Edition 1.0
Edition date: 11/11/2009
Reference nr: EUROCONTROL-GUID-115
ISBN: 978-2-87497-053-5

EUROCONTROL Guidelines

EUROCONTROL Guidelines
Supporting the Civil Use of Military Aerodromes

EUROCONTROL

EUROPEAN ORGANISATION
FOR THE SAFETY OF AIR NAVIGATION

EUROCONTROL

EUROCONTROL Guidelines Supporting the Civil Use of Military Aerodromes

DOCUMENT IDENTIFIER: EUROCONTROL-GUID-0115

Edition Number	**:**	**1.0**
Edition Date	**:**	**11/11/09**
Status	**:**	**Released**
Intended for	**:**	**Public Audience**
Category	**:**	**EUROCONTROL Guidelines**

DOCUMENT IDENTIFICATION SHEET

DOCUMENT DESCRIPTION

Document Title

EUROCONTROL Guidelines Supporting the Civil Use of Military Aerodromes

Document Identifier	Edition Number:	1.0
EUROCONTROL-GUID-0115	**Edition Date:**	11/11/2009

Abstract

The EUROCONTROL Guidelines supporting CUMA are intended to provide support to States willing to implement or further expand the civil use of military aerodromes by assessing identified issues and proposing recommendations, in full respect of national subject matter sovereignty. This document will contribute to increasing overall airport capacity and improving the air transport system as a whole, and additionally, it will support the enhancement of civil-military ATM/CNS interoperability.

Keywords

aerodromes	airport capacity	ANS	CNS
interoperability	legislation	military	states
sovereignty	recommendations	formal agreement	services provision

Contact Person:	Fabio GRASSO	Tel: ++ 32 2 729 35 13	Unit: DCMAC/ATM

DOCUMENT STATUS AND TYPE

Status		Intended for		Category	
Working Draft	☐	General Public	☑	EUROCONTROL Rules	☐
Draft	☐	Restricted	☐	EUROCONTROL Specifications	☐
Proposed Issue	☐	EUROCONTROL	☐	EUROCONTROL Guidelines	☑
Released Issue	☑				

ELECTRONIC SOURCE

Path: I:\CND\DCMAC\ATM\CUMA\EUROCONTROL Guidelines Supporting CUMA

Host System	Software	Size
Microsoft Windows XP	Microsoft Word 2002	1284 **Kb**

DOCUMENT APPROVAL

The following table identifies all management authorities who have successively approved the present issue of this document.

AUTHORITY	NAME AND SIGNATURE	DATE
Editor DCMAC/ATM	Fabio GRASSO	11/11/2009
Head of DCMAC Division	Michael STEINFURTH	11/11/2009
Director CMAC & SESI	Jean Robert CAZARRE	11/11/2009
On behalf of the Director General, by special delegation Director CND	Bo REDEBORN	13/11/2009

DOCUMENT CHANGE RECORD

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

Edition Number	Edition Date	Reason for Change	Pages Affected
0.1	01/10/08	Creation	All
0.2	18/11/08	Draft	All
0.3	27/01/09	Draft	All
0.4	15/04/09	Draft	All
0.5	29/05/09	Draft	All
0.6	12/06/09	Draft	All
0.7	12/10/09	Update in accordance with the informal consultation process held between 12/06/09 and 28/08/09	Multiple pages
0.8	29/10/09	Final legal, regulatory and language check	All
1.0	11/11/09	Released version	All

TABLE OF CONTENTS

EXECUTIVE SUMMARY

The significant growth in flights forecast for the medium/long term in the ECAC area will challenge the air transport system's ability to accommodate a much greater demand with the appropriate level of safety and efficiency. In particular, if overall airport capacity is not adequately adapted to future traffic demand, it will represent a serious limiting factor for the expected growth in aviation.

A possible solution to alleviate the future airport capacity crunch could be the expansion of the use of military aerodromes by civil aviation, as envisaged by recent authoritative documents, including SESAR.

The joint civil-military use of designated military aerodromes (in short, CUMA: Civil Use of Military Aerodromes) is a practice already in place in many ECAC States, on the basis of national regulations or agreements laying down competencies and responsibilities for the civil and military counterparts involved. This national approach makes the current ECAC-wide arrangements for CUMA fragmented.

EUROCONTROL DCMAC, by virtue of its unique position in the field of civil-military ATM cooperation, intends to contribute by developing EUROCONTROL Guidelines supporting CUMA, produced in cooperation with Agency and State experts.

By definition, EUROCONTROL Guidelines are not binding on States; therefore, the application of recommendations expressed in the CUMA Guidelines is intended to be on a voluntary basis.

This document is intended to support the national decision-making process and offers a means for ECAC-wide harmonised implementation of CUMA by setting out the benefits for civil and military parties, highlighting key institutional, legal, financial, technical and operational issues, and proposing related recommendations.

In full recognition of States' prerogatives on defence matters, the CUMA Guidelines take due account of existing ICAO documents and EC legislation, in particular the Single European Sky provisions.

1. INTRODUCTION

1.1. Purpose

1.1.1 The significant growth in flights forecast for the coming years in the European Civil Aviation Conference (ECAC) area will challenge the air transport system's ability to accommodate a much greater demand with the appropriate level of safety and efficiency. In particular, if overall airport capacity is not adequately adapted to future traffic demand, it will represent a serious limiting factor for the expected growth in aviation.

1.1.2 The identification and implementation of suitable measures to expand overall and local airport capacity is in progress. In some cases, constructing new aerodromes or adding runways and/or taxiways is not a feasible solution due to limits imposed by the surrounding land or by environmental constraints. Therefore, the use of existing airport structures needs to be efficiently developed to serve a much higher number of flights.

1.1.3 The future airport capacity problem is noted in recent authoritative reports and in the Single European Sky ATM Research Programme (SESAR), where alternative solutions to increase overall airport capacity, like the expanded use of existing regional airports, are envisaged.

1.1.4 In this context, it is proposed to expand the use of military aerodromes by civil aviation. The joint civil-military use of designated military aerodromes (in short, CUMA: Civil Use of Military Aerodromes) is a practice already in place in many ECAC States, on the basis of national regulations or agreements laying down competencies and responsibilities for the civil and military counterparts involved. This national approach makes the current ECAC-wide arrangements for CUMA fragmented.

1.1.5 So far, no initiative has commonly addressed this practice, despite it having been noted by various sources as being a viable solution to alleviate the future airport capacity crunch. EUROCONTROL DCMAC, by virtue of its unique position in the civil-military Air Traffic Management (ATM) cooperation environment, intends to contribute by developing a document in which benefits and issues deriving from CUMA are identified and solutions for the ECAC-wide harmonised implementation of this practice are proposed.

1.1.6 EUROCONTROL DCMAC is responsible for the development and maintenance of this document. It is intended to support States in the implementation/expansion of national CUMA, in full respect of national discretion and responsibilities as regards the subject matter.

1.1.7 The information provided in this document on the implementation and/or further expansion of CUMA may be beneficial for the envisaged harmonised enhancement of local and overall airport capacity in the ECAC area.

1.2. Scope

1.2.1 The EUROCONTROL Guidelines Supporting the Civil Use of Military Aerodromes (in short: CUMA Guidelines), taking due account of national prerogatives relating to the subject matter, have been produced to support the States' civil and military bodies and authorities responsible for making decisions about and organising the implementation of - or where already in place, the expansion of - CUMA.

1.2.2 In particular, this document will:

- Assess CUMA against the existing European Union (EU) legislation/regulations;
- Assess CUMA against International Civil Aviation Organization (ICAO) documents;
- Identify benefits for the civil and military counterparts;
- Identify the main issues (institutional, legal, operational, financial, technical) deriving from CUMA;
- Express recommendations and propose feasible solutions for all issues identified in the EUROCONTROL CUMA Guidelines document.

1.3. Applicability

1.3.1 By definition and in accordance with the EUROCONTROL Regulatory and Advisory Framework (ERAF), EUROCONTROL Guidelines are not binding on States but are developed rather in order to "contribute to the establishment and operation of safe and efficient systems and services related to ATM in the EUROCONTROL Member States".

1.3.2 EUROCONTROL Guidelines may be used, *inter alia*, to support the implementation and operation of ATM systems and services, notably to:

a) complement ICAO Recommended Practices and Procedures;

b) complement EU legislation;

c) indicate harmonisation targets for ATM procedures;

d) encourage the application of best practices;

e) provide detailed procedural information.

1.3.3 It is acknowledged that the decision to implement CUMA lies exclusively with the States. However, in recognition of the need for harmonisation and support to States, the EUROCONTROL CUMA Guidelines are addressed to civil and military bodies as well as organisations involved in or responsible for CUMA in ECAC Member States.

The transposition by States to national legislation of all or part of the guidelines contained in this document is therefore intended to be on a voluntary basis.

1.4. Conventions

1.4.1 In order to identify the suggested force and level of compliance of the recommendations laid down in the present document, and in consideration of the national sovereignty and States' individual decisions on the implementation of CUMA, the following conventions are used:

a) 'should' indicates a requirement or best practice recommended to achieve the best possible implementation of the guidance material;

b) 'may' indicates an optional element;

c) 'CUMA example' indicates an existing practice on specific issues which EUROCONTROL proposes for consideration.

1.5. Definitions

1.5.1 The EUROCONTROL CUMA Guidelines refer to ICAO, Single European Sky (SES) and EUROCONTROL definitions.

1.5.2 The hierarchy of these definitions is established as follows:

ICAO definitions are the main reference, in accordance with the practice adopted in the European Union's SES legislation. If a difference between similar ICAO documentation and SES legislation definitions is found, in respect of what is stated in EC Reg. No. 549/2004 Art. 1.3, the CUMA Guidelines will consider and use the ICAO definition.

1.5.3 EUROCONTROL definitions are used where no definition exists in ICAO or SES legislation.

1.5.4 Definitions relating to CUMA have been listed in Annex 1.

1.6. Document Structure

1.6.1 This document is organised as follows:

- Chapter 1 outlines the purpose, scope, applicability, conventions used, document management and document structure;
- Chapter 2 introduces the current situation regarding CUMA in the ECAC area and the subject matter national prerogatives. It also envisages benefits for the overall airport capacity and for the stakeholders involved.
- Chapter 3 summarises the content of the Fact-Finding Study on Existing Legislation, Regulation, Procedures and Practices across ECAC and Relevant Non-ECAC States in the Joint Civil-Military use of Military Aerodromes, commissioned by EUROCONTROL/DCMAC to SILURI Integration Ltd. and delivered in August 2008.
- Chapter 4 focuses on the applicability of ICAO provisions to CUMA
- Chapter 5 discusses the applicability of the Single European Sky legislation to CUMA, as well as the interrelation between CUMA and the SESAR Programme
- Chapter 6 is dedicated to the detection of the various issues (institutional, legal, financial, technical, operational) deriving from CUMA. For each of them, recommendations are proposed.
- Chapter 7 lists all the recommendations formulated in this document.

2. THE CIVIL USE OF MILITARY AIRPORTS

2.1. The Airport Capacity Crunch

2.1.1 SESAR Programme WP 2.4 defines capacity as “the maximum number of aircraft that can be accommodated in a given time period by the system or one of its components”.

2.1.2 In accordance with the EUROCONTROL STATFOR[1] Long Term Forecast, ed. 2008, the forecast for traffic growth is “(…) between 16.5 and 22.1 million Instrument Flight Rules (IFR) flight movements in the EUROCONTROL Statistical Reference Area (ESRA) in 2030, between 1.7 and 2.2 times the traffic in 2007, an average growth of 2.3%-3.5% per year.”

2.1.3 The EUROCONTROL Challenges of Growth Report, ed. 2008, states “(…) even if airports have adapted their plans well to the future level of expected demand, the future growth will continue to present a significant challenge. In the most likely Scenario 1, the number of unaccommodated demand grows rapidly from 0.9 million flights in 2025 to 2.3 million flights by 2030, meaning that 11% of flights will not be accommodated on current planning”.

2.1.4 Without proceeding beyond the analysis of other authoritative sources expressing similar concerns, it appears that if overall and local airport capacity is not appropriately adapted to future demand, the expected aviation growth will not be possible, with a likely significant impact on the economy of the ECAC States.

2.1.5 Therefore, there is a strong need for action, to identify and implement feasible solutions to further increase overall airport capacity to ensure the safe and efficient accommodation of the estimated number of flights in the years to come.

2.2. The Implementation/Expansion of CUMA as a Possible Solution

2.2.1 Initiatives to improve airport infrastructure, facilities and procedures with a view to increasing capacity at existing airports are currently in progress; consistent improvements have been and are being made but these are not sufficient to accommodate the identified future increase in traffic demand.

2.2.2 The building of new airports or additional runways at existing airports is not always a viable solution due to the environmental impact on the surrounding lands and population, in terms of emissions, air quality and noise.

2.2.3 It is necessary to identify and implement alternative solutions in the medium and long term to provide the required additional capacity, for example the further development and use of existing local or regional airports.

2.2.4 The implementation and/or expansion of CUMA is considered as a potential solution. Designated military aerodromes could offer extra airport capacity to the overall aviation system, thus making use of infrastructure and services already in place.

2.2.5 CUMA is established in many ECAC States in various manners. This practice will be further assessed in this document to verify its effectiveness and, if agreed with the appropriate civil and military authorities, suitably expanded.

[1] EUROCONTROL Statistics and Forecasts Service

2.2.6 Where CUMA is established it is understood that the integration of civil and military operations, infrastructure and service provision is such that the competent national authorities consider this practice acceptable for both civil and military operations.

2.3. National Responsibility for CUMA

2.3.1 Military aerodromes are operated primarily to serve armed forces; the decision to allow civil operations is an exclusively national prerogative since defence matters are a State responsibility, and is normally made between the competent civil and military State authorities. The EUROCONTROL CUMA Guidelines fully recognise this prerogative and are intended to provide support to the decision-making process by setting out the benefits for both civil and military parties, highlighting key issues and proposing related solutions.

2.4. Identified Potential Benefits

It is of major importance to identify benefits for all stakeholders in order to highlight where CUMA provides mutually beneficial solutions. Benefits are not limited to civil aviation, for which CUMA appears attractive, especially for low-cost carriers, cargo, business and general aviation; the benefits for society, the economy, the environment and military operations effectiveness should also be envisaged.

2.4.1 Additional Airport Capacity

Military aerodromes might have latent capacity and infrastructure that could be made available for the benefit of civil aviation. CUMA could allow the distribution of the increasing number of flights to a wider number of airports, thereby enhancing overall airport capacity and contributing to the alleviation of the forecast airport capacity shortfall at large and medium-sized airports for the benefit of the overall air transport system.

Relocation of specific categories of civil flights (for example low-cost, general aviation, business aviation, cargo, etc.) to military aerodromes could unlock extra capacity at major hubs/airports.

2.4.2 Operational Benefits

Operating civil traffic at military aerodromes could reduce delays to the ATM network caused by ground congestion or landing sequences at airports with a high density of traffic.

Both civil and military personnel involved in aerodrome operations could acquire and maintain an ability to operate in, and provide services for, a mixed civil-military aviation environment.

Military air traffic controllers may benefit from gaining familiarity with General Air Traffic (GAT) operations and procedures as well as achieving and maintaining the ability to operate in a mixed GAT/OAT[2] environment, especially in the light of possible deployment to operational theatres.

[2] Operational Air Traffic

2.4.3 Environmental Benefits

The use of military aerodromes for civil flights could reduce the need for new infrastructure, such as additional taxiways, runways, aprons and buildings, at civil aerodromes.

Military aerodromes are often dislocated from cities and villages; therefore, the environmental impact of increased air operations on surrounding communities in terms of noise, emissions and particle matter could be mitigated and help alleviate the environmental impact around major hubs. Any associated reduction in taxi-time delays might also bring added environmental benefits in terms of emissions.

2.4.4 Societal and Economical Benefits

CUMA could support the dispersal of the European transport system across States' territories for the benefit of the population and local/national economy.

Benefits are envisaged for local companies/factories increasing their ability to move goods and products more rapidly.

Increased commercial aviation activities associated with CUMA may provide new job opportunities and contribute to the growth of the local economy. Additionally, the possibility is provided to establish or increase aviation-related tourist flows, which are also beneficial to the region concerned.

For civil aviation, specifically General Aviation, operating at military aerodromes, costs such as parking and landing fees might be lower than those at major airports/hubs.

CUMA brings potential cost recovery benefits for the military.

2.4.5 Civil-Military Interoperability Benefits

Joint use of military aerodromes will enhance civil-military interoperability and may bring better harmonisation in terms of Communication/Navigation/Surveillance (CNS), ground equipment and procedures. When required, suitably-certified civil systems and infrastructure should be installed or adapted to comply with the provisions described in ICAO Annex 14 'Aerodromes' for GAT operations at airports.

3. FACT-FINDING STUDY ON CUMA IN ECAC STATES AND THE USA

3.1 Rationale and Conduct of the Study

3.1.1 As a precursor to the development of the EUROCONTROL Guidelines, a fact-finding study on CUMA in ECAC States and the USA was undertaken between April and August 2008. The aim of the study was to investigate existing legislation, regulation, procedures and practices in States that undertake CUMA and to assess the feasibility of its future expansion. 'Civil use' was limited to Commercial Air Transport operations and Business Aviation and excluded General Aviation and non-military 'State' flights.

3.1.2 Military stakeholders from four States, the Czech Republic, France, Germany and Italy, hosted visits, and the Netherlands, Slovenia, Spain, the United Kingdom and the United States of America provided information by correspondence. The information received was then analysed as regards the institutional, legal, financial and operational issues. The views of commercial user groups, including the International Air Transport Association (IATA) and European Regions Airline Association (ERA), were also sought. Recent authoritative reports on the lack of airport capacity in Europe were studied, along with existing and proposed EU regulation, to assess their impact on CUMA.

3.1.3 The study found that CUMA is well-established in many ECAC States and is routinely overseen through national agreements between the Ministry of Defence (MoD), the Ministry of Transport (MoT) and local governments. It concluded that if agreement could be reached between the military and civil authorities and other interested parties, some military aerodromes could be opened to commercial aviation. If the primacy of the military task could be guaranteed, such expansion could be seen to be in the wider public interest. However, to date, no evidence has been found of a concerted effort either at State or European level to organise or expand CUMA.

3.2 The Impact of European Legislation and Regulations - Current and Planned

3.2.1 Recognising that the EC does not have legislative competence in the domain of national security and defence, the first SES (Single European Sky) legislative package included a series of safeguards to protect military interests. This allowed significant latitude of interpretation of the legislation and some military authorities have embraced SES regulations, whereas others have not. This has meant that whilst SES has influenced military authorities in CUMA, it has not been decisive. Similarly, few military aerodromes are fully compliant with ICAO Annex 14.

3.2.2 At the time it was delivered, the study recognised that whilst still under development, the second legislative package of the SES (SES II) might have a far greater impact, both positive and negative, on CUMA, as could the extension of the competence of the European Aviation Safety Agency (EASA) into the safety regulation of ATM/Air Navigation Service(s) (ANS) and aerodromes.

3.3 Current CUMA Arrangements per State

3.3.1 In most of the States consulted, CUMA had been conducted for many years and in Italy, France and Spain it is a significant commitment for the military authorities. It is less widespread in the Czech Republic, Germany, the Netherlands and the United Kingdom.

3.4 Institutional and Regulatory Arrangements

3.4.1 The study found that working relationships between civil and military stakeholders were good and in States where CUMA was widespread, military authorities tended to have implemented SES legislation to a greater extent. All military authorities were working towards compliance with ICAO Annex 14 at their military aerodromes.

3.5 Legal and Contractual Arrangements

3.5.1 In most instances, CUMA is governed at national level in Aviation Acts and then at subordinate levels by decrees and protocols, as well as agreements between military and civil authorities. However, CUMA tends to have been developed on an *ad hoc* basis over time to meet local requirements.

3.5.2 The competent authorities for CUMA varied on the military side between the MoD and Air Staff but, on the civilian side, tended to be the representative of the civil airport operator. This was often the company established by local town councils.

3.6 Financial Arrangements

3.6.1 Great diversity was found amongst States in the financial arrangements relating to CUMA. In general, the relevant agreements contain cost-sharing arrangements for the use of military-owned facilities and services, with the civilian company levying landing fees and handling charges to recoup its funds. In some States it was not clear how ANS costs were reimbursed to military Air Navigation Service Providers (ANSPs).

3.6.2 Whilst there was evidence of EU financial assistance to support CUMA from regional development and convergence funding, it tended to be for ground infrastructure projects such as terminal buildings. In all States, evidence was provided that regional civil administrations were keen to promote and develop CUMA to stimulate tourism and transport links.

3.6.3 If spare capacity could be identified at military aerodromes, which could be utilised to alleviate pressures elsewhere in the ATM system, at no cost to the MoD's budget, then the response from military stakeholders might be more supportive.

3.7 Operational Arrangements

3.7.1 Of the States studied, there was great similarity in operational arrangements and the division of responsibilities between military and civil stakeholders at individual aerodromes. The military base commander remains in overall charge and the better the joint use agreement, the better the civil-military relationship. Military operations take priority and military authorities are responsible for provision of the ANSP function and most CNS infrastructure. Civil operations are generally conducted from a separate enclave at the aerodrome, with separate access to a terminal building, where a private company provides aircraft ground handling, passenger security and handling and additional 'land-side' infrastructure.

3.7.2 In the USA, local arrangements are similar to best practice identified in Europe. However, at the macro level the experience is very different, with military aerodromes being part of the National Plan of Integrated Aerodrome Systems (NPIAS) and joint-use facilities eligible for funding under the Federal Aviation Administration's (FAA) Military Airport Program.

3.8 Conclusions

3.8.1 At the time it was delivered, the study concluded that whilst CUMA is well-established in several ECAC States, it has developed on an *ad hoc* basis over time to meet particular local requirements. There was no evidence within the States studied of an initiative to expand CUMA but, depending on the emerging SES II regulatory environment and in the light of the forecast pressures on airport capacity, under appropriate financial and operational conditions agreed between military and civil authorities, there may be an opportunity to utilise spare capacity at military aerodromes for commercial operations in the wider public interest.

4. CUMA AND ICAO DOCUMENTATION

4.1. ICAO Document Hierarchy

In accordance with the Chicago Convention, the following hierarchy for ICAO documents of interest for the CUMA Guidelines has been established:

1. Global

- Standards and Recommended Practices (SARPs)

  SARPs are a set of rules (the 18 Annexes to the Chicago Convention) that the ICAO Council adopted as complementary to the Chicago Convention. More specifically:

  - 'Standard' is "any specification for physical characteristics, configuration, matériel (sic), performance, personnel or procedure, the uniform application of which is recognised as necessary for the safety or regularity of international air navigation and to which contracting States will conform in accordance with the Convention; in the event of impossibility of compliance, notification to the Council is compulsory under Article 38".
  - 'Recommended Practice' is "any specification for physical characteristics, configuration, matériel (sic), performance, personnel or procedure, the uniform application of which is recognised as desirable in the interest of safety, regularity or efficiency of international air navigation, and to which contracting States will endeavour to conform in accordance with the Convention".

- Procedures for Air Navigation Services (PANS)

  - PANS are approved by the Council for worldwide application. They contain, for the most part, operating procedures regarded as not yet having attained a sufficient degree of maturity for adoption as International Standards and Recommended Practices, as well as material of a more permanent character which is considered too detailed for incorporation in an Annex, or is susceptible to frequent amendment, for which the processes of the Convention would be too cumbersome.

2. Regional

- Supplementary Procedures (SUPP)

  - SUPPs are a set of regional agreements developed and approved by States participating in ICAO Air Navigation Regions to better address specific regional operational needs in full respect of the Chicago Convention and SARPs. They can be considered as an 'evolution' of PANS in accordance with specific regional needs; therefore, they are at the same hierarchical level.

4.2. Applicability of ICAO Provisions to Military Aerodromes Opened to Civil Aviation

4.2.1 In general, military aerodromes are legacy structures, built and operated to support military operational tasks; therefore, the aerodrome infrastructure and services offered, established by military regulation, may differ from those prescribed in ICAO documentation.

4.2.2 ICAO provisions apply to civil aviation (Art. 3 and 28 of the Chicago Convention). Their applicability to military operations, facilities, aircraft, personnel and procedures is not mandatory and is subject to the decision of the competent State authorities. Nevertheless, the application of ICAO provisions to the services and infrastructure at military aerodromes designated to support civil aviation operations would represent a positive factor to enable safe and efficient air and ground operations, especially as far as civil aviation operations are concerned; therefore, the present document encourages the application of ICAO provisions in CUMA.

Recommendation no. 1: Where CUMA is established, the widest possible application of ICAO provisions as far as ANS, CNS and ground services and infrastructure are concerned should be pursued with regard to services provided to GAT.

Recommendation no. 2: Existing differences between ICAO and specific military provisions should be identified and addressed to allow the safe and efficient conduct of both civil and military air and ground operations.

5. CUMA AND EC LEGISLATION

5.1 Hierarchy in European Union Legislation

5.1.1 To explain the force of EU legislation in the context of the CUMA Guidelines, the following definitions are provided:

- A directive is a legislative act of the European Union which requires Member States to achieve a particular result without dictating the means of achieving that result. Directives need to be transposed into national law. Directives leave Member States with a certain amount of leeway as to the exact rules to be adopted
- A regulation is a legislative act of the European Union which becomes immediately enforceable as law in all Member States simultaneously

5.2 CUMA and the Single European Sky Legislation

5.2.1 The European Union does not have competence for national defence and security matters, which remain the responsibility of individual Member States. The first legislative package of the EC SES initiative, adopted in 2004, included a series of safeguards to protect those interests, but recognising the importance of military participation in the development and implementation of SES, Member States issued a statement (see attachment to EC Reg. No. 549/2004) on military issues relating to the SES that includes the following:

"(…) enhance civil-military cooperation and, if and to the extent deemed necessary by all Member States concerned, facilitate cooperation between their armed forces in all matters of air traffic management".

5.2.2 In some EU Member States, military authorities have fully or largely embraced SES regulation, whereas in others this has been limited. States' military authorities are organised differently and have different relationships with civil ATM stakeholders, ranging from close integration to more parallel structures.

5.2.3 This is also reflected in the different ways each State organises and oversees arrangements for CUMA, particularly as far as ANS provision is concerned. In this respect, Art. 7.5 of EC Reg No 550/2004, the 'Service Provision Regulation', states:

"Member States may allow the provision of air navigation services in all or part of the airspace under their responsibility without certification in cases where the provider of such services offers them primarily to aircraft movements other than general air traffic. In those cases, the Member State concerned shall inform the Commission and the other Member States of its decision and of the measures taken to ensure maximum compliance with the common requirements".

5.2.4 The term 'primarily' has been left open to interpretation. In some States, military authorities have chosen to certify their military ANSPs where they control civil GAT and to implement further elements of the regulations even where implementation is not mandatory, whereas other States have not certified military ANSPs.

5.2.5 On 7 September 2009, the Council of the European Union adopted the second SES II legislative package, amending the four SES Regulations, which entered into force in 2004, as well as EC Reg. No 216/2008, extending the competences of EASA (the European Aviation Safety Agency) to aerodromes, ATM/ANS and air traffic controller licensing (see § 5.4).

5.2.6 In order to progress SES II, the Commission is expected to initiate work on a number of new Implementing Rules (IRs) before the end of 2009.

5.3 The EUROCONTROL SESIM Guidelines

5.3.1 As stated in § 5.1, the Single European Sky (SES) legislation applies specifically to GAT and does not cover military operations or training but, where military authorities provide services primarily to GAT, its rules and regulations may be applied. While military authorities are not obliged to comply with or implement SES legislation, several States have found benefits in doing so.

5.3.2 In order to provide support to its stakeholders, EUROCONTROL has issued a guideline document[4] (the so-called SESIM Guidelines) which includes an overview of the SES legislation that is relevant to military stakeholders, identifying the potential benefits of implementation and offering generic guidance for national military administrations who would like to implement SES legislation, either fully or in part, together with an estimate of the likely effort required. It is acknowledged that any decision to implement SES by military authorities remains a State decision and, in accordance with the EUROCONTROL Regulatory and Advisory Framework, the guidelines are voluntary and are not binding on States, but are developed *"as contributing to the establishment and operation of safe and efficient systems and services related to ATM in the EUROCONTROL Member States.*

5.3.3 The guideline document provides practical advice on implementation, including examples of how to establish a supervisory authority for military ATM and compliance with the common requirements, possibly leading to certification of military ANSPs. It details how military ATCOs might be licensed, especially where they control GAT, and includes measures to address the interoperability Regulation. Further annexes detail the various approaches taken by military authorities in France, Italy and the UK.

5.4 CUMA and EASA

5.4.1 EC Reg. No. 216/2008 on "common rules in the field of civil aviation and establishing a European Aviation Safety Agency" lays down provisions with the objective of establishing and maintaining a high uniform level of civil aviation safety in Europe.

5.4.2 As per its Art.1, the amended (see § 5.1.5) Reg. 216/2008 applies to:

1. The design, production maintenance and operation of aeronautical products, parts and appliances, as well as personnel and organisations involved in the design, production and maintenance of such products, parts and appliances (Art. 1.1(a))
2. Personnel and organisations involved in the operation of aircraft (Art. 1.1(b))
3. The design, maintenance and operation of aerodromes, as well as personnel and organisations involved therein (Art. 1.1(c))
4. The design, production and maintenance of aerodrome equipment, as well as personnel and organisations involved therein (Art. 1.1(d))

[4] EUROCONTROL Guidelines for the implementation of the Single European Sky legislation by the Military, ERAF Reference: EUROCONTROL-GUID–0131, Edition 1.0 (14/07/09)

5. The design, production and maintenance of systems/constituents of ATM/ANS, as well as persons and organisations involved therein (Art. 1.1(e))
6. ATM/ANS, as well as personnel and organisations involved therein (Art. 1.1(f))

5.4.3 Art. 17 establishes the European Aviation Safety Agency (EASA), which is the body responsible for the implementation of the regulation itself. In accordance with Art 18, EASA shall, where appropriate:

- Issue opinions addressed to the Commission;
- Issue certification specifications including airworthiness codes and acceptable means of compliance as well as any guidance material for the application of this regulation and its implementing rules;
- Take the appropriate decisions for the application of Art. 20 (Airworthiness and Environmental Certification), 21 (Pilot Certification), 22 (Air Operations Certification), 22a (ATM/ANS), 22b (Air Traffic Controller Certification), 23 (Third Country Operator), 54 (Inspections of Member States) and 55 (Procedures for Taking Decisions);
- Issue the reports following standardisation inspections carried out as required.

5.4.4 Military Applicability:

The amended text of EC Reg. No. 216/2008, Art. 1 § 2 states:

"This Regulation shall not apply to:

a) products, parts, appliances, personnel and organisations referred to in paragraph 1 (a) and (b) while carrying out military, customs, police, search and rescue, fire fighting, coastguard or similar activities or services. The Member States shall undertake to ensure that such activities or services have due regard as far as practicable to the objectives of this Regulation;
b) aerodromes or part thereof, as well as equipment, personnel, and organisations, referred to in paragraph 1 (c) and (d), that are controlled and operated by the military;
c) ATM/ANS, including systems and constituents, personnel and organisations, referred to in paragraph 1 (e) and (f) that are provided or made available by the military. The Member States shall undertake to ensure that aircraft referred to in point (a) are separated, where appropriate, from other aircraft".

5.4.5 Nevertheless, Art. 1 § 3 states:

"Member States shall, as far as practicable, ensure that any military facilities open to public use referred to in paragraph 2(b) or services provided by military personnel to the public referred to in paragraph 2(c), offer a level of safety that is at least as effective as that required by the essential requirements as defined in Annexes V a and V b" of the EASA Regulation.

5.4.6 Therefore, the amended EC Reg. No. 216/2008 should not impact States' current arrangements for CUMA, since EASA will not have any direct competency on military aerodromes, but obliges States to ensure an equally effective level of safety (in line with requirements expressed in Annex Va and Vb to the EASA Regulation) in the conduct of civil operations at such aerodromes.

5.4.7 Therefore,

Recommendation no. 3: When considering the implementation of CUMA, a State should take into account the amended EC Reg No 216/2008 (EASA Regulation) and related provisions.

5.4.8 When a State has decided to fully or partially apply the EASA Regulation to CUMA, it may consider referring to the EASA Acceptable Means of Compliance (AMCs). AMCs illustrate a means, but not the only means, by which a requirement contained in an EASA airworthiness code or an implementing rule of EC Reg. No. 216/2008, can be met. An applicant correctly implementing an AMC issued by EASA is assured of acceptance of compliance.

5.4.9 As such, published AMCs are not the only means to show compliance with EC Reg. No. 216/2008; a State may decide to ensure compliance by other means. When doing so, it does not need to justify why an alternative is used, but the burden of proof that the requirement has been met rests entirely with it.

Recommendation no. 4: In implementing CUMA, the civil aerodrome operator (see § 6.2.5) should verify and assess differences between the existing services and infrastructure and the related EASA provisions; such differences should be notified by means of Aeronautical Information.

Recommendation no. 5: A civil aircraft operator willing to make use of the military aerodrome should, as a part of the safety management processes, assess in advance the level of compliance of the aerodrome's services and infrastructure with EASA provisions and verify whether the aerodrome fits with his/her operations.

5.5 CUMA and the SESAR Programme

5.5.1 Various SESAR Definition Phase Deliverables (D1 - D6) recognise CUMA as a feasible and beneficial practice to help tackle the envisaged future shortage of airport capacity, and call for a deeper analysis of all related aspects to possibly assess and support its further expansion.

5.5.2 In particular, D2 'Vision of Air Transport in 2020', states:

"Other possibilities to provide additional airport capacity should include (…) an increased joint civil-military use of military airfields and/or a transformation of airfields abandoned by the military."

5.5.3 The need to further investigate CUMA as a contributor to the future ATM is recalled in the various Definition Phase deliverables, where it is also recognised (D4) that:

"(…) the potential runway capacity provided by military airports has not been assessed".

5.5.4 As far as financial aspects of the implementation or expansion of CUMA are concerned, D3 and D5 both recognise that:

"Investments required on civil-military airports in principle would be borne by the Civil Airport operator."

5.5.5 This is also confirmed in the SESAR European ATM Master Plan, where it is stated that:

"(…) it is assumed that the Master Plan implementation related investments required on civil-military airports in principle would be borne by the Airport Operator Civil operator".

5.5.6 More generally, the SESAR Programme acknowledges the potential contribution of CUMA in future ATM operations whilst at the same time recognising the need to better assess and address this practice, especially in the light of the paradigm shift in ATM envisaged in the SESAR Concept of Operations. It is expected that the SESAR Development Phase activities will further investigate the applicability of the SESAR Concept of Operations to CUMA as far as airport operations are concerned.

5.5.7 In consideration of the effort required for their production and of the qualified participation of various civil and military stakeholders, the EUROCONTROL CUMA Guidelines may be considered as a significant contribution by the SESAR Programme towards a better understanding of issues that may arise in mixed civil-military airport operations and a pragmatic support in subject matter problem-solving.

5.6 The EC Airport Observatory

5.6.1 To avoid a possible lack of airport capacity generated by the future continuous growth in air traffic, in 2007 the European Commission adopted 'an Action Plan for airport capacity, efficiency and safety in Europe' with a view to increasing the output of the existing infrastructures and optimising the planning of new infrastructures, while raising safety standards and the environmental compatibility of airports to the highest levels.

5.6.2 This Action Plan established that the Commission will set up an Observatory made up of Member States, relevant authorities and stakeholders' representatives, to exchange and monitor data and information on airport capacity as a whole. The Airport Observatory will be the appropriate forum in which all qualified parties will have their views represented and discussed. The Observatory will meet twice a year and has been set up for a period of five years ending on 31 October 2013.

5.6.3 The role of the Observatory is to advise the Commission on the implementation of the Action Plan for airport capacity, efficiency and safety in Europe. Without prejudice to its right of initiative, the Commission can also consult the Observatory on any matter relating to airport policy.

> **Recommendation no. 6:** In consideration of the contribution to the increase in overall airport capacity expected from the expansion of CUMA, the competent States' civil and military authorities should consider whether to participate in or to monitor the activities of this Observatory.

6 IMPLEMENTING CUMA

6.1 General

6.1.1 This chapter is the core of the CUMA Guidelines. On the basis of the considerations and assumptions made in the previous chapters, a set of issues to be resolved when implementing and managing CUMA are identified, with a view to providing recommendations facilitating the best organisation and conduct of operations at such military aerodromes.

6.1.2 Issues identified and related recommendations are grouped into 5 categories:

- Institutional;
- Legal;
- Financial;
- Technical;
- Operational.

6.1.3 The implementation of CUMA involves a number of issues arising from the differing scope and objectives of civil and military aviation, resulting in differing organisation and supporting facilities required at the military aerodrome concerned.

6.1.4 A military aerodrome is organised and structured to support its specific military operations and may differ from civil aviation operations as far as shape, size, equipment, mission and technical and logistic support required are concerned.

> **Recommendation no. 7:** Where a military aerodrome is designated to also support civil aviation operations, the military authorities responsible for the aerodrome and the civil organisations and companies willing to make use of it should clearly make available the legal, operational, technical and financial framework allowing safe and efficient mixed civil-military operations.

6.2 Institutional Arrangements

6.2.1 <u>National Regulation</u>

In consideration of the related and interconnected institutional, technical, operational and financial implications, CUMA may require the establishment of specific national legislation clearly identifying the competencies and responsibilities of the civil and military counterparts involved.

> **Recommendation no. 8:** CUMA falls entirely under the States' sovereignty, but the related national legislation, when established, should take due account of the subject matter international legislation and provisions applicable to civil aviation.

National legislators should adequately take into consideration that CUMA is conducted at a military infrastructure, established and operated for the purposes of national defence. Such fulfilment could place limitations on civil aviation operations and should be properly addressed.

6.2.2 Decision-Making Process

The CUMA Fact-Finding Study showed that the initiative of opening a military aerodrome to civil aviation operations is always undertaken by civil bodies, namely local communities or aircraft operators, and never by the military.

> **Recommendation no. 9:** The national legislation should set out the procedures (planning, permission, etc.) to be followed as well as the civil and military bodies entitled to take part in the decision-making process for the implementation or expansion of CUMA.

The designation of a military aerodrome for mixed civil-military use should be carefully considered by the competent civil and military authorities with due respect to military requirements.

> **Recommendation no. 10:** The endorsement of the military authority designated by the subject matter national legislation should be the primary requirement to allow civil aviation operations at a military aerodrome.

CUMA Example

United States of America

In general, to make CUMA an effective practice for the overall air transport system and aerodrome capacity, a comprehensive approach at national level may be required. The arrangement in place in the USA may be considered as a best practice in the decision-making process for the implementation of CUMA.

A US National Plan of Integrated Airport Systems (NPIAS) has been prepared at regular intervals since the mid-1940s and identifies aerodromes that are significant to national air transportation and eligible for aid under the FAA Airport Improvement Program (AIP). The AIP provides grants to public agencies and, in some cases, to private owners and entities for the planning and development of aerodromes opened to public use. Funds for the AIP are drawn from the Airport and Airway Trust fund, supported by user fees, fuel taxes, and similar revenue sources.

The MAP is a grant set aside from the AIP and through this programme, with a view to reducing congestion at existing aerodromes experiencing significant delays, the FAA awards grants to civil sponsors who are converting military aerodromes to civil or joint military-civil use. Whilst the majority of this aid goes to the conversion of aerodromes no longer required by the military, in promoting joint-use, existing military aerodromes may also be eligible for financial assistance from the FAA. The total number of designations at any time is limited to 15 of which 1 may be a general aviation airport; the remaining airports must be commercial service or relievers.

Currently, there are three joint-use airports in the programme. However, the number has varied since the beginning of the programme in 1991. Several airports that were previously joint-use have since been turned over to their sponsors through the Base Realignment and Closure (BRAC) process. There are presently twenty-two joint-use airfields in the national air transportation system.

6.2.3 Eligibility of an Aerodrome for CUMA

Recommendation no. 11: In establishing CUMA, designated civil and military authorities should verify if the selected military aerodrome is provided with the infrastructure and services required for the intended civil aviation operations, in accordance with national and international standards, and assess if the specific military operational requirements and the typology of military activity at the aerodrome allow the coexistence of military and civil aviation operations.

For instance, military airlift airbases could be more easily used by civil aviation since the typology of such aircraft and the related aerodrome infrastructure are more similar than those in use at aerodromes supporting fighter aircraft units.

Recommendation no. 12: As mentioned in the CUMA Fact-Finding Study, States may categorise their military aerodromes in regard to the extent of implementation of CUMA on the basis of national defence requirements

CUMA Examples

Italy

In accordance with the MOD Decree of 25 January 2008 'Atto di indirizzo relative agli aeroporti militari a doppio uso militare-civile', Italy has categorised all its military aerodromes as follows:

- Military aerodromes designated as a Main Operating Base (MOB) for exclusive military use, where the Italian Air Force (ITAF) conducts fundamental activities that cannot be relocated without a detrimental effect on military operational capability;
- Military aerodromes designated as a MOB where existing civil operations can be expanded, on condition that such expansion does not have a negative impact on military activities, institutionally defined, and does not impact negatively on the MOD budget;
- Military aerodromes where the ITAF, other Armed Forces and Coast Guard flying units are deployed, in which the compatible co-existence of civil air traffic and operational and training needs of military flying units is ensured;
- Military aerodromes designated for the role of Deployment Operating Base (DOB) where there is minimal military presence in support of temporary operational deployment and which can be used by civil aviation, subject to the following conditions:
  - Civil and military operations are conducted on separate sides of the manoeuvring area;
  - Civil air traffic can be restricted and is of subordinate priority to military needs;
  - Companies responsible for civil operations shall fund the start-up and regular conduct of airport operations, taking over responsibility for providing aerodrome services from ITAF.
- Military aerodromes where there is no requirement for further military use that are being, or are planned to be, changed from military to civil status in accordance with the protocol, subject to the transfer of responsibilities for airport facilities and services to civil aviation agencies.

France

All French aerodromes, except private aerodromes, have been registered in one of three lists referring to different categories of use, with most military aerodromes allocated to list 2, some to list 1 and a small number to list 3.

- List 1: Aerodromes opened to public air traffic which can be used by all operators, civil and military;
- List 2: Aerodromes reserved for the use of 'administrations'. These are used only by military or 'administration' aircraft but civil use may be permitted by special arrangement;
- List 3: Aerodromes with restricted use where aircraft which are allowed to operate are specially defined. This may include commercial air transport.

United States of America

The MAP shall consider only current or former military aerodromes for designation if a grant would:

- Reduce delays at an airport with more than 20,000 hours of annual delays in commercial passenger aircraft takeoffs and landings; or
- Enhance airport and air traffic control system capacity in a metropolitan area or reduce current and projected flight delays.

A maximum of 15 aerodromes per fiscal year may participate in the MAP of which one may be a general aviation aerodrome.

6.2.4 Impact Assessment on Population

The implementation and conduct of CUMA could have a significant impact on local communities in environmental, societal and economic terms.

Recommendation no. 13: The impact of establishing CUMA should be evaluated in advance and successively monitored with the contribution of all civil and military parties involved, to ensure that it does not represent a negative factor for the population concerned and to identify corrective measures where necessary.

Recommendation no. 14: As far as practicable and in consideration of the specific military status of the aerodrome concerned, a communication policy and consultation mechanisms should be established to involve the surrounding population on issues with potential societal implications.

CUMA Examples

Slovenia

This is the list of impact assessments conducted at Cerklje airport as a result of civil-military use. According to the Slovenian regulations, the competent civil and military authorities were not requested to conduct most of the analysis and studies listed below for the military aerodrome, which are compulsory for civil aerodromes. Nevertheless, the competent military authority decided to conduct them all.

- Navigation study
- Topographical analysis
- Meteorological analysis
- Geodetic research
- Geological analysis
- Traffic study
  - Air traffic
  - Street or road traffic
  - Urban traffic
- Environmental study
  - Water protection
  - Air pollution
  - Noise pollution
  - Bird and wildlife protection
- Cultural and archaeological heritage study
- Demographic study
  - Schooling
  - Migrations
- Economical study
  - Cost-benefit analysis
  - Employment
  - Tourism
  - Passengers
  - Cargo

6.2.5 Conducting Aerodrome Operations: Roles and Responsibilities

The organisation of aerodrome operations is complex as a result of the multiple activities that are simultaneously conducted and because of the coordination and synchronisation required to deliver the appropriate level of service with the required level of safety. The efficient management of aerodrome operations is possible where roles and responsibilities are clearly established.

Recommendation no. 15: CUMA should be supported by ad-hoc directives detailing the tasks, competencies and areas of jurisdiction and responsibilities of all civil and military parties.

Recommendation no. 16: The competent civil and military authorities should designate an airport authority in charge of the management of aerodrome operations and establish its competencies and responsibilities in accordance with the legislation/regulation in force.

As dual operations, civil and military, may require the establishment of two authorities, one for the civil and one for the military part of the aerodrome, with different supervising authorities, an agreement between those two bodies should be developed and established. This agreement should describe the respective tasks, obligations and responsibilities. If required, supporting regulatory measures may be put in place.

Recommendation no. 17: Where CUMA is established, the competent civil and military authorities should designate the body in charge of the area of the aerodrome allocated to civil aviation operations and/or the provision of all services necessary for civil aviation operations. This body may be generically called 'civil airport operator'.

Recommendation no. 18: Responsibilities of the civil airport operator, when established, and its interaction with the military organisation/authority in charge of the military aerodrome should be defined.

6.2.6 Civil-Military Consultation Arrangements

Recommendation no. 19: Regular consultation and coordination arrangements between the civil and military authorities and the relevant parties (civil airport operator, aircraft operators, airport service providers, others) involved in aerodrome operations should be established in order to identify at an early stage conflicts of interest and mitigate any potential problems, as well as to improve overall aerodrome operations.

6.3 Legal Arrangements

6.3.1 Formal Civil-Military Agreements

The CUMA Fact-Finding Study highlighted that a detailed formal agreement addressing the largest possible number of issues in aerodrome organisation, management and operations is key to a better implementation and efficient conduct of CUMA. The more detailed the formal agreement, the better the conduct of joint civil-military operations at the aerodrome.

Depending on the national regulations in force, the civil and military organisations involved will most likely have to agree on arrangements laying down conditions and the roles and responsibilities of the civil and military bodies involved in the implementation and conduct of CUMA. From the military side, the signatory authority could be the MOD or, on its behalf, a delegated High Command, while on the civil side signatories could be the national Civil Aviation Authority (CAA), ANSP or companies created to operate the civil part of the aerodrome (the civil airport operator).

Recommendation no. 20: The formal agreement between the civil and military bodies involved, which may be a Letter of Agreement, Memorandum of Understanding or a Contract, should address in detail all issues inherent to the mixed civil-military use of the aerodrome, including but not exclusively restricted to the following:

- Allocation of respective areas of competency with regard to the aerodrome territory;
- Designation of aerodrome authority(ies) and respective competencies;
- Designation of the civil airport operator (if necessary);
- Mechanisms for civil-military coordination and consultation;
- Responsibilities for Air Navigation and ground services provision;
- Sharing existing or installing new CNS systems;
- Maintenance and operation of infrastructure and equipment;
- Logistic and operational support provision;
- Responsibilities for aerodrome security;
- Customs and immigration;
- Cost calculation and sharing for the necessary initial investments and for services necessary for operations;
- Cost recovery mechanisms (definition of ANS and airport charges, billing of services at the aerodrome, etc.);
- Other specific issues to be addressed ad hoc.

6.3.2 Safety Accountability

In CUMA, civil and military aircraft with significant differences in characteristics, performance and mission operate at the same time, at the same aerodrome, often following different flight rules and procedures. This peculiar situation could potentially bring with it an increased risk of incidents.

Recommendation no. 21: States should set up the appropriate regulatory framework and identify the body(ies) responsible for flight safety provision and oversight for civil and military operations at the aerodrome.

Recommendation no. 22: Potential risks of conducting simultaneous civil and military operations at a military aerodrome should be assessed in advance by a comprehensive safety assessment, and appropriate mitigation solutions should be identified and implemented.

Recommendation no. 23: States should establish if and to what extent EUROCONTROL Safety Regulatory Requirements (ESARRs) (which are transposed into EC law), are applicable to civil-military operations, procedures and personnel at military aerodromes.

6.3.3 Responsibilities for Airport Security

As far as civil aviation is concerned, aerodrome security is addressed by ICAO Annex 17 ‘Security - Safeguarding international civil aviation against acts of unlawful interference’, and in particular by its § 3.2, ‘Airport Operations’, and the applicable national and EC legislation in force.

Military aerodromes are normally provided with proper local surveillance and security arrangements protecting the whole installation or designated restricted areas as required by military standards.

The regular presence at the aerodrome of civil aircraft, passengers and goods requires a clear designation of areas intended for civil or joint civil-military use and the allocation of the responsibility for the provision of security in such areas.

Recommendation no. 24: Responsibility for the provision of security measures at the part of the aerodrome under civil jurisdiction, if applicable, should be in accordance with ICAO Annex 17 and the applicable national and EC legislation in force.

Recommendation no. 25: Responsibility for the provision of security measures at the part of the aerodrome under civil jurisdiction, if applicable, should be properly coordinated and contracted with the extant military security.

Recommendation no. 26: Responsibility for the provision of security measures at the part of the aerodrome under civil jurisdiction, if applicable, may be allocated to a civil security provider.

Recommendation no. 27: The competent authorities should define whether the civil or military security standards are to be applied in areas of the aerodrome designated for mixed civil-military use.

Recommendation no. 28: The provision of customs and passport checks should be ensured and the related roles and responsibilities identified for areas under civil and military jurisdiction, in accordance with national and international legislation (e.g. provisions established by the Schengen Treaty).

6.3.4 Environmental Accountability

As far as civil aviation is concerned, “Environmental Protection” is addressed by ICAO Annex 16, subdivided into:

- Volume 1 – Aircraft noise
- Volume 2 – Aircraft engine emissions

and by the applicable national and EC legislation in force.

The increased use of local aerodromes to better distribute airport capacity would alleviate the environmental impact on areas surrounding major hubs but could bring similar problems to such local aerodromes. Extended civil aviation operations might cause a significant increase in emissions and noise, as well as a deterioration in local air quality around military aerodromes partly designated for the use of civil aviation; in many cases, military aerodromes are situated in the countryside and, therefore, the impact of air operations on populations could be more limited.

Recommendation no. 29: The competent civil and military authorities should nominate a body accountable for environmental matters arising from the conduct of civil aviation operations at each military aerodrome.

Recommendation no. 30: The competent civil and military authorities should establish the process for and designate the body(ies) in charge of the identification and consideration of the environmental impact in CUMA.

The involvement in this process of representatives of all the parties involved, including the local populace, should be ensured, as is already the case in a number of ECAC States in the planning procedures for civil aerodromes.

Recommendation no. 31: Where appropriate, adequate measures to mitigate the environmental impact of civil aviation operations on surrounding areas and populations should be undertaken, and supporting funding mechanisms should be established.

Such mitigation measures may include:

- Modification of approach, departure and ground operations (taxiing, rolling, engine start-up, APU, etc.) procedures;
- Structural adaptations of affected houses and buildings (for instance by installing double/triple glazing, modified roofing, etc.) to ensure adequate insulation from noise produced by aircraft operations. In this case, supporting funding mechanisms should be established.

A template produced by EUROCONTROL indicating how to conduct a consultation process on environmental matters regarding aerodromes is proposed as best practice in Annex 4.

6.3.5 Air Navigation Services Certification

Pursuant to Art. 7 of EC Reg. No. 550/2004, the 'Service Provision Regulation', EC Member States must certify ANS providers in accordance with common requirements established pursuant to Art. 6 of the Service Provision Regulation (EC Reg. No. 2096/2005). The National Supervisory Authority is responsible for issuing the certificates and for monitoring compliance with the common requirements.

However, Art. 7.5 of the Service Provision Regulation states: "Member States may allow the provision of air navigation services in all or part of the airspace under their responsibility without certification in cases where the provider of such services offers them primarily to aircraft movements other than general air traffic". This might be the case for military aerodromes opened to civil aviation operations, where it is likely that the operating flights are primarily OAT ("other than GAT") and where ANS is provided in full or in part by the military principally for the benefit of OAT. Therefore, the ANS provided might not be fully compliant with civil standards prescribed by the aforementioned common requirements.

In this respect, Art. 7.5 concludes: "In those cases, the Member State concerned shall inform the Commission and the other Member States of its decision and of the measures taken to ensure maximum compliance with the common requirements".

Recommendation no. 32: Where a military aerodrome is opened up to civil aviation operations, the State should clearly define if and which related Air Traffic Services (ATS)/Aeronautical Information Services (AIS), Meteorological Services (MET), CNS services, personnel, systems and ground infrastructures are to be certified as well as the competent civil and/or military authority charged with the certification.

6.3.6 Aerodrome Certification

ICAO Doc. 9774, the 'Manual on Certification of Aerodromes', is the main reference for the international civil aviation community as far as aerodrome certification is concerned, the objective being to provide uniform conditions at aerodromes opened to public use throughout all ICAO Contracting States.

In Section A – Introductory Notes, 3, it is stated: "States may, as deemed appropriate, make provisions in their regulation for the use of military aerodromes by civil aircraft".

Additionally, § 2.3 'Basic principles for aerodrome certification regulations' states: "The regulation of a State should include provisions for: (…) f) the use of military aerodromes by civil aircraft".

In accordance with amended EC Reg. No. 216/2008, Art. 2, certification of a military aerodrome 'controlled and operated by the military', including aerodromes opened to civil aviation operations, on the basis of EASA provisions is not mandatory.

> **Recommendation no. 33:** In CUMA, the total or partial application of the provisions on aerodrome certification in ICAO Doc. 9774 or in the proposed amended EC Reg. No. 216/2008, and the related existing AMCs, should be a decision for the State.

If the decision to certify the aerodrome is taken, the State needs to clearly establish the related certification process.

Amendment 35 to ICAO Annex 15, "Aeronautical Information Services", effective as from 20.7.09 and applicable as from 19.11.09, prescribes that States shall publish in their national Aeronautical Information Publication (AIP) – Part AD 1.5 a list of aerodromes in the State, indicating the status of certification, including:

- aerodrome name and ICAO location indicator;
- date and if applicable, validity of certification;
- remarks, if any.

In accordance with the introduction of this provision, States should consider its applicability to CUMA and the related responsibilities as far as publication in the national AIP is concerned.

6.3.7 Licensing of ANS Personnel

The air traffic controller (ATCO) is the only professional function involved in ANS provision for which the issue of a licence is expressly mandated, in accordance with ICAO Annex 1, 'Personnel licensing', and EU Directive 2006/23/EC, 'Community air traffic controller licence'.

Directive 2006/23/EC transposes the requirements laid down in EUROCONTROL Safety Regulatory Requirement No. 5 (ESARR 5) relating to air traffic controllers into EC law (see recital (4) of Directive 2006/23/EC).[5]

In this respect, EU Directive 2006/23/EC, 'Community air traffic controller licence', states:

"(…) the introduction of a Community licence is a means of recognising the specific role which air traffic controllers play in the safe provision of air traffic control. The establishment of Community competence standards will also reduce fragmentation in this field, making for more efficient organisation of work in the framework of growing regional collaboration between air navigation service providers (…)".

The Directive is applicable to "student air traffic controllers and to air traffic controllers, exercising their functions under the responsibility of air navigation service providers which offer their services primarily to aircraft movements of General Air Traffic".

[5] Amended EC Reg. No 216/2008 Art. 2: "Directive 2006/23/EC is hereby repealed. The provisions of Directive 2006/23/EC shall continue to apply, on a transitional basis, until the date of application of the measures referred to in Art. 8c(10) of Regulation (EC) No 216/2008 as amended by this Regulation".

Nevertheless, Art. 1 comma 3 of the Directive states:

"(…) in cases where regular and planned Air Traffic Control services are provided to General Air Traffic under the responsibility of air navigation service providers which offer their services primarily to aircraft movements other than general air traffic, Member States shall ensure that the level of safety and quality of the services to general air traffic is at least equivalent to the level resulting from the application of the provisions of this Directive".

Recommendation no. 34: In CUMA, where ATS is provided by military ATCOs, they should be trained in order to achieve an equivalent level of competence as laid down in EC Directive 2006/23/EC.

Recommendation no. 35: Whilst in CUMA licensing of military ATCOs is not mandatory, an equivalent level of ATS safety standards should be applied.

Recommendation no. 36: A licence or equivalent for military ATCOs may be issued, and in such cases States should designate the body responsible and the process to be followed for the issuing of such licence.

ESARR 5 'ATM Services' personnel' expressly requires the application of "appropriate safety regulation also to engineering and technical personnel (ATSEP - Air Traffic Safety Electronics Personnel) who undertake operational safety related tasks" and "to ensure that ATSEP are properly trained and qualified to perform the assigned tasks".

Recommendation no. 37: States should establish the extent to which ESARR 5 provisions apply to civil and/or military ATSEPs providing services at military aerodromes opened to civil aviation operations (ref. ESARR 5 § 3.3.1).

As far as other professional functions involved in ANS provision are concerned, for example Aeronautical Information services and the Meteorological service, the issuing of a licence is not compulsorily required by ICAO and/or EC provisions.

Recommendation no. 38: States may issue licences for specific professional functions involved in ANS provision in CUMA for which the same rule is applied at civil aerodromes.

6.4 Financial Arrangements

6.4.1 Cost-Sharing for the Installation, Operation and Maintenance of Facilities and Services

In the light of what is stated in § 5.3.4 of the present document, the implementation and conduct of civil aviation operations in CUMA should be at 'no cost' to military organisations.

Recommendation no. 39: Costs for the military deriving exclusively from civil aviation operations should be calculated and the related compensation addressed between civil and military authorities.

When a service (for example Air Traffic Control) or an infrastructure (e.g. runway/taxiway, lights) supports both civil and military users' operations, provisions should be put in place to ensure separate calculation of resulting costs (implementation, operation, maintenance where required) for the civil and the military users and for the implementation of fair cost-sharing mechanisms.

Recommendation no. 40: Costs for both civil and military service providers resulting from the operation of CUMA should be calculated and a related cost-sharing mechanism should be established.

It might be the case that some infrastructure needs to be modified or that the operating hours of ANS and/or support services need to be extended to support civil aviation operations.

Recommendation no. 41: Where a new system needs to be installed or modifications to existing infrastructure are to be undertaken to accommodate specific civil requirements, the financial responsibilities should be clearly indicated.

6.4.2 Cost-Benefit Analysis

Recommendation no. 42: Where a military aerodrome is proposed as being eligible for CUMA, a comprehensive cost-benefit analysis taking into account the financial impact on all civil and military parties involved should be conducted in advance and be adequately considered in the decision-making process to facilitate mixed civil-military operations.

Recommendation no. 43: Costs resulting from any impact assessment on the implementation of civil aviation operations at a military aerodrome (e.g. environmental, social, and operational) should not be a burden on the military.

The formal agreement as in § 6.3.1 of the present document should specify responsibilities and cost-sharing for the conduct of the necessary impact assessments (e.g. environmental, societal, operational) as required by national legislation.

In Annex 5, a generic CUMA Cost-Benefit Analysis template developed by EUROCONTROL is proposed.

6.4.3 Charges Definition and Recovery

In CUMA, it is necessary to establish a scheme for the calculation and recovery of terminal (related to the approach and aerodrome phases of flights) ANS and airport charges to equally refund the civil and/or military service providers supporting civil aviation operations, as required.

The following documents set out the ICAO principles and provisions applicable to civil aviation regarding ANS and airport charges:

- ICAO Doc. 9082, 'ICAO's Policies on Charges for Airports and Air Navigation Services';
- ICAO Doc. 9161, 'Manual for Air Navigation Services Economics'.

6.4.3.1 Terminal Charges

EC Reg. No 1794/2006 addresses the common charging schemes for ANS, including terminal ANS, in the EU Member States, in line with the principles set out in the abovementioned ICAO documents. Pursuant to Art. 3 of this Regulation, costs resulting from the provision of terminal ANS shall be financed by means of terminal charges levied on the users.

Recommendation no. 44: States should define the extent to which EC Reg. No 1794/2006 applies to civil aviation operating at military aerodromes where ANS is provided by the military and, in this case, implement the related charges calculation and recovery mechanisms.

Recommendation no. 45: Where responsibility for the provision of terminal ANS is shared between civil and military providers, a detailed scheme for the sharing and recovering of ANS charges should be established.

Recommendation no. 46: Where a State has determined that EC Reg. No 1794/2006 is not applicable in full or in part to CUMA, an alternative charging scheme for terminal ANS charges should be established and appropriately notified.

6.4.3.2 Airport Charges

Directive 2009/12/EC, which entered into force on 15 March 2009, was introduced with the objective of setting common principles for the levying of airport charges at Community airports. EU Member States will bring into force the laws, regulations and administrative provisions necessary to comply with it by 15 March 2011.

This EC Directive will apply to airports located in the Community that are above a minimum size as the management and the funding of small airports does not attract the application of a Community framework. It will therefore apply to any airport located in a territory subject to the Treaty and open to commercial traffic whose annual traffic exceeds five million passenger movements and to the airport with the highest number of passenger movements in each Member State.

EU Member States will publish a list of the airports on their territory to which this Directive applies; this list will be based on data from the European Commission (Eurostat) and shall be updated annually.

Recommendation no. 47: In CUMA, the State should establish:

- if and to what extent Directive 2009/12/EC is applicable to each military aerodrome open to civil aviation operations;
- if not, an alternative charging scheme.

6.5 Technical Arrangements

6.5.1 Airspace Design and Classification

Typologies of flights performed by military aircraft are often completely different from the IFR and/or VFR flight profiles of civil aircraft flying as GAT. Airspace volumes and instrument arrival and departure procedures that are established to serve a military aerodrome and under the control of military Air Traffic Control Units (Control Towers and Approaches) may not be adequate to accommodate civil aviation flight procedures.

ICAO Doc. 8168, 'Aircraft Operations', Volume II, outlines the principles for airspace protection and procedure design which all ICAO signatory states must adhere to.

Recommendation no. 48: In implementing CUMA, the national civil and military bodies in charge of airspace design should verify if the airspace structures (volumes, arrival and departure procedures) associated with the aerodrome are sufficient to accommodate civil aviation flight procedures to/from the military aerodrome and, if deemed necessary, appropriate and mutually acceptable, consider new airspace design in order to cater for both civil and military airspace requirements in a safe manner.

This process should include the assessment of the impact of proposed airspace modifications on the route network and also on other airspace users.

Similarly, when a military aerodrome is designated for CUMA, the national civil and military bodies in charge of airspace design should ensure that arrival and departure procedures are established in a way to facilitate connectivity with the route network.

Recommendation no. 49: In implementing CUMA, the national civil and military bodies in charge of airspace design should also consider if modification of the classification of the airspace concerned in accordance with the ICAO provisions is required as a consequence of the conduct of civil GAT and mixed GAT/OAT operations.

6.5.2 Airport Design

ICAO Annex 14, Vol. 1, 'Aerodrome design and operations', is the main subject matter reference for civil aviation. ICAO Doc. 9184, 'Airport Planning Manual', conversely, is the reference for the overall planning of aerodromes, impact on the environment and on financial and other non-technical factors that need to be considered in the development of an aerodrome hosting civil aviation operations.

Military aerodrome infrastructure might not comply with ICAO provisions; for instance, an arrester cable on the runway is considered by ICAO as an obstacle, while its presence is necessary for the safety of operations of specific military aircraft.

Recommendation no. 50: An assessment should be conducted to ascertain if the existing infrastructure is compliant with the provisions of ICAO Annex 14 and to determine what modifications should be undertaken to adapt, where possible, existing military structures to ICAO requirements without detriment to military operational effectiveness.

Recommendation no. 51: Outstanding differences between the existing aerodrome infrastructure and the ICAO provisions should be the subject of a safety assessment.

Recommendation no. 52: The differences identified between existing aerodrome structure and equipment and ICAO provisions should be notified by means of Aeronautical Information Publication.

6.5.3 Installation and Serviceability of Required CNS Equipment

Recommendation no. 53: The competent civil and military authorities should verify and indicate whether the CNS systems in place at the aerodrome to support military operations are compliant with ICAO Annex 10, 'Aeronautical Telecommunications', and with applicable national and EC legislation in force, and to what extent they are usable to support the intended civil aviation operation.

Recommendation no. 54: The designated civil and military bodies should specify their respective responsibilities for the operation and maintenance of each item of CNS equipment where this supports both civil and military flights (see § 6.3.1 of the present document).

Recommendation no. 55: If new CNS equipment (e.g. ILS) and/or infrastructure is to be installed or modifications to existing equipment or structures are to be undertaken to meet the specific requirements of civil aviation, the arrangements (see § 6.3.1 of the present document) between the civil and military authorities should clearly define the respective responsibilities and financial arrangements for the installation(s), certification (if required), operations, maintenance and, where required, security.

6.5.4 Implementation and Serviceability of Support Systems

Recommendation no. 56: The competent civil and military authorities should establish (see § 6.3.1 of the present document) which of the existing support systems and services (such as de-icing, towing, refuelling, ground handling, bird and wildlife control and reduction, etc.) in place at the aerodrome could be offered to facilitate civil aviation operations and identify those which need to be newly installed or implemented.

The financial and operational responsibility for the provision of the service and/or the facilities needs to be determined.

6.6 Operational Arrangements

6.6.1 Procedures for Mixed Civil and Military Operations

Simultaneous civil and military flights taking place at the same aerodrome need to be specifically addressed since the two typologies of flights might differ significantly as far as aircraft performance and operations are concerned.

Recommendation no. 57: The competent civil and military authorities should:

- Assess in advance the feasibility of mixed civil and military operations at the aerodrome;
- Identify the potential interactions that require to be addressed and establish appropriate ATC procedures (such procedures should be subject to safety analysis prior to implementation);
- Continuously monitor the application of ATC procedures and, if required, modify or implement new procedures as necessary.

Recommendation no. 58: Areas allocated to civil aviation ground operations should be clearly designated. Where civil and military operations take place in the same portions of the manoeuvring area, appropriate procedures should be established in order to ensure that coincident civil/military aircraft operations are safe.

Recommendation no. 59: ATC procedures should be implemented in order to ensure that simultaneous air and ground civil/military aircraft operations at and around the aerodrome are safe and efficient.

6.6.2 Priority Rules

Where CUMA is established, it is likely that both civil and military flights will operate simultaneously in the same portion of the manoeuvring area (runway, taxiways, aprons) of the aerodrome and in the same associated airspace (ATZ, CTR and TMA). Due to the differing nature of the two typologies of flights, it is necessary to establish priority rules to cover conflicting coincident operations. Such rules should not unnecessarily penalise any airspace and/or aerodrome user but they should be established in order to ensure that military operational requirements are not compromised.

Recommendation no. 60: Priority rules should be established to ensure that military operational activities are not limited by civil aviation operations.

6.6.3 Air Traffic Service Provision

6.6.3.1 General

The principles and rules governing the provision of ATS to GAT are laid down in ICAO Annex 11, “Air Traffic Services”.

Military ATS units (Approach Control and Aerodrome Control, including Ground) may be designated by States to provide ATS within airspace structures (ATZ, CTR and TMA) associated with a military aerodrome. The procedures and rules that are applied in the provision of ATS to military aviation operating as OAT may be different from those prescribed by ICAO Annex 11, which are applicable to GAT.

Recommendation no. 61: In CUMA, military ATS units designated as being responsible for the airspace structures associated with the aerodrome should be authorised by the competent State authority to provide ATS to civil aviation operating as GAT in accordance with ICAO Annex 11, or equivalent as determined by the national regulations.

6.6.3.2 Mixed GAT/OAT Operations

Recommendation no. 62: Where OAT and GAT operate simultaneously and interact in the same portion of airspace or on the manoeuvring area at the aerodrome, designated military ATS units should apply ICAO Annex 11 to ensure the safe and expeditious conduct of both categories of flights, unless otherwise specified by the national regulation and/or specific local rules.

Recommendation no. 63: In the event of simultaneous OAT and GAT operations, specific regulations, rules and procedures that are applicable to OAT may be laid down and applied in accordance with any priority rules that are established for the aerodrome.

Recommendation no. 64: ATC operators at military ATS units should be appropriately trained and qualified in order to provide safe and expeditious ATS during concurrent civil and military flights, and be able to, where necessary, apply the ICAO provisions and non-ICAO established rules and procedures.

6.6.3.3 Phraseology

The provision of ATS to OAT could involve the use of non-ICAO-standard phraseology by ATC operators at military ATS units.

Recommendation no. 65: During simultaneous OAT/GAT operations, the use of non-ICAO-standard phraseology should be limited as much as possible in order to allow civil aviators to maintain adequate situational awareness; however it is essential that the safety of military operations is not compromised.

Details of military-specific phraseology and its meaning should be made available to the civil operators in order to ensure that they can maintain situational awareness when military phraseology is used by military ATC staff.

Recommendation no. 66: Appropriate ATC coordination procedures for both GAT and OAT should be established between military ATS units operating at military aerodromes and adjacent and/or relevant ATS units (e.g. ACCs).

For this purpose, appropriate procedures should be agreed and communication systems and coordination tools should be put in place.

6.6.3.4 Operating Hours

In CUMA, civil aviation operations could take place outside military operating hours for which ATS is provided; for this reason, the operating times of military ATS units may require an extension in time (hours, days) and in some cases available ATC operators might not be sufficient to ensure the required ATS provision.

Recommendation no. 67: The competent civil and military authorities should ensure that civil aviation operations are permitted only where adequate ATS is in place or they should implement alternative solutions to ensure that ATS is available for the time required for civil aviation operations.

CUMA Example

Germany – Rostock Laage Aerodrome

During the hours of military operation as published in AIP Germany, ATS provision is conducted by military ATC operators. Outside these hours, the Class D Control Zone remains active and ATC operators contracted by RLG, the civil airport operator, provide the aerodrome control service using the military facilities. Predominantly ex-military personnel, these ATC operators are regulated, trained and standardised under military regulations, with no participation by or involvement of the civil regulator.

6.6.4 AIS Provision

Recommendation no. 68: Where CUMA is established, the State's competent authorities should ensure that appropriate aeronautical information of interest for civil aviation concerning the aerodrome, the associated airspace and ANS, and the ground services provided is published in accordance with ICAO Annex 15.

The responsibilities of the civil and military organisations regarding the collection and publication of such aeronautical information should be clearly defined.

Recommendation no. 69: The competent civil and military authorities should indicate if the military ARO (ATS Reporting Office) in place at the military aerodrome is able and authorised to provide services to civil aviation in accordance with ICAO provisions.

If this is not the case, the competent civil and military authorities may identify and implement an alternative solution to ensure the availability of ARO functions for civil aviation operations, even outside military flight operational hours.

6.6.5 MET Provision

ICAO Annex 3, 'Meteorological Service for International Air Navigation', § 3.3, prescribes that "Each Contracting State shall establish one or more aerodrome and/or other meteorological offices which shall be adequate for the provision of the meteorological service required to satisfy the needs of international air navigation".

A military aerodrome is normally provided with a Meteorological Office supporting military air operations. In many ECAC States, these offices share information with the civil national Meteorological Service and operate in accordance with ICAO Annex 3 and with military operational standards.

Recommendation no. 70: Where CUMA is established, the competent civil and military authorities should define if and to what extent the Meteorological Office in place at the military aerodrome could support civil aviation operations.

If that is not the case, an alternative solution to provide civil aviation with an appropriate meteorological service may be identified and implemented.

6.6.6 Rescue and Fire Fighting Service

Normally, at military aerodromes, the Rescue and Fire Fighting Service (RFFS) organisation and provision are tailored to military aircraft operations, in accordance with appropriate military directives.

As far as civil aviation is concerned, the RFFS is addressed by ICAO Annex 14, § 9.2.

Recommendation no. 71: Where CUMA is established, responsibility for the provision of RFFS to civil aviation, in addition to the services provided to assist military flights, should be clearly allocated and the related operational procedures developed and implemented. The extent of compliance with ICAO Annex 14 should be published by means of Aeronautical Information Publication.

Recommendation no. 72: RFFS at the aerodrome should be provided by a single body for all flights.

Dual civil and military RFFS at the aerodrome may be established only when deemed necessary by the competent civil and military authorities on the basis of specific civil and/or military operational requirements or national legislation. In this case, the respective tasks and responsibilities of the two RFFSs should be clearly identified and published in local regulations/rules or orders, as appropriate.

Recommendation no. 73: RFFS crews should be equipped and trained to operate effectively in a mixed civil-military aerodrome operations environment.

Recommendation no. 74: In order to provide an adequate level of protection to civil aircraft operating at the aerodrome, the ICAO categorisation of aerodromes for rescue and fire fighting as reported in Table 9-1 on Page 9-4 of Annex 14 Volume 1 should be applied and appropriately notified by means of Aeronautical Information Publication.

Specific fire and rescue training covering all aircraft types that routinely operate from the aerodrome should be provided for the RFFS crews.

6.6.7 Training of Civil and Military Technical and Operational Personnel

In CUMA, civil and military technical and operational personnel may provide services to both civil and military aircraft operating in the same part of the manoeuvring area. Such personnel might have limited knowledge of the characteristics and conduct of the various services provided by different individuals/organisations to other categories of flights. They might also be unaware of the potential negative impact that inappropriate behaviour might have on aerodrome operations and safety.

Recommendation no. 75: Civil and military personnel involved in operations or providing supporting services in areas designated for mixed civil-military operations should be trained to respect their areas of competency, to safely interact with other equipment and personnel, and be trained to ensure the safe and strict application of the established operational procedures.

6.6.8 Runway Safety

In CUMA, various types of civil and military aircraft with very different sizes and performance share a manoeuvring area, and may be operated in accordance with different procedures. Personnel and vehicles supporting both civil and military aircraft operations have access to aprons, taxiways and runways. Failure to follow established procedures could lead to hazards to the safe movement on the ground of aircraft and vehicles, in particular during the take-off and landing phases of flights. Procedures are to be established to ensure that aircraft, vehicles and staff are adequately protected.

Recommendation no. 76: The civil and military bodies responsible for flight safety at the aerodrome should identify the potential risk regarding the unauthorised use of the runway and other portions of the manoeuvring area and implement measures to prevent events resulting in potential or actual runway incursions.

Recommendation no. 77: States may consider implementing measures identified in the EUROCONTROL Action Plan for the Prevention of Runway Incursion (EAPRRI) for their application in CUMA.

6.6.9 Aerodrome Emergency Planning

ICAO Annex 14, § 9-1 and ICAO Doc. 9137, 'Airport Services Manual', Part 7, 'Airport Emergency Planning', are the main references for civil aviation regarding emergencies occurring at the aerodrome and/or in its vicinity.

Examples of such emergencies are: aircraft emergencies, sabotage including bomb threats, unlawfully seized aircraft, dangerous goods occurrences, fires in buildings and natural disasters.

The objective of aerodrome emergency planning is to minimise the effects of an emergency, particularly with a view to saving lives and maintaining aircraft operations. The aerodrome emergency plan sets out the procedures for coordinating the response of various aerodrome agencies (or services) and of those agencies in the neighbouring community that could also be of assistance in responding to the emergency, particularly if the emergency is such that the response required exceeds the capability of the services located at the aerodrome.

Aerial and non-aerial military operations taking place at military aerodromes are normally covered by emergency plans. Due to the specific characteristics of military aircraft operations and the types of emergencies that they might be subject to, the military emergency plans may differ from the subject matter ICAO provisions.

Due to the specific status of the military aerodrome, emergency plans may differ from the relevant ICAO provisions.

Recommendation no. 78: In CUMA, the competent civil and military authorities should develop emergency plans to cover concurrent civil and military aircraft operations. These plans should include those situations that simultaneously involve civil and military aircraft, infrastructure and personnel.

7 SUMMARY OF RECOMMENDATIONS

7.1 Applicability of ICAO Provisions to Military Aerodromes Opened to Civil Aviation

Recommendation no. 1: Where CUMA is established, the widest possible application of ICAO provisions as far as ANS, CNS and ground services and infrastructure are concerned should be pursued with regard to services provided to GAT.

Recommendation no. 2: Existing differences between ICAO and specific military provisions should be identified and addressed to allow the safe and efficient conduct of both civil and military air and ground operations.

7.2 CUMA and EASA

Recommendation no. 3: When considering the implementation of CUMA, a State should take into account the amended EC Reg No 216/2008 (EASA Regulation) and related provisions.

Recommendation no. 4: In implementing CUMA, the civil aerodrome operator should verify and assess differences between the existing services and infrastructure and the related EASA provisions; such differences should be notified by means of Aeronautical Information.

Recommendation no. 5: A civil aircraft operator willing to make use of the military aerodrome should, as a part of the safety management processes, assess in advance the level of compliance of the aerodrome's services and infrastructure with EASA provisions and verify whether the aerodrome fits with his/her operations.

7.3 The EC Airport Observatory

Recommendation no. 6: In consideration of the contribution to the increase in overall airport capacity expected from the expansion of CUMA, the competent States' civil and military authorities should consider whether to participate in or to monitor the activities of this Observatory.

7.4 Implementing CUMA

Recommendation no. 7: Where a military aerodrome is designated to also support civil aviation operations, the military authorities responsible for the aerodrome and the civil organisations and companies willing to make use of it should clearly make available the legal, operational, technical and financial framework allowing the safe and efficient mixed civil-military operations.

7.5 Institutional Arrangements

Recommendation no. 8: CUMA falls entirely under the States' sovereignty, but the related national legislation, when established, should take due account of the subject matter international legislation and provisions applicable to the civil aviation.

Recommendation no. 9: The national legislation should set out the procedures (planning, permission, etc.) to be followed as well as the civil and military bodies entitled to take part in the decision-making process for the implementation or expansion of CUMA.

Recommendation no. 10: The endorsement of the military authority designated by the subject matter national legislation should be the primary requirement to allow civil aviation operations at a military aerodrome.

Recommendation no. 11: In establishing CUMA, designated civil and military authorities should verify if the selected military aerodrome is provided with the infrastructure and services required for the intended civil aviation operations, in accordance with national and international standards, and assess if the specific military operational requirements and the typology of military activity at the aerodrome allow the coexistence of military and civil aviation operations.

Recommendation no. 12: As mentioned in the CUMA Fact-Finding Study, States may categorise their military aerodromes in regard to the extent of implementation of CUMA on the basis of national defence requirements.

Recommendation no. 13: The impact of establishing CUMA should be evaluated in advance and successively monitored with the contribution of all civil and military parties involved, to ensure that it does not represent a negative factor for the population concerned and to identify corrective measures where necessary.

Recommendation no. 14: As far as practicable and in consideration of the specific military status of the aerodrome concerned, a communication policy and consultation mechanisms should be established to involve the surrounding population on issues with potential societal implications.

Recommendation no. 15: CUMA should be supported by ad-hoc directives detailing the tasks, competencies and areas of jurisdiction and responsibilities of all civil and military parties.

Recommendation no. 16: The competent civil and military authorities should designate an airport authority in charge of the management of aerodrome operations and establish its competencies and responsibilities in accordance with the legislation/regulation in force.

Recommendation no. 17: Where CUMA is established, the competent civil and military authorities should designate the body in charge of the area of the aerodrome allocated to civil aviation operations and/or the provision of all services necessary for civil aviation operations. This body may be generically called ‘civil airport operator’.

Recommendation no. 18: Responsibilities of the civil airport operator, when established, and its interaction with the military organisation/authority in charge of the military aerodrome should be defined.

Recommendation no. 19: Regular consultation and co-ordination arrangements between the civil and military authorities and the relevant parties (civil airport operator, aircraft operators, airport services providers, others) involved in aerodrome operations should be established in order to identify at an early stage conflicts of interest and mitigate any potential problems, as well as to improve overall aerodrome operations.

7.6 Legal Arrangements

Recommendation no. 20: The formal agreement between the civil and military bodies involved, which may be a Letter of Agreement, Memorandum of Understanding or a Contract, should address in detail all issues inherent to the mixed civil-military use of the aerodrome, including but not exclusively restricted to the following:

- Allocation of respective areas of competency with regard to the aerodrome territory;
- Designation of aerodrome authority(ies) and respective competencies;
- Designation of the civil airport operator (if necessary);
- Mechanisms for civil-military coordination and consultation;
- Responsibilities for Air Navigation and ground services provision;
- Sharing existing or installing new CNS systems;
- Maintenance and operation of infrastructure and equipment;
- Logistic and operational support provision;
- Responsibilities for aerodrome security;
- Customs and immigration;
- Cost calculation and sharing for the necessary initial investments and for services necessary for operations;
- Cost recovery mechanisms (definition of ANS and airport charges, billing of services at the aerodrome, etc.);
- Other specific issues to be addressed ad hoc.

Recommendation no. 21: States should set up the appropriate regulatory framework and identify the body(ies) responsible for flight safety provision and oversight for civil and military operations at the aerodrome.

Recommendation no. 22: Potential risks of conducting simultaneous civil and military operations at a military aerodrome should be assessed in advance by a comprehensive safety assessment, and appropriate mitigation solutions should be identified and implemented.

Recommendation no. 23: States should establish if and to what extent EUROCONTROL Safety Regulatory Requirements (ESARRs) (which are transposed into EC law), are applicable to civil-military operations, procedures and personnel at military aerodromes.

Recommendation no. 24: Responsibility for the provision of security measures at the part of the aerodrome under civil jurisdiction, if applicable, should be in accordance with ICAO Annex 17 and the applicable national and EC legislation in force.

Recommendation no. 25: Responsibility for the provision of security measures at the part of the aerodrome under civil jurisdiction, if applicable, should be properly coordinated and contracted with the extant military security.

Recommendation no. 26: Responsibility for the provision of security measures at the part of the aerodrome under civil jurisdiction, if applicable, may be allocated to a civil security provider.

Recommendation no. 27: The competent authorities should define whether the civil or military security standards are to be applied in areas of the aerodrome designated for mixed civil-military use.

Recommendation no. 28: The provision of customs and passport checks should be ensured and the related roles and responsibilities identified for areas under civil and military jurisdiction, in accordance with national and international legislation (e.g. provisions established by the Schengen Treaty).

Recommendation no. 29: The competent civil and military authorities should nominate a body accountable for environmental matters arising from the conduct of civil aviation operations at each military aerodrome.

Recommendation no. 30: The competent civil and military authorities should establish the process for and designate the body(ies) in charge of the identification and consideration of the environmental impact in CUMA.

Recommendation no. 31: Where appropriate, adequate measures to mitigate the environmental impact of civil aviation operations on surrounding areas and populations should be undertaken, and supporting funding mechanisms should be established.

Recommendation no. 32: Where a military aerodrome is opened up to civil aviation operations, the State should clearly define if and which related Air Traffic Services (ATS)/Aeronautical Information Services (AIS), Meteorological Services (MET), CNS services, personnel, systems and ground infrastructures are to be certified as well as the competent civil and/or military authority charged with the certification.

Recommendation no. 33: In CUMA, the total or partial application of the provisions on aerodrome certification in ICAO Doc. 9774 or in the proposed amended EC Reg. No. 216/2008, and the related existing AMCs, should be a decision for the State.

Recommendation no. 34: In CUMA, where ATS is provided by military ATCOs, they should be trained in order to achieve an equivalent level of competence as laid down in EC Directive 2006/23/EC.

Recommendation no. 35: Whilst in CUMA licensing of military ATCOs is not mandatory, an equivalent level of ATS safety standards should be applied.

Recommendation no. 36: A licence or equivalent for military ATCOs may be issued, and in such cases States should designate the body responsible and the process to be followed for the issuing of such licence.

Recommendation no. 37: States should establish the extent to which ESARR 5 provisions apply to civil and/or military ATSEPs providing services at military aerodromes opened to civil aviation operations.

Recommendation no. 38: States may issue licences for specific professional functions involved in ANS provision in CUMA for which the same rule is applied at civil aerodromes.

7.7 Financial Arrangements

Recommendation no. 39: Costs for the military deriving exclusively from civil aviation operations should be calculated and the related compensation addressed between civil and military authorities.

Recommendation no. 40: Costs for both civil and military service providers resulting from the operation of CUMA should be calculated and a related cost-sharing mechanism should be established.

Recommendation no. 41: Where a new system needs to be installed or modifications to existing infrastructure are to be undertaken to accommodate specific civil requirements, the financial responsibilities should be clearly indicated.

Recommendation no. 42: Where a military aerodrome is proposed as being eligible for CUMA, a comprehensive cost-benefit analysis taking into account the financial impact on all civil and military parties involved should be conducted in advance and be adequately considered in the decision-making process to facilitate mixed civil-military operations.

Recommendation no. 43: Costs resulting from any impact assessment on the implementation of civil aviation operations at a military aerodrome (e.g. environmental, social, and operational) should not be a burden on the military.

Recommendation no. 44: States should define the extent to which EC Reg. No 1794/2006 applies to civil aviation operating at military aerodromes where ANS is provided by the military and, in this case, implement the related charges calculation and recovery mechanisms.

Recommendation no. 45: Where responsibility for the provision of terminal ANS is shared between civil and military providers, a detailed scheme for the sharing and recovering of ANS charges should be established.

Recommendation no. 46: Where a State has determined that EC Reg. No 1794/2006 is not applicable in full or in part to CUMA, an alternative charging scheme for terminal ANS charges should be established and appropriately notified.

Recommendation no. 47: In CUMA, the State should establish:

- if and to what extent Directive 2009/12/EC is applicable to each military aerodrome open to civil aviation operations;
- if not, an alternative charging scheme.

7.8 Technical Arrangements

Recommendation no. 48: In implementing CUMA, the national civil and military bodies in charge of airspace design should verify if the airspace structures (volumes, arrival and departure procedures) associated with the aerodrome are sufficient to accommodate civil aviation flight procedures to/from the military aerodrome and, if deemed necessary, appropriate and mutually acceptable, consider new airspace design in order to cater for both civil and military airspace requirements in a safe manner.

Recommendation no. 49: In implementing CUMA, the national civil and military bodies in charge of airspace design should also consider if modification of the classification of the airspace concerned in accordance with the ICAO provisions is required as a consequence of the conduct of civil GAT and mixed GAT/OAT operations.

Recommendation no. 50: An assessment should be conducted to ascertain if the existing infrastructure is compliant with the provisions of ICAO Annex 14 and to determine what modifications should be undertaken to adapt, where possible, existing military structures to ICAO requirements without detriment to military operational effectiveness.

Recommendation no. 51: Outstanding differences between the existing aerodrome infrastructure and the ICAO provisions should be the subject of a safety assessment.

Recommendation no. 52: The differences identified between existing aerodrome structure and equipment and ICAO provisions should be notified by means of Aeronautical Information Publication.

Recommendation no. 53: The competent civil and military authorities should verify and indicate whether the CNS systems in place at the aerodrome to support military operations are compliant with ICAO Annex 10, ‘Aeronautical Telecommunications’, and with applicable national and EC legislation in force, and to what extent they are usable to support the intended civil aviation operation.

Recommendation no. 54: The designated civil and military bodies should specify their respective responsibilities for the operation and maintenance of each item of CNS equipment where this supports both civil and military flights.

Recommendation no. 55: If new CNS equipment (e.g. ILS) and/or infrastructure is to be installed or modifications to existing equipment or structures are to be undertaken to meet the specific requirements of civil aviation, the arrangements between the civil and military authorities should clearly define the respective responsibilities and financial arrangements for the installation(s), certification (if required), operations, maintenance and, where required, security.

Recommendation no. 56: The competent civil and military authorities should establish which of the existing support systems and services (such as de-icing, towing, refuelling, ground handling, bird and wildlife control and reduction, etc.) in place at the aerodrome could be offered to facilitate civil aviation operations and identify those which need to be newly installed or implemented.

7.9 Operational Arrangements

Recommendation no. 57: The competent civil and military authorities should:

- Assess in advance the feasibility of mixed civil and military operations at the aerodrome;
- Identify the potential interactions that require to be addressed and establish appropriate ATC procedures (such procedures should be subject to safety analysis prior to implementation);
- Continuously monitor the application of ATC procedures and, if required, modify or implement new procedures as necessary.

Recommendation no. 58: Areas allocated to civil aviation ground operations should be clearly designated. Where civil and military operations take place in the same portions of the manoeuvring area, appropriate procedures should be established in order to ensure that coincident civil-military aircraft operations are safe.

Recommendation no. 59: ATC procedures should be implemented in order to ensure that simultaneous air and ground civil-military aircraft operations at and around the aerodrome are safe and efficient.

Recommendation no. 60: Priority rules should be established to ensure that military operational activities are not limited by civil aviation operations.

Recommendation no. 61: In CUMA, military ATS units designated as being responsible for the airspace structures associated with the aerodrome should be authorised by the competent State authority to provide ATS to civil aviation operating as GAT in accordance with ICAO Annex 11, or equivalent as determined by the national regulations.

Recommendation no. 62: Where OAT and GAT operate simultaneously and interact in the same portion of airspace or on the manoeuvring area at the aerodrome, designated military ATS units should apply ICAO Annex 11 to ensure the safe and expeditious conduct of both categories of flights, unless otherwise specified by the national regulation and/or specific local rules.

Recommendation no. 63: In the event of simultaneous OAT and GAT operations, specific regulations, rules and procedures that are applicable to OAT may be laid down and applied in accordance with any priority rules that are established for the aerodrome.

Recommendation no. 64: ATC operators at military ATS units should be appropriately trained and qualified in order to provide safe and expeditious ATS during concurrent civil and military flights, and be able to, where necessary, apply the ICAO provisions and non-ICAO established rules and procedures.

Recommendation no. 65 During simultaneous OAT/GAT operations, the use of non-ICAO-standard phraseology should be limited as much as possible in order to allow civil aviators to maintain adequate situational awareness; however it is essential that the safety of military operations is not compromised.

Recommendation no. 66: Appropriate ATC coordination procedures for both GAT and OAT should be established between military ATS units operating at military aerodromes and adjacent and/or relevant ATS units (e.g. ACCs).

Recommendation no. 67: The competent civil and military authorities should ensure that civil aviation operations are permitted only where adequate ATS is in place or they should implement alternative solutions to ensure that ATS is available for the time required for civil aviation operations.

Recommendation no. 68: Where CUMA is established, the State's competent authorities should ensure that appropriate aeronautical information of interest for civil aviation concerning the aerodrome, the associated airspace and ANS, and the ground services provided is published in accordance with ICAO Annex 15.

Recommendation no. 69: The competent civil and military authorities should indicate if the military ARO (ATS Reporting Office) in place at the military aerodrome is able and authorised to provide services to civil aviation in accordance with ICAO provisions.

Recommendation no. 70: Where CUMA is established, the competent civil and military authorities should define if and to what extent the Meteorological Office in place at the military aerodrome could support civil aviation operations.

Recommendation no. 71: Where CUMA is established, responsibility for the provision of RFFS to civil aviation, in addition to the services provided to assist military flights, should be clearly allocated and the related operational procedures developed and implemented. The extent of compliance with ICAO Annex 14 should be published by means of Aeronautical Information Publication.

Recommendation no. 72: RFFS at the aerodrome should be provided by a single body for all flights.

Recommendation no. 73: RFFS crews should be equipped and trained to operate effectively in a mixed civil-military aerodrome operations environment.

Recommendation no. 74: In order to provide an adequate level of protection to civil aircraft operating at the aerodrome, the ICAO categorisation of aerodromes for rescue and fire fighting as reported in Table 9-1 on Page 9-4 of Annex 14 Volume 1 should be applied and appropriately notified by means of Aeronautical Information Publication.

Recommendation no. 75: Civil and military personnel involved in operations or providing supporting services in areas designated for mixed civil-military operations should be trained to respect their areas of competency, to safely interact with other equipment and personnel, and be trained to ensure the safe and strict application of the established operational procedures.

Recommendation no. 76: The civil and military bodies responsible for flight safety at the aerodrome should identify the potential risk regarding the unauthorised use of the runway and other portions of the manoeuvring area and implement measures to prevent events resulting in potential or actual runway incursions.

Recommendation no. 77: States may consider implementing measures identified in the EUROCONTROL Action Plan for the Prevention of Runway Incursion (EAPRRI) for their application in CUMA.

Recommendation no. 78: In CUMA, the competent civil and military authorities should develop emergency plans to cover concurrent civil and military aircraft operations. These plans should include those situations that simultaneously involve civil and military aircraft, infrastructure and personnel.

ANNEX 1: DEFINITIONS

Aerial Work	An aircraft operation in which an aircraft is used for specialised services such as agriculture, construction, photography, surveying, observation and patrol, search and rescue or aerial advertisement
Aerodrome	A defined area on land or water (including any buildings, installations and equipment) intended to be used either wholly or in part for the arrival, departure and surface movement of aircraft Note: The term 'aerodrome' where used in the provisions relating to flight plans and ATS messages is intended to cover also sites other than aerodromes which may be used by certain types of aircraft e.g. helicopters or balloons
Aerodrome equipment	Any equipment, apparatus, appurtenance, software or accessory that is used or intended to be used to contribute to the operation of aircraft at an aerodrome
Aerodrome Control Service	Air traffic control service for aerodrome traffic
Aerodrome Control Tower	Unit established to provide air traffic control service to aerodrome traffic
Aerodrome Traffic	All traffic on the manoeuvring area of an aerodrome and all aircraft flying in the vicinity of an aerodrome Note: An aircraft is in the vicinity of an aerodrome when it is in, entering or leaving an aerodrome traffic circuit
Aircraft	Any machine that can derive support in the atmosphere from the reactions of the air other than the reactions of the air against the earth's surface
Air Navigation Services	Include air traffic management (ATM), communication, navigation and surveillance systems (CNS), meteorological services for air navigation (MET), search and rescue (SAR) and aeronautical information services (AIS); these services are provided to air traffic during all phases of operations (approach, aerodrome and en route)
Air Navigation Service Provider	Any public or private entity providing air navigation services for general air traffic
Air Traffic	All aircraft in flight or operating on the manoeuvring area of an aerodrome
Air Traffic Control Service	Service provided for the purpose of: a) Preventing collisions: 1) between aircraft, and 2) on the manoeuvring area between aircraft and obstructions, and b) Expediting and maintaining an orderly flow of air traffic
Air Traffic Control Unit	Generic term meaning variously, area control centre, approach control unit or aerodrome control tower

Air Traffic Management (ATM)	The dynamic, integrated management of air traffic and airspace including air traffic services, airspace management and air traffic flow management — safely, economically and efficiently — through the provision of facilities and seamless services in collaboration with all parties and involving airborne and ground-based functions
Air Traffic Service (ATS)	Generic term meaning variously, flight information service, alerting service, air traffic advisory service, air traffic control service (area control service, approach control service or aerodrome control service)
Air Traffic Services Reporting Office (ARO)	Unit established for the purpose of receiving reports concerning air traffic services and flight plans submitted before departure Note: An air traffic services reporting office may be established as a separate unit or combined with an existing unit, such as another air traffic services unit or a unit of the aeronautical information service
Air Traffic Services Unit	Generic term meaning variously, air traffic control unit, flight information centre or air traffic services reporting office
Apron	Defined area, on a land aerodrome, intended to accommodate aircraft for purposes of loading or unloading passengers, mail or cargo, fuelling, parking or maintenance
Certificate	Document issued by a Member State in any form complying with national law, which confirms that an air navigation service provider meets the requirements for providing a specific service
Charge	Levy designed and applied specifically to recover costs of providing facilities and services for civil aviation
Civil-Military Coordination	Coordination between civil and military parties authorised to make decisions and agree a course of action
Commercial Air Transport	Any aircraft operation involving the transport of passengers, cargo or mail for remuneration or hire
Controlled Aerodrome	Aerodrome at which air traffic control service is provided to aerodrome traffic Note: The term ‘controlled aerodrome’ indicates that air traffic control service is provided to aerodrome traffic but does not necessarily imply that a control zone exists
General Air Traffic	All movements of civil aircraft, as well as all movements of State aircraft (including military, customs and police aircraft) when these movements are carried out in conformity with the procedures of ICAO
General Aviation	Any civil aircraft operation other than commercial air transport or aerial work
Hot Spot	Location on an aerodrome movement area with a history or potential risk of collision or runway incursion, and where heightened attention by pilots/drivers is necessary
Interoperability	Set of functional, technical and operational properties required of the systems and constituents of the EATMN and of the procedures for its operation in order to enable its safe, seamless and efficient operation; interoperability is achieved by making the systems and constituents compliant with the essential requirements

Landing Area	That part of a movement area intended for the landing or take-off of aircraft
Licence	Certificate, by whatever name it may be known, issued and endorsed in accordance with EU Directive 2006/23/EC and entitling its lawful holder to provide air traffic control services in accordance with the ratings and endorsements contained therein
Location Indicator	Four-letter code group formulated in accordance with rules prescribed by ICAO and assigned to the location of an aeronautical fixed station
Manoeuvring Area	That part of an aerodrome to be used for the take-off, landing and taxiing of aircraft, excluding aprons
Meteorological Office	Office designated to provide meteorological service for international air navigation
Meteorological Services	Those facilities and services that provide aircraft with meteorological forecasts, briefs and observations as well as any other meteorological information and data provided by States for aeronautical use
Movement Area	That part of an aerodrome to be used for the take-off, landing and taxiing of aircraft, consisting of the manoeuvring area and the apron(s)
Operator	Person, organisation or enterprise engaged in or offering to engage in an aircraft operation
Runway	Defined rectangular area on a land aerodrome prepared for the landing and take-off of aircraft
Runway Incursion	Any occurrence at an aerodrome involving the incorrect presence of an aircraft, vehicle or person on the protected area of a surface designated for the landing and take-off of aircraft
Security	Safeguarding civil aviation against acts of unlawful interference; this objective is achieved by a combination of measures and human and material resources
Taxiway	Defined path on a land aerodrome established for the taxiing of aircraft and intended to provide a link between one part of the aerodrome and another, including: a) Aircraft stand taxi lane. A portion of an apron designated as a taxiway and intended to provide access to aircraft stands only; b) Apron taxiway. A portion of a taxiway system located on an apron and intended to provide a through taxi route across the apron; c) Rapid exit taxiway. A taxiway connected to a runway at an acute angle and designed to allow landing aeroplanes to turn off at higher speeds than are achieved on other exit taxiways thereby minimising runway occupancy times.

ANNEX 2: ABBREVIATIONS

AIP	Aeronautical Information Publication
AIP	Airport Improvement Programme
AIS	Aeronautical Information Services
AMC	Acceptable Means of Compliance
ANS	Air Navigation Services
ANSP	Air Navigation Service Provider
ARO	ATS Reporting Office
ATCO	Air Traffic Controller
ATSEP	Air Traffic Safety Electronics Personnel
ATM	Air Traffic Management
ATS	Air Traffic Services
CAA	Civil Aviation Authority
CNS	Communication, Navigation, Surveillance
CUMA	Civil Use of Military Aerodromes
DCMAC	Directorate of Civil-Military ATM Coordination
EAPPRI	EUROCONTROL Action Plan for the Prevention of Runway Incursion
EASA	European Aviation Safety Agency
EC	European Commission
ECAC	European Civil Aviation Conference
ERA	European Regions Airline Association
ERAF	EUROCONTROL Regulatory and Advisory Framework
ESARR	EUROCONTROL Safety Regulatory Requirement
ESRA	EUROCONTROL Statistical Reference Area
EU	European Union
EUROCONTROL	European Organisation for the Safety of Air Navigation
FAA	Federal Aviation Administration
GAT	General Air Traffic
IATA	International Air Transport Association
ICAO	International Civil Aviation Organization
IFR	Instrument Flight Rules
ITAF	Italian Air Force
MAP	Military Airport Programme
MET	Meteorological Service
MOB	Main Operating Base
MOD	Ministry of Defence
NPIAS	(United States) National Plan of Integrated Airport Systems

OAT	Operational Air Traffic
PANS	Procedures for Air Navigation Services
RFFS	Rescue and Fire Fighting Service
SARP	Standards and Recommended Practices
SES	Single European Sky
SESAR	Single European Sky ATM Research (Programme)
STATFOR	EUROCONTROL Statistics and Forecasts Service
SUPP	Supplementary Procedures

ANNEX 3: REFERENCE MATERIAL

The following documentation is considered as reference material for the EUROCONTROL CUMA Guidelines:

- ICAO Annexes to the Convention on International Civil Aviation, in particular:
  - Annex 1 – Personnel Licensing – 10th Edition (July 2006)
  - Annex 2 - Rules of the Air – 10th Edition (July 2005)
  - Annex 3 - Meteorological Service for International Air Navigation – 16th Edition (July 2007)
  - Annex 4 – Aeronautical Charts – 10th Edition (July 2001)
  - Annex 10 - Aeronautical Telecommunications

    Volume 1 – 6th Edition (July 2006)

    Volume 2 – 6th Edition (October 2001)

    Volume 3 – 2nd Edition (July 2007)

    Volume 4 – 4th Edition (July 2007)

    Volume 5 – 2nd Edition (July 2001)
  - Annex 11 - Air Traffic Services – 13th Edition (July 2001)
  - Annex 13 - Aircraft Accident and Incident Investigation – 9th Edition (July 2001)
  - Annex 14 – Aerodromes

    Volume 1 - 4th Edition (July 2004)

    Volume 2 - 2nd Edition (July 1995)
  - Annex 15 – Aeronautical Information Services 12th Edition (July 2004)
  - Annex 16 – Environment Protection

    Volume 1 - 5th Edition (July 2008)

    Volume 2 - 3rd Edition (July 2008)
  - Annex 17 – Security 8th Edition (April 2006)
- ICAO Doc. 4444 PANS ATM - 15th Edition (2007)
- ICAO Doc. 9184 Airport Planning Manual

  Part 1 - 2nd Edition (1987)

  Part 2 - 3rd Edition (2002)

  Part 3 - 1st Edition (1983)
- ICAO Doc. 9774 Manual on Certification of Aerodromes – 1st Edition (2001)
- ICAO Doc. 8400 ICAO Abbreviations and Codes – 7th Edition (2007)
- ICAO Doc. 9082 ICAO's Policies on Charges for Airports and Air Navigation Services – 8th Edition (2009)
- ICAO Doc. 9161 Manual for Air Navigation Services Economics – 4th Edition (2007)
- ICAO Doc. 9859 Safety Management Manual – 2nd Edition (2008)
- ICAO Doc. 8168 Aircraft Operations 'PANS – OPS'

  Volume 2 – 5th Edition (2006)

- ICAO Doc. 9137 Airport Services Manual
  Volume 7 'Airport Emergency Planning' 2nd Edition (1991)
- The ICAO European Guidance Material - EUR Doc. 013 – 3rd Edition (2008)
- ICAO EUR Doc. 015 on Building Restrictive Areas – 1st Edition (2004)
- European Union - Single European Sky Legislation and Regulations
- European Union - Legislation and Regulations on Airports
- SESAR Definition Phase Documentation (D1 to D6)
- SESAR EUROPEAN ATM Master Plan – 1st Edition (2009)
- EUROCONTROL Safety Regulatory Requirements (ESARRs) – Edition June (2006)
- EUROCONTROL STATFOR Medium - Long Term Report - Edition (2006)
- EUROCONTROL Challenges of Growth Report - Edition (2008)
- EUROCONTROL DCMAC Fact-Finding Study on Legislation/Regulation Addressing CUMA in the ECAC Area
- EUROCONTROL Guidelines for the Implementation of the Single European Sky legislation by the military
- EAPPRI - EUROCONTROL Action Plan for the Prevention of Runway Incursion 1st Edition (2003)

ANNEX 4: ENVIRONMENTAL CONSULTATION TEMPLATE

EUROCONTROL

ATM Service Providers

Stakeholder Consultation Checklist

The checklist below, produced for EUROCONTROL by the Centre for Air Transport and the Environment of Manchester Metropolitan University (UK), is designed to help ATM service providers take a systematic approach to consultation with external stakeholders when planning changes to operations, flight paths or airspace.

APPROACH	YES
Clear articulation of need for consultation	
- Capacity enhancement	
- Improvement to existing operations (explain)	
- Reduce environmental impact of existing operations	
Is there a legal requirement for consultation? - If yes, is the required approach specified? - If yes, confirm following meets those requirements	
Development of proposals/options for consultation	
Environmental impact assessment of proposals - Noise modelling, monitoring - Air quality/odour modelling - Other… cultural/heritage/ecological implications	
Community impact assessment of proposals: - Complaints and media analysis - Previous consultation or survey results	
Engagement with key internal stakeholders impacts upon or with an interest in proposals: - Airport - Airline - Service partners - Others	
Agree what environmental mitigation measures possible	
Assess environmental and community benefits and implications for internal stakeholders of adoption of mitigation measures	
Refinement of limited number of proposals for external consultation including mitigation measures	
Agree approach to external consultation with industry partners: - Role of each - Agree common messages - Agree limits of decision making and ‘flexibility’	
Training of industry stakeholders in consultation techniques	

STAKEHOLDER ANALYSIS	YES
Have all airport stakeholders been systematically identified? - Different interest groups? - Different communities?	
Has a stakeholder analysis been undertaken to identify key stakeholder interests (overlap/conflict between stakeholder groups)? Were the following issues addressed: - Do any social and economic benefits of aviation accrue to each stakeholder group? - What are the costs of the different proposals to each? - What are the interdependencies between groups? - Is there any link between costs and benefits within groups? - What are the attitudes of external stakeholder groups toward aviation?	
Identification of key external (statutory and non statutory) stakeholder groups, both individuals and organisational for contact or full consultation ensuring widest possible coverage. Information obtained from: - Review of results of environmental and community assessment methodologies - Discussions with regulatory authorities	
Select appropriate methods of consultation for each group: - Personal meetings - Public meetings - Focus groups - Consultative committee (Airport Forum) - Other (please specify)	
Is information used for the consultation process clear, unambiguous and using the correct language/indicators? Does it cover the correct issues?	
Revision, review and selection of final option	
Does a formal management system for recording and analysis of feedback exist?	
Collate and analyse feedback from consultation	
Undertake option selection process in consultation with internal stakeholders	
Inform external stakeholders of final option selection including: - Details of how they have influenced the decision - Details of the logic behind decision making	
Engage the Community in Problem-Solving	
Establish a formal consultative committee	
Ensure balanced representation from key external stakeholder groups	
Agree a formal process and work programme	
Agree limits of influence	
Develop operational and performance targets/guarantees	
Agree monitoring and reporting provisions	
Further Communications	
Which of the following methods are appropriate for future communication with your wider external stakeholders: - Environmental/sustainability reports - Information leaflets - Exhibitions and public presentations - Regular newsletter - Workshops - Other (please specify)	

ANNEX 5: GENERIC CUMA COST-BENEFIT ANALYSIS TEMPLATE

1. INTRODUCTION

When a State considers opening a military aerodrome to civil aviation operations, all aspects, including financial aspects, should be assessed in advance.

The EUROCONTROL Guidelines for the economic appraisal of EATMP Projects define the CBA as "an objective study in which the costs and the benefits of a particular project's options are fully quantified in economic terms, taking full account of the times at which costs are paid and at which benefits accrue".

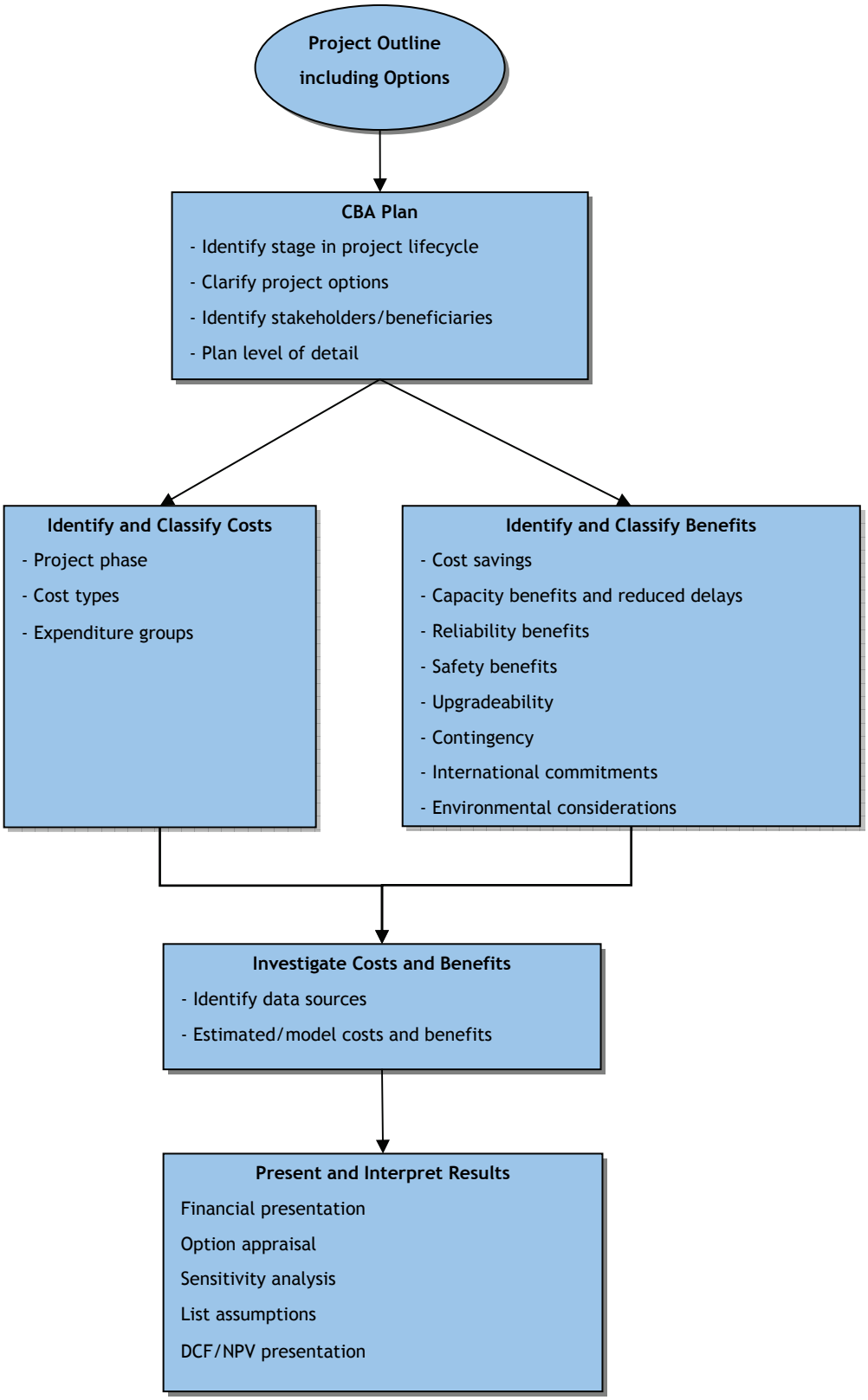
The CBA in CUMA could be a challenging exercise, due to the different nature of the stakeholders involved: military authorities (e.g. airport operator, ANSP, regulator), national and local civil authorities (regulators), civil ANSPs, airport operators, aircraft operators, local communities, etc.

This template seeks to provide generic guidance on the process to be followed and the elements that should be taken into account for the conduct of a comprehensive CBA on CUMA; the template is not to be considered as a specific reference for a CBA since each military aerodrome that is deemed eligible for opening to civil aviation operations has its own unique set of characteristics.

In accordance with the EUROCONTROL Guidelines for the economic appraisal of EATMP Projects, the steps that are to be followed in conducting a CBA are:

1) Identification of the stage in the project lifecycle
2) Clarification of the project options
3) Identification of the stakeholders/beneficiaries
4) Planning level of details
5) Identification/classification of costs
6) Identification/classification of benefits
7) Investigation of costs and benefits
8) Presentation/interpretation of the results

The next figure illustrates how these steps are sequenced.


Project Outline including Options
CBA Plan
- Identify stage in project lifecycle
- Clarify project options
- Identify stakeholders/beneficiaries
- Plan level of detail
Identify and Classify Costs
- Project phase
- Cost types
- Expenditure groups
Identify and Classify Benefits
- Cost savings
- Capacity benefits and reduced delays
- Reliability benefits
- Safety benefits
- Upgradeability
- Contingency
- International commitments
- Environmental considerations
Investigate Costs and Benefits
- Identify data sources
- Estimated/model costs and benefits
Present and Interpret Results
Financial presentation
Option appraisal
Sensitivity analysis
List assumptions
DCF/NPV presentation

A CBA should encompass those elements necessary to provide decision-makers with a comprehensive financial case when undertaking a project or a programme. On the basis of the process shown above, a generic methodology and framework for the conduct of a CBA to support decision-making for CUMA is proposed.

2. LIFECYCLE OF A PROJECT

When a project is to be undertaken, for instance the implementation of CUMA, its lifecycle should be defined in advance.

The phases of this lifecycle can be generically established as follows:

Phase 1: Identify the need or opportunity for the project and investigate the “do-nothing” option. This depends on the existing situation for each State and can be skipped if CUMA is already in force.

Phase 2: Definition of the project scope. Taking into account the greatest number of options possible and highlighting the most promising ones.

Phase 3: Case preparation and presentation.

Phase 4: Procurement, implementation planning and tender assessment.

Phase 5: Implementation and in-service monitoring.

Once the project framework is in place and the possible options in the various steps have been identified, the basic principles of the CBA depicted in the figure above are to be applied.

3. CBA APPLIED TO THE PROJECT LIFECYCLE

3.1 Identification of the Stage in the Project Lifecycle

In the initial Phase of the project, State decision-makers should assess the existing situation in their aviation system with regard to the final goal to open civil aviation operations at a designated military aerodrome.

- If the decision to open CUMA is to be taken, how is the State organised to enable it with the existing infrastructure and services?
- Are CUMA-related regulatory, financial and technical arrangements already in place in the State for other aerodromes?
- Which civil and military bodies are involved and have responsibilities in this project?
- What would be necessary to organise and implement CUMA?
- Has a decision already been taken?
- Will a decision be taken purely on external factors?
- When will a decision be taken?
- Other questions

This step would allow State decision-makers to understand in which of the phases of the lifecycle of the project the process should start. Once a State has assessed that phase, the CBA should be applied to the project lifecycle identified as the most appropriate, including implementation and in-service monitoring.

There is a possibility that at this early stage, decision-makers realise that, in view of the existing situation, it is not worth bringing on implementation of CUMA.

3.2 Clarification of Project Options

A military aerodrome is organised to support military aerial operations and the associated specific operational requirements. Implementing CUMA may require modifications to be made to the existing military arrangements/infrastructure, and further require the implementation of new arrangements/infrastructure to ensure the harmonisation of civil and military flight operations.

Therefore, it is necessary to identify where these new implementations/modifications may need to be applied. A variety of alternative options should be developed for due consideration by the decision-making body.

A list of topics to be considered in the identification of the options is set out below. Due to the specific nature of each military aerodrome this list should not be considered as exhaustive or comprehensive.

- Conditions for civil aviation operations: Depending on the typology of the aerodrome and the related business case approved by the State authorities (low-cost, business aviation, cargo, etc.), the timeframe to conduct civil aviation operations could be limited
- Areas of responsibility: The area allocated to civil aviation operations can be totally separated or undertaken on a part of the military area, or the operations may be entirely merged
- Infrastructure: There could be a need to build new or to modify existing infrastructure to support civil aviation operations
- Air navigation and ground services: Sharing/separation of responsibilities between civil and military bodies for providing services to civil and military operations
- Supplementary equipment: Depending on the selected options, there could be a need to install other equipment to support civil aviation operations
- Cost calculation and recovery: Defines how to calculate and weigh identified costs
- Timeframe: A set of options to be proposed to schedule the development, implementation, transition and fully mixed civil-military operations phases
- Other relevant considerations

Once identified as feasible, these options are to be assessed and compared from a financial point of view.

3.3 Identification of Stakeholders/Beneficiaries

All parties involved in the organisation and operation of CUMA are to be identified, as well as those affected directly and indirectly by the existence of the aerodrome.

The geographical scope of the CBA must also be determined. In the specific case of near-border military aerodromes, the mirror parties of the States concerned are to be taken into account.

In CUMA, stakeholders/beneficiaries could be identified as follows:

- Military authorities
- Civil Aviation Authorities
- Civil national and/or local authorities
- Civil aerodrome operator
- Air transport system
- Military aviation
- ANSPs (civil and military)
- Civil aviation operators
- Handling, support, catering, security providers
- Surrounding populations (jobs, environment, mobility, etc.)
- Local economy (companies, tourism, etc.)
- Others

3.4 Level of Detail of the Project

The level of detail of the project is to be decided on a case-by-case basis, in accordance with the magnitude and typology of civil operations allowed at the military aerodrome in question and the related required arrangements.

3.5 Cost Identification and Classification

A ‘cost’ may be defined as “the consumption of resources required as input for the system process during a given period, leading to an output in line with the objectives”.

In principle, CUMA should not be a burden on the military community. Where the military are providing services and support to civil aviation operations, specific costs in connection with the feasibility assessment, implementation, operations and maintenance relating to the various infrastructures, services, systems and personnel supporting civil aviation operations are to be identified and calculated to enable the related cost-recovery.

The following table indicates areas where it is likely that responsibilities and costs are to be shared between civil and military bodies.

3.5.1 Cost Areas

Cost Area	Details	Remarks
Air Navigation Services		
ATS	TWR or/and APP	Training of ATCOs if necessary
AIS	ARO functions (FPL filing NOTAM/MILNOTAM) AIP update	
MET	Forecast MET files	Aerodrome office
CNS equipment	• VHF communications (both 25 kHz and 8.33 kHz) • UHF communications (normally already in force) • ATN/VDL Mode 2 data link(*) • ILS (category 1 or 3 if LVP available and depending on the weather) or MLS(*) with full or partial approach lights) • VOR, DME, TACAN, LOCATOR • Satellite-based navigation aid: GBAS cat 1 or APV/Baro VNAV(*) • SSR Mode A, C Mode S • ADS-B if no radar available and low density area • Connection to SWIM • A-SMCGS (in case of LVP)* • Communications with adjacent national/international centres (*) where necessary because of the volume of traffic	Maintenance and normal operations
Charges	ANS and airport charges	
Supporting Services		
Bird & Wildlife Hazard		
Rescue and Fire Fighting Service	To cover the required ICAO standards	Training costs if necessary
Medical service	Structures, vehicles, personnel	
Maintenance of manoeuvring area (RWY, TWY & aprons)	Lighting system, surface and marking, visual aids	
Energy	Electrical consumption and heating	Power measurement and sharing
Manoeuvring area inspection		Number depends on the regulations of the State (civil)
Use of support equipment	Grass-cutting De-icing Ground handling (cargo, handling facilities, …) Aircraft washing	
Aircraft replenishing	Fuel, oil, sanitation. etc.	
Coordination & CDM		Coordination cell and CDM if appropriate
Environmental Protection		
Regular measurements	Noise exposure level, impact on surrounding population, particle emissions, …	Civil and military operations
Mitigating measures	Procedures and infrastructure	Noise abatement procedures, LAQ improvement procedures, double glazing, etc.
Waste disposal	Aircraft, personnel, terminal	
Security		
Protection of aircraft, ground equipment and personnel	Civil and/or military security services	For common areas or as required

Cost Area	Details	Remarks
Institutional Commitments		
Certification costs	When required	To be compliant with the civil regulations
Infrastructure	Apron, taxiways, runway, passenger terminal, access roads and car park, accommodation for air crews, hangars, workshops, stores, … Space for parking and long-term storage	Acquisition of property Passport immigration security controls, baggage claim area, …
Information technology	Technical support	Internet, ATM systems, etc.
Back-up system	Systems and procedures	Issue the procedures to be respected in terms of personnel and/or equipment in the event of failure of vital equipment
Statistics (KPI) office	Record and analyse civil and military operations as required Figures for charging	
Safety	SMS, runway incursion prevention, disaster management, etc.	
Impact Assessment		
Initial impact assessment	Environmental, technical, safety, business viability, …	
Cost-Benefit Analysis	Initial and in service, for modifications to be introduced	

3.6 Benefit Identification and Classification

The benefits in CUMA cannot be appraised generically since each military aerodrome has its own specificities and is subject to national arrangements. Moreover, benefits accruing from one or another issue can vary completely for the various stakeholders involved. For example, if extending operational hours at the aerodrome could be beneficial for a civil aircraft operator, it could represent an operational and/or financial burden for the military.

Therefore, it is recommended that the benefits for each stakeholder are identified in as much detail as possible. This would facilitate both a comprehensive and a specific (for each stakeholder, when deemed appropriate) CBA process.

The following table provides a generic list of the areas in which the benefits derived from implementing CUMA are to be identified and subject to analysis and quantification.

Beneficial Areas	Beneficial Issues
Society	New job and business opportunities
	Tourism
	Increased mobility
	Local industry
	Environment
	Rationalisation of existing structures and services
	Others
Civil Aviation	Operational benefits (in accordance with the typology and business model of the civil aviation operator, e.g. low-cost, cargo, business aviation
	Cost savings (fuel, charges, personnel, etc.)
	Increased choice of destinations
	Others
Military Aviation	Interoperability with civil aviation standards as required
	Upgradeability
	Training of personnel to operate in a mixed civil-military environment (ATCO, RFFS, Support, etc.)
	Others
ATM	Additional airport capacity
	Civil-military interoperability
	Delay reduction
	Additional destinations
	Flexibility
	Others

3.7 Investigation of Costs and Benefits

Once costs and benefits for all stakeholders/beneficiaries involved (or for a specific subject) have been identified, the assessment of costs and benefits is to be conducted.

All elements identified in the process are to be collated in a common database that should facilitate the required analysis. This database may have different sources: expert opinion, raw data, models, research, etc. and should prevent any interrogation regarding the relevance of the data by setting common rules on how to collect, count and store data (in the case of a comprehensive CBA).

Each area of identified costs, an example of which is listed in Chapter 3.5, is to be assessed.

For each identified item, the result of the assessment will indicate the value by which it can be considered as an advantage or a drawback for the bodies involved which have been identified.

3.8 Presentation and Interpretation of Final Results

The results of the CBA are to be properly presented to the decision-makers; this presentation can be given using a variety of different methods.

The most commonly used method is the Net Present Value (NPV) method but other methods might prove relevant in some cases, depending on the results that need to be shown to the decision-maker.

The NPV is defined as the total present value (PV) of a time series of cash flows. It is a standard method for using the time value of money to appraise long-term projects. It measures the excess or shortfall of cash flows, in present value terms, once financing charges have been met.

These appraisals should be supplemented by a sensitivity analysis that qualifies the resilience of the project to fluctuations in external factors. For instance, traffic forecasts, market prices, etc.

EUROCONTROL

www.eurocontrol.int