to be advised when it is proposed to change procedures or airspace, such as the opening of new sectors. These changes will be audited

to an extent dependent on the unit's previous record of managing such projects. It may be appropriate to conduct a full audit the first time a unit makes a major change, but to reduce the amount of auditing at the next and subsequent changes if the unit proves to be adequate at safely managing the projects.

At medium sized units which do not operate under a Safety Case system, air traffic control inspectors trained and employed by the regulator inspect air traffic control units on an annual basis. These units are required to have processes and procedures to ensure they comply with the licensing requirements. For example, most medium sized units participate in the local certification of competence scheme. In this scheme, air traffic controllers are trained and certified by the regulator to examine other air traffic controllers on their unit to determine if they are competent to provide the air traffic control services notified in their licences. At small units which are unable to resource or support regulatory procedures, the competence of the individual air traffic controllers is checked annually by the CAA's air traffic control inspectors. While this situation will continue to exist under the harmonised European ATC licence regime, the opportunity will be taken to clarify some areas of regulation.

2. An Example: Licensing Implementation Plan in the UK

2.1 Implementation

2.1.1 Introduction

To fully implement the harmonised European ATC licence, the UK will have to meet all the licensing requirements. These include not only converting existing licence qualifications into the European licensing format, but also complying with the other requirements, including the Safety Regulatory and medical requirements. The UK decided to treat the introduction of the harmonised European ATC licence as a project, separate from the routine licensing and regulatory regime. This was done to ensure that all the requirements of the new scheme are viewed as an entirety and the ways in which they interact determined before the European ATC licence is introduced. Although decisions regarding the project management structure and system used will be up to individual States, it was thought appropriate to detail the way in which the United Kingdom Civil Aviation Authority (UK CAA) has approached the implementation project.

2.1.2 Implementation Project

The regulation of ATC services and, in particular, the licensing or certification of air traffic controllers is a specialist task. It requires experts in the various disciplines associated with this regulatory area to make strategic decisions about how to meet the new licensing requirements. However, one person has been given the responsibility for planning, organising and controlling the project. The implementation team consists of ATC experts from all the ATC disciplines, including training both at colleges and units, examining, licensing administration and database management.

2.1.3 Initial stages of the Project

The first phase was to determine the scope by defining the goals to be achieved. In respect of implementing the harmonised European ATC licence, this phase consisted of making a detailed comparison between the UK's existing system for regulating air traffic controllers and the requirements of the harmonised European ATC licence. This process indicated where the UK already met the requirements and which requirements it needed to satisfy. The introduction of the harmonised ATC licence requirements was also seen as an appropriate time to introduce additional changes already identified to improve existing regulation.

2.1.4 Identifying Tasks to be Achieved

The comparison between the existing UK ATC licensing requirements and the harmonised European ATC licence was undertaken by the project manager and his team of experts and carefully documented. This documentation provided a detailed list of tasks that needed to be undertaken to amend existing State requirements and procedures that needed to be introduced to satisfy new requirements. The individual tasks were then further considered by the appropriate expert(s) in the discipline concerned, who drew up comprehensive schedules of the actions to be taken to achieve each task.

2.1.5 Costs and the Regulatory Responsibilities

There will be no significant increase in regulatory costs or changes in regulatory responsibility in the UK as a result of the introduction of the harmonised ATC licence.

2.1.6 Project Risk Analysis

Conducting a project risk analysis is a worthwhile process even if, as is the case with the UK project to introduce the harmonised European ATC licence, it was not proposed to allocate numerical values to identified risks. Unlike commercial risk-taking, the implementation was not considered to be a calculated gamble where there are a considerable number of risks to be managed. The risks identified were issues relating to the introduction of new regulatory processes, in particular those regulations that had the potential to cause an increase in the regulatory burden and/or an increase in cost to the providers of air traffic services, or those that operational air traffic controllers could find difficult to accept.

Identifying the risks was an activity in which all the project team members had a responsibility. Each individual activity in the project was considered by the specialists in that field and a list of risks documented. It was considered better to identify trivial risks that could be discounted during rationalisation rather than miss a risk which, while not considered important by individual team members, might have a considerable impact upon the project as a whole.

During the process of identifying the risks, a planned response to each risk was also considered. The team found that the responses produced were not only specific to particular problems but had wider implications involving policy. The team considered how to manage the risks not only in terms of containment, but also with regard to contingency arrangements should efforts to manage the risk fail.

2.1.7 Supporting Legislation

Having determined what changes were required to the existing ATC regulatory structure to meet the harmonised European ATC licence requirements,

consideration was given to the legislation that supports the existing licensing regime and the changes that will be required for it to support the European licence requirements. In the UK considerable changes will be required to existing legislation and it is expected that this will be the most time consuming part of the implementation project. Changes in legislation in the UK involve the production of a regulatory impact study, consultation with industry and amendment to the Air Navigation Order.

2.1.8 Regulatory Documentation

The UK publishes its air traffic controller licensing requirements in Civil Aviation Publication (CAP) 670 Section D. This section is being rewritten to introduce the new ATC licensing procedures by which the UK will satisfy the harmonised European licensing requirements. It is by this documentation that the providers of air traffic services, unit management, training institutions and individual controllers will be notified of the way in which the UK regulates air traffic services. It has also been necessary to produce guidance material to ensure that units can implement regulatory requirements to a standard format to facilitate the regulation of units by inspection or audit.

2.1.9 Regulatory Personnel

Consideration was given to the requirement for additional personnel and, in particular, for specialist air traffic controllers to be selected and trained for tasks associated with air traffic services regulation following the introduction of the harmonised ATC licence. It was established that the UK would not require additional regulatory personnel. However, air traffic controllers at units may have to be selected and trained to carry out functions associated with new regulatory requirements.

2.1.10 Project Plan

Having considered the changes that were required to implement the harmonised European ATC licence, a detailed project plan was produced and represented in a graphical form. This enabled the project manager to visualise how the project was progressing and for all the personnel involved in the project to determine their part in the project and the deadlines to be met.

A copy of the network diagram produced for the implementation plan in the UK is included at Annex 3. A formal critical path analysis was not conducted because the time taken to complete the project in the UK will depend on the time taken to implement new legislation. All other tasks can be fitted in with the legislation time scale except for the issue of new licences, where a decision has been made to issue them during the twelve month period following the implementation of the supporting legislation. The auditing of units and colleges will be conducted in accordance with the normal audit timetable within the twelve months following introduction of the legislation. The diagram did, however, enable the UK implementation team to determine those tasks

which could be undertaken simultaneously and those which depended on a previous task being completed.

Having completed the flowchart of the project, a horizontal bar chart was produced to indicate the start and finish dates of the various tasks within the project and who was responsible for the work involved. The implementation team used the same readily available software package as was used to schedule the project to produce the harmonised European ATC licence. A copy of the bar chart produced for the UK project is at Annex 3. This gives only the basic tasks and a more detailed chart showing a more complete breakdown of these tasks and individual responsibility for them is being used for the UK implementation.

2.1.11 Review and Rescheduling

The implementation team meets regularly to review the project in terms of its progress against the project plan and to discuss any problems, which are arising with the introduction of new requirements, etc. It is the responsibility of the project manager to monitor the project and to brief the project team members on progress and problem areas. Any rescheduling is included in a revised project plan and reflected in its graphical representation.

2.2 Conversion of Existing Qualifications

2.2.1 Introduction

This section describes the process for implementation in the UK in terms of transferring existing ICAO and UK ratings into the harmonised European ATC licence ratings and rating endorsements.

2.2.2 Aerodrome Control

In the UK all aerodromes where air traffic control is provided have approach control services; therefore the equivalent of the existing ICAO Aerodrome Control rating will be the Aerodrome Control Instrument (ADI) rating for all aerodrome controllers.

2.2.3 Ground Movement Control and Air Control Rating Endorsements

At aerodromes where the aerodrome control function is divided into Ground Movement Control (GMC) and Air Control (AIR), controllers with a valid Aerodrome Control rating will be granted GMC and AIR rating endorsements. However, student/trainee air traffic controllers at those units will be required to gain the rating endorsements simultaneously. This reflects the present situation where the UK does not permit GMC or AIR but only unit endorsements. During the implementation, as indicated in the implementation plan, the UK will develop regulatory procedures to fulfil the European licence requirements. This will include a study of the use of GMC and AIR rating

endorsements as separate independent functions in terms of how the operational positions interact and Team Resource Management (TRM) issues.

2.2.4 Tower Rating Endorsement

At aerodromes where the aerodrome control function is not divided into GMC and AIR, controllers with an existing valid Aerodrome Control rating will be granted the Tower rating endorsement.

2.2.5 Ground Movement Surveillance Rating Endorsement

This rating endorsement will be awarded to all controllers who hold valid Aerodrome Control ratings at units which have Ground Movement Surveillance (GMS). For the implementation of the European ATC licence no distinction will be drawn between the extent of the use of the GMS at individual units.

2.2.6 Aerodrome Radar Rating Endorsement

Most units in the UK which have approach radar will have a surveillance radar display in the Visual Control Room (VCR) with a display range of 20 miles. Where this is used to assist in the provision of an aerodrome control service it is known as an 'Air Traffic Monitor' (ATM). There are two levels for its use, firstly the limited use, which applies to any unit equipped with an ATM, and secondly a more extensive use for which additional approval from the Civil Aviation Authority (CAA) is required. Controllers who hold valid aerodrome control ratings at units which are approved for the limited use of the ATM will not require an Aerodrome Radar rating endorsement. Controllers at units which are approved to provide the additional services will be granted the Aerodrome Radar rating endorsement. The extended use is only permitted where there is a dedicated AIR position and this will continue to be the case following implementation. The implementation team will, however, be considering permitting limited vectoring of aircraft onto an instrument approach aid subject to new safety regulatory procedures yet to be developed.

2.2.7 Approach Control Procedural Rating

Amendment 160 to ICAO Annex 1 (ICAO, 1988) removed the requirement for a controller to hold an Approach Control rating as a prerequisite to holding an Approach Radar rating. The European ATC licence does not address the matter of holding particular ratings before obtaining others, although it does require some rating endorsements to be held before others will be granted.

The UK implemented Amendment 160 by removing the requirement for approach radar controllers to hold an approach rating. The approach radar initial training at the colleges was considerably increased, to include sufficient non-radar training to enable a controller to establish non-radar separation in the event of a radar failure, and to continue to run a structured approach control service.

Additional regulatory requirements were imposed on approach radar units where the controllers would not be required to hold Approach Control ratings. The units were required to have contingency plans for an ongoing approach control service to be provided in the event of a radar failure or radar outage for maintenance. They were also required to have UTPs that demonstrated how a student/trainee air traffic controller would be trained and assessed in the use of the contingency approach control procedures. Approach radar units that do not meet these requirements are not permitted to have approach radar controllers who do not hold Approach Control ratings.

The UK permits the provision of an advisory Approach Control service in Class G airspace. This will be the subject of a national rating endorsement to the Approach Control Procedural (APP) rating, in recognition of the additional skills required in the provision of an approach control service in an uncontrolled environment. The implementation team will develop this national rating endorsement.

2.2.8 Approach Radar

The current approach radar rating will be replaced by the Approach Surveillance rating with the Radar rating endorsement. The Surveillance Radar Approach (SRA) rating endorsement will be issued at all units which provide SRAs as a notified instrument approach. The approved approach radar courses at the colleges already contain initial training in conducting surveillance radar approaches to 2NM from touchdown and it is not expected that this will change. Some UK aerodromes also have procedures for providing SRAs to less than 2NM from touchdown. The implementation team has decided that this issue will be addressed through the approval of the unit training and the competence scheme, rather than by means of a national rating endorsement.

A number of units in the UK provide ground controlled precision approaches using precision approach radar equipment. There is only one type of precision approach radar in use in the UK and the only approved initial training course is conducted by the Royal Air Force at their ATC College. All controllers who currently hold Precision Approach Radar (PAR) endorsements to the Approach Radar rating in the UK will be granted a PAR rating endorsement to the Approach Surveillance rating.

2.2.9 Area Control

In the UK most area services are provided in areas where there is full radar cover. However, there are a number of sectors where the radar cover is limited and a non-radar area control service is provided. The UK also provides non-radar area services to aircraft operating in oceanic airspace over the North Atlantic in the Shanwick Oceanic Control Area.

There is no dedicated area control initial training course in the UK. Under the present licensing system the ICAO Area Control and Area Radar Control ratings have been amalgamated into a single rating, the Area Control Centre

rating. There is a significant amount of area control training in the course, but this is expected to decrease as there is an operational requirement for student controllers to leave the course with greater radar skills and non-radar area control is becoming increasingly unit-specific. Sufficient non-radar training will be retained in the basic course to ensure that controllers can provide emergency separation in the event of a radar failure and continue to provide a limited non-radar area control service. Most of the training to deal with radar failures will be addressed in unit training, as the procedures to be used are specific to particular sectors. Radar failures are part of the required approved annual emergency and continuation training conducted at the operational units.

On sectors where non-radar area control services are provided, controllers who hold valid ratings will be granted an Area Control Procedural (ACP) rating.

The non-radar service provided on the oceanic sectors uses specific oceanic separations and computer-assisted controlling techniques. The basic training provided on the approved area control centre rating course is directed towards providing non-radar area control in domestic airspace and is not relevant to oceanic control. It is therefore necessary to conduct most of the training required on specialist simulators at the unit. Because of the differences between oceanic area control and domestic area control, the implementation team will develop a national oceanic rating endorsement to the ACP rating.

2.2.10 Area Radar Control

Controllers holding valid area control centre ratings on sectors where there is full radar cover and there is no requirement, under normal circumstances, to provide non-radar area control services will be granted an Area Surveillance rating with a Radar rating endorsement. As explained in 2.2.9 above, the present initial training course contains sufficient training to prepare a student/trainee air traffic controller to establish non-radar separation in the event of a radar failure and to continue to provide a limited non-radar area control service. Because of the intensity of traffic and the specialist sectorisation, training for radar failures and the establishment of non-radar separation is a specialist task that has to be addressed through unit training.

2.2.11 Terminal Control

At present the only terminal control service in the UK is provided by the London Terminal Area Control Centre (LATCC). Controllers who currently provide an ATC service on the Terminal Control (TCL) sectors are required to hold a UK Area Control Centre rating. Controllers who have valid Area Control Centre ratings for the terminal sectors will be granted an Area Control Surveillance (ACS) rating with a TCL endorsement.

The unit training associated with the terminal control task involves the extensive use of high fidelity simulators. At present only student/trainee air traffic controllers who have successfully completed the UK Area Control

Centre rating course may commence unit training for the terminal task. With the introduction of the harmonised ATC licence, successful completion of an approved Approach Control Surveillance (APS) course with a radar module will also be accepted as a qualification to enter unit training for the terminal task.

2.2.12 United Kingdom National Rating Endorsements

In the UK the air traffic control units at a number of aerodromes situated outside controlled airspace provide air traffic control services to aircraft involved in military developments. The services provided include autonomous crossing of controlled airspace and the provision of radar services during experimental flights, which may include high and low level supersonic runs, fighting manoeuvres and weapons firing. To satisfy this national requirement, there will be a national rating endorsement known as 'Special Tasks' which will be associated with the Approach Control Surveillance (APS) rating or the Area Control Surveillance (ACS) rating.

The units providing these services are cooperating with the regulator to produce a task analysis. The units will also develop training courses based on the task analysis and the training will eventually be conducted at units that have suitable classroom and simulator facilities. These courses will be considered to be part of initial training although, because of their predominately practical content, instruction will be given by valid On-the-Job Training Instructors (OJTIs).

2.2.13 Initial Training

The harmonisation team is actively engaged in reviewing the approved UK initial rating training courses. The processes for regulating the colleges will not change but there may be a requirement to amend the approved courses. The existing courses are based on UK standards (rating requirements) and these are being compared with the rating requirements associated with the Common Core Content courses. The UK standards are also being updated to the European format and renamed 'rating requirements'; they will contain some differences from the European requirements which are specific to the UK. When this ground work has been completed, the colleges will be advised of the differences and will be expected to submit revised course submissions demonstrating how they meet the identified new requirements.

2.2.14 Safety Regulatory Procedures

The UK currently meets the majority of the safety regulatory requirements associated with the harmonised European ATC licence. Areas where this is not the case have already been identified and these are:

a) not all units have approved unit training plans;

b) there is no existing requirement for units to set the minimum operational controlling time on sectors or operational positions that controllers must complete within a fixed period to ensure that they remain current;

c) there is no requirement for refresher training.

A number of units in the UK have approved Unit Training Plans (UTPs). These were introduced when the UK reviewed its training policy at the beginning of the 1990s. To encourage the development of training plans, the licensing requirements were changed so that those units with approved training would be subject to less direct regulation by the CAA. The plans have proved a success in reducing the amount of OJT required and improving the overall success rate of student/trainee controllers becoming competent at these units. Smaller units lack the resources to produce a UTP and the presently available generic unit training plan provided by the CAA is out of date and rather complex. To facilitate implementation of the requirement in indent a) above, the CAA is producing a more user-friendly generic training plan from which all units should be able to produce their own unit-specific plans.

To implement the requirement in indent b) above providers of air traffic services will be required to submit their proposals to the CAA. The appropriate regional inspectors of air traffic services will consider the proposals and either approve them or require the provider to justify them.

In respect of refresher training in indent c) above the UK already requires units to conduct annual emergency training which includes training to handle aircraft in emergency. This training has recently been reviewed and will be extended to other topics such as avoiding action, sector overload situations, etc. In respect of more general refresher training the UK has as yet made no policy decisions.

For interest a brief description of the regulation of air traffic control units in the UK is at Annex 3.

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3. Draft UK European ATC Licensing Plan

Form Project Team

Compare UK and European licensing requirements

Identify new requirements

Determine if UK regulatory processes will support European requirements

Establish if European ATC licence will support UK ATS

Determine new regulatory documentation required

Decide changes to UK legislation and consultation process required

Determine if unit competency scheme meets European requirements

Provide unit guidance to meet European requirements

Audit/inspect unit competency schemes

Determine if unit training will meet European requirements

Provide unit guidance to meet European requirements

Audit/inspect unit training schemes

Issue new unit approvals

Determine approved college courses meet ECAC training guidelines

Provide guidance to colleges to amend courses to meet ECAC training guidelines

Audit college course submissions

Issue new college approvals

Determine UK ATS not supported by the European licence

Conduct functional analysis of identified ATC tasks

Develop national rating endorsements

Determine if present audit/ inspection regime will support European requirements

Develop new regulatory procedures

Recruit train and assign personnel

Determine if current procedures support European licence administration

Develop new administration processes

Train staff in new administration procedures

Convert current UK ratings to European and national ratings and rating endorsements

Transfer controller details to European ATC licence database

Notify differences to ICAO Annex 1

Draft new legislation

Carry out regulatory impact study

Draft rating requirements for national rating endorsements

Draft new regulatory documentation

Draft amendments to CAP 670

Consult with industry

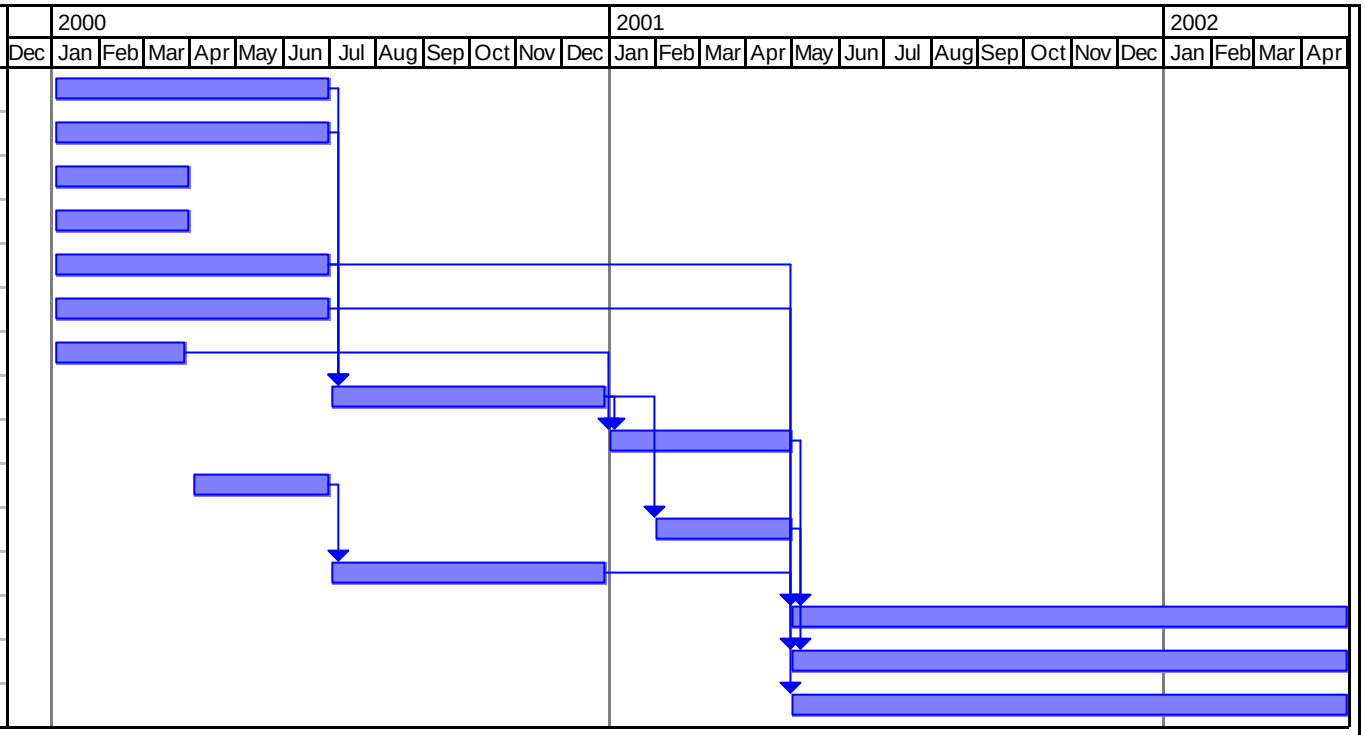
Publish new legislation and regulatory documentation

Issue ATC licence in European format

End of Project

4. Bar Chart of UK Implementation

ID	Task Name	Duration
1	Draft Requirements CAP 670 Part D	130 days
2	Draft Legislation	129 days
3	Analyse Unit Rating Requirements	64 days
4	Analyse Special Task/Off-Shore	64 days
5	Produce Generic UTPs	129 days
6	Compare UK/ECAC Training Guidelines	129 days
7	Regulatory Impact Study	62 days
8	Consult with Industry	130 days
9	Introduce New legislation	86 days
10	Revise Admin Procedures	65 days
11	Issue CAP 670	63 days
12	Convert UK Licences	130 days
13	Issue New ATC Licences	261 days
14	Audit Colleges	261 days
15	Audit Units	261 days



Task
Progress
Milestone
Summary
Rolled Up Task
Rolled Up Milestone
Rolled Up Progress
Split
External Tasks
Project Summary

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ABBREVIATIONS AND ACRONYMS

For the purposes of this document the following abbreviations and acronyms shall apply:

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
AIR	Air Control
AMC	Aeromedical Centre
AME	Approved Medical Examiner
AMRSG	ATCO Medical Requirements Study Group
AMS	Aeromedical Section
APP	Approach control Procedural
APS	Approach control Surveillance
ATC	Air Traffic Control
ATCO	Air Traffic Control Officer / Air Traffic Controller *(UK/US)*
ATM	Air Traffic Management *or* Air Traffic Monitor
ATS	Air Traffic Services
CAA	Civil Aviation Authority
CAP	Civil Aviation Publication
CIP	Convergence and Implementation Programme
DEV	Domain Executive View
DG	Director(ate) General *(EUROCONTROL Headquarters)*

DIS	Director(ate) Infrastructure, ATC Systems & Support *(EUROCONTROL Headquarters, SDE)*
DIS/HUM	See 'HUM (Unit)'
EATCHIP	European Air Traffic Control Harmonisation and Integration Programme *(now EATMP)*
EATMP	European Air Traffic Management Programme *(formerly EATCHIP)*
ECAC	European Civil Aviation Conference
ESARR	EUROCONTROL Safety Regulatory Requirement
ET	Executive Task *(EATCHIP)*
EU	European Union
EWP(D)	EATCHIP Work Programme (Document)
GMC	Ground Movement Control
GMS	Ground Movement Surveillance *or* Guidance Systems
GUI	Guidelines *(EATCHIP/EATMP)*
HRS	Human Resources Programme *(EATMP, HUM)*
HRT	Human Resources Team *(EATCHIP/EATMP, HUM)*
HUM	Human Resources (Domain) *(EATCHIP/EATMP*)
HUM (Unit)	Human Factors and Manpower Unit *(EUROCONTROL Headquarters, SDE, DIS; also known as 'DIS/HUM'; formerly stood for 'ATM Human Resources Unit')*
IANS	Institute of Air Navigation Services (*EUROCONTROL, Luxembourg)*
ICAO	International Civil Aviation Organization *(US)*
IFATCA	International Federation of Air Traffic Controllers' Associations
JAR	Joint Airworthiness Requirements
LATCC	London Terminal Area Control Centre *(UK)*
LTF	Licensing Task Force *(EATCHIP, HUM, HRT)*

LWG	Licensing Work Group *(EATCHIP, HUM, HRT)*
OJT	On-the-Job Training
OJTI	On-the-Job Training Instructor
PAR	Precision Approach Radar
RAD	Surveillance Radar
SDE	Senior Director, EATMP Principal Directorate *or, in short,* Senior Director(ate) EATMP *(EUROCONTROL Headquarters)*
SRA	Surveillance Radar Approach
SRC	Safety Regulation Commission *(EUROCONTROL)*
SRG	Safety Regulation Group *(UK CAA)*
SRU	Safety Regulation Unit *(EUROCONTROL Headquarters, DG)*
ST	Specialist Task *(EATCHIP)*
STD	Standard *(EATCHIP/EATMP)*
TCL	Terminal Control
TDH Unit	Training Development and Harmonisation Unit *(EUROCONTROL, IANS)*
TF-CCC	Task Force Common Core Content *(EATCHIP, HUM, HRT, TSG)*
TSG	Training Sub-Group *(EATCHIP/EATMP, HUM, HRT)*
TWR	Tower Control
UTP	Unit Training Plan
VCR	Visual Control Room
WP	Work Package *(EATCHIP/EATMP)*

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