INTERNATIONAL CIVIL AVIATION ORGANIZATION

REPORT OF

THE FORTY-EIGHTH MEETING OF

THE EUROPEAN AIR NAVIGATION PLANNING GROUP

(Paris, 28 to 30 November 2006)

PREPARED BY THE EUROPEAN AND NORTH ATLANTIC OFFICE OF ICAO NOVEMBER 2006

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0. INTRODUCTION

Place and Duration

0.1 The Forty-Eighth Meeting of the European Air Navigation Planning Group (EANPG/48) was held in the European and North Atlantic Office of ICAO from 28 November to 30 November 2006.

Attendance

0.2 The Meeting was attended by 80 Members and representatives of 39 States and by observers from 7 international organisations. A list of participants is given at **Appendix A**.

Officers and Secretariat

0.3 Mr Dirk Nitschke, the Chairman of the EANPG, presided over the meeting throughout its duration. Mr Karsten Theil, ICAO Regional Director, Europe and North Atlantic, was Secretary of the meeting and was assisted by Mr Robert Kruger, Deputy Director, Mr Herman Pretorius from Headquarters, Mr Mohamed Smaoui from the MID Office, Mr Michel Beland, Mr George Firican, Mr Victor Kourenkov, Mr Elkhan Nahmadov, Mr Jacques Vanier, Mr Guillermo Vega, Mr. Andrei Ivanov, Mrs Nikki Goldschmid and Mrs Patricia Cuff from the European and North Atlantic Office.

Conclusions and Decisions

0.4 The EANPG records its action in the form of Conclusions and Decisions with the following significance:

- Conclusions deal with matters which, in accordance with the Group's terms of reference, merit directly the attention of States or on which further action will be initiated by ICAO in accordance with established procedures.

- Decisions deal with matters of concern only to the EANPG and its contributory bodies.

Agenda

0.5 The Group agreed to the following agenda for organising the work of the Meeting and the structure of the report:

- Agenda Item 1: Review of significant international aviation developments
- Agenda Item 2: Previous EANPG follow up
- Agenda Item 3: Aviation safety
- Agenda Item 4: Planning and implementation issues
- Agenda Item 5: Monitoring
- Agenda Item 6: Deficiencies
- Agenda Item 7: Any other business

1. REVIEW OF SIGNIFICANT DEVELOPMENTS

Serbia and Montenegro

1.1 The Group noted the division in May 2006 of Serbia and Montenegro into two sovereign States and that the rights and obligations under the ICAO Convention had been continued by Serbia. The Group was informed that the process of ratification of the ICAO Convention had been initiated by Montenegro and looked forward to welcoming colleagues from Montenegro as participants in the activities of the Group.

Bosnia & Herzegovina

1.2 The Group noted that in accordance with United Nations Security Council Resolutions 1575 (2004) and 1639 (2005) the Commander of the European Force (COMEUFOR) had the sole authority to establish rules and procedures governing command and control of the airspace over Bosnia & Herzegovina. The Group was informed that initiatives had been taken to transfer this authority to the Ministry of Communication and Transport of Bosnia & Herzegovina, thus enabling Bosnia & Herzegovina to assume all privileges and obligations resulting from the provisions of the Chicago Convention. The Group congratulated the parties involved in this development and expressed the hope that the transfer as planned would take place as soon as possible.

International organisations

1.3 The Group was informed that on 22 November 2006, the Council had decided to include Civil Air Navigation Services Organisation (CANSO) in the list of international organisations invited to attend selected meetings as observers. The Group congratulated the Council on its decision, as CANSO was seen as a valuable contributor to its activities, and requested the Regional Director to invite CANSO to meetings of the EANPG and its sub-ordinate bodies as appropriate.

Outcome of and follow-up on the DGCA Conference of Safety

1.4 The Group noted the outcome of the Directors General Conference on a Global Strategy for Aviation Safety (DGCA/2006), which was held in ICAO Headquarters, Montreal, on 20-22 March 2006 in support of Strategic Objective A - Safety. All documentation for the Conference, including the Summary of Discussions; the Conclusions and Recommendations; and the Declaration by the Conference, had been made available at

http://www.icao.int/icao/en/dgca/index.html

1.5 The Group noted that the Council of ICAO and the ICAO Secretariat had initiated a number of activities in follow-up on the Conference, and that information about these activities had been provided in the following State Letters:

- E 4/210.4-06/67 of 14 July 2006 informed about recognition as valid of certificates and licences of other States;
- AN 20/1, E 4/210.4-06/88 of 27 October 2006 informed about the development of the programme to support the ICAO Unified Strategy to Resolve Safety-Related Deficiencies; and
- E 4/210.4-06/92 of 27 October 2006 informed about recommendations of the Conference, requiring actions by States, and invited pertinent information to assist the Council in ascertaining progress in implementation.

1.6 The Group was informed that in accordance with the operative clause in paragraph 4 of the Declaration of the Conference, the European and North Atlantic (EUR/NAT) Office of ICAO had initiated a series of training courses in the implementation of Safety Management Systems (SMS). The first course had been held in Kyiv, Ukraine on 20-24 November 2006, and the second course – which was unfortunately already fully booked – would take place in the EUR/NAT Office on 12-16 February 2007. However, places were still available at the third course on 26-30 March 2007, which would also be held in the EUR/NAT Office in Paris.

1.7 Further training courses were currently being planned for Tashkent, Uzbekistan in May 2007 and in Yerevan, Armenia in September/October 2007, and requests from other States for training courses in 2007 were under consideration. Information about regional or sub-regional training courses in the implementation of SMS would be currently updated on

http://www.paris.icao.int/

1.8 The Group expressed its appreciation of the activities in follow-up on the DGCA/2006 Conference, at the global as well as at the regional and sub-regional levels, and invited States and international organisations to consider participation as appropriate in future courses in order to ensure harmonised implementation of safety management.

Outcome of and follow-up on ALLPIRG/5

1.9 The Group was informed that the Fifth Meeting of the ALLPIRG/Advisory Group (ALLPIRG/5) had been held at the ICAO Headquarters in Montreal on 23-24 March 2006. The Group had been represented at the Meeting by its Chairman and its Secretary. The Group noted that documentation for the Meeting, including the report, had been made available at

http://www.icao.int/cgi/goto_rao.pl?/icao/en/ro/allpirg/allpirg5/index.html

1.10 Information was provided about the review of the report of ALLPIRG/5 by the ICAO Air Navigation Commission on 23 May 2006 and by the ICAO Council on 13 June 2006. The reviews had resulted in an Action Plan that had been circulated to the participants in the Meeting by letter M 7/1-06/075 of 16 June 2006, which was made available to the Meeting.

1.11 The Group was informed about initiatives by the EUR/NAT Office in response to the action plan and noted the following status of the activities:

Conclusion 5/2 – Implementation of Global Plan Initiatives

Action had been proposed to the Group, which dealt with the proposal under agenda item 4.c) (paragraph 4.4.1 of the report refers).

Conclusion 5/4 – Application of the business case model for CNS/ATM Systems

Action was awaiting the training workshop mentioned in Conclusion 5/3.

Conclusion 5/5 – ICAO Global ANP database and GIS portal

The GIS portal had not yet been made available for use by the EUR/NAT Office.

Conclusion 5/7 – Environmental benefits of CNS/ATM Systems

This Conclusion would be kept in mind in future activities.

Conclusion 5/8 – Globally coordinated ATS Routes

The issue had been coordinated between the Asia/Pacific (ASIA/PAC) Regional Office in Bangkok, the Middle East (MID) Regional Office in Cairo and the EUR/NAT Office, and cooperation with EUROCONTROL had been initiated with regard to the development of an ATS Route Planning Database.

Conclusion 5/9 – TMA structure and area navigation

This was already part of the EANPG work programme.

Conclusion 5/11 – ATM safety management

Action had been initiated by European States in cooperation with the EUR/NAT Office as reported in paragraphs 1.6 - 1.8 above.

Conclusion 5/12 – Coordination between regional monitoring agencies

The issue had been coordinated between the ASIA/PAC, the MID and the EUR/NAT Offices, and it was intended to hold a "kick-off" meeting in the first quarter of 2007.

Conclusion 5/13 – Implementation of performance based navigation concept

This had already been taken into account in European implementation projects.

Conclusion 5/14 – A regional online database of air navigation deficiencies

Action had been proposed to the Group, which dealt with the proposal under agenda item 3 (paragraph 3.18 of the report refers).

Conclusion 5/15 – Last resort to resolve regional air navigation deficiencies

The procedure would be applied on a case-by-case basis.

Conclusion 5/16 – Implementation of VSATs

This had already been taken into account in European implementation projects.

Conclusion 5/18 – Changes to the Regional SUPPs (Doc 7030)

In consultation with ICAO Headquarters, the ASIA/PAC and the MID Offices, the EUR/NAT Office had initiated work to restructure the SUPPs and align the areas of application with those of the ANPs.

1.12 The Group noted with appreciation the work being done in follow-up on the ALLPIRG/5.

Status on revision of Terms of Reference for the EANPG

1.13 The Group was informed about the work on a revision of the Terms of Reference for the Planning and Implementation Regional Groups (PIRGs) that had been performed by a small ad hoc working group consisting of members of the Secretariat and the Air Navigation Commission in support of Strategic Objective D – Efficiency. It was noted that it had not been possible to table a report to Council and that the guidelines and rules of procedure (i.e. handbook) of each PIRG, including the status of observers and members, would have to be amended accordingly when new Terms of Reference would be approved by the Council.

1.14 With regard to Security, the ad hoc working group had found that such matters were very specific and therefore required very specific expertise and, as such, did not fit into the activities of the PIRGs. The Group expressed its strong support of that finding.

1.15 The Group noted the deliberations of the ad hoc working group with regard to safety and supported the finding that involvement of the EANPG in flight safety would require the setting-up of new sub-groups, involving a different expert representation from States and international organisations as well as additional secretariat support from the European and North Atlantic Office.

Single European Sky

1.16 The Group was informed about progresses made and foreseen deadlines with regard to the adoption by the European Commission of rules to implement the Single European Sky.

Developments in the EUR/NAT Office

1.17 The Group was informed that Mr George Firican, Regional Officer ANS Implementation, had been appointed Deputy Regional Director, effective 1 June 2007, when the position would become vacant after the retirement of the incumbent Deputy Regional Director, Mr Robert Kruger. The Group expressed its appreciation of the support and cooperation rendered to it by Mr Kruger and congratulated Mr Firican on his appointment.

1.18 The Group noted that on 21 August 2006, Mr Elkhan Nahmadov had taken a position as Regional Officer ANS Implementation, specialising in communication, navigation and surveillance (CNS). The Group congratulated Mr Nahmadov on his appointment.

1.19 The Group was also informed that the position as Regional Officer Meteorology would be vacated by the incumbent, Mr Guillermo Vega, on 7 January 2007. The Group expressed its appreciation of the support and cooperation rendered to it by Mr Vega.

1.20 In this context, the Group noted that the vacancy after Mr Vega was not expected to be filled immediately after 7 January 2007. From his position in the EUR/NAT Office, Mr Vega had not only been supporting the North Atlantic Systems Planning Group (NAT SPG) and the Group itself, but also the Middle East Air Navigation Planning and Implementation Regional Group (MIDANPIRG), and it was feared that the vacancy of the position over a longer period would lead to interruption of the planning and implementation activities of the three groups. Therefore, the Group invited the Regional Director to do his utmost to fill the position as soon as possible after 7 January 2007.

2. PREVIOUS EANPG FOLLOW UP

Airbus A380 Wake Vortex Study

Flight operations in difficult meteorological conditions and impact of wake turbulence

2.1 At the request of United Kingdom, the Group discussed recommendations from a group of experts (Steering Group) which, under the auspices of the United States Federal Aviation Administration (FAA), EUROCONTROL, the Joint Aviation Authorities (JAA) and an aircraft manufacturer (Airbus), had been examining the wake turbulence aspects of the Airbus A380 wake vortex.

2.2 In relation to the discussion on wake turbulence, the Group considered the information provided by the Russian Federation in relation to a wake vortex incident which was reported by Ireland and considered during EANPG/47 meeting. The Group was informed that prevailing weather conditions might have been a contributing factor in the incident reported by Ireland and that it was essential to provide flight crews with timely information on weather conditions as highlighted in the work being done under the European Commission's 6th Framework FlySafe project.

2.3 The Group agreed that the work of the group of experts should be embedded within the ICAO framework and that the mandate of the group should be expanded to review the separation criteria contained in Pans-ATM, Doc. 4444 and consider such issues as en-route separation criteria, separation criteria for super-heavy aircraft following a heavy one, and possibly the need to subdivide the medium category of aircraft considering the wide range of differences. Based on this discussion, the group agreed to the following:

EANPG Conclusion 48/1 - Wake vortex study

That ICAO be invited to:

a) seek to formalise the current work of the group of experts on wake turbulence within the ICAO structure to ensure that wake vortex issues are handled consistently in a global manner; and

b) address:

i) the absence of en-route separation criteria in ICAO Doc 4444 and, having regard for the circumstances of the severe incident that occurred in Irish airspace in 2005, consider that this omission should be addressed as a matter of urgency; and

ii) the lack of guidance on:

- the Super Heavy category following the Heavy Category in the final approach phase; and
- the relationship between the Super Heavy category and the Medium and Upper /Lower Medium in those States that have sub-divided the Medium Category.

Update and perspective on operations of UAVs outside segregated airspace

2.4 The Group expressed its gratitude to ICAO Headquarters for taking action on previous EANPG recommendations related to UAVs in inviting all interested States and organizations to discuss and coordinate their actions and developments related to UAV operations. The Group invited all parties who would be in a position to contribute to the process to accept ICAO's invitation to participate in the coordination meetings.

Timely comments on amendment proposals

2.5 The Group was provided with a listing of the States to which the ICAO Regional Office in Paris is accredited with an indication showing whether they have provided a response to amendment proposals to ICAO provisions circulated by State Letter between December 2005 and July 2006. Through the discussion, the Group reiterated the importance for States to provide timely comments on amendment proposals circulated by ICAO, including those related to Procedures for Air Navigation Services (PANS). The Group felt that timely comments could play a significant role in the early identification of implementation difficulties. The Group agreed to the following:

EANPG Conclusion 48/2 - Commenting on Amendment Proposals

That States be reminded of the necessity and the importance of providing timely comments on amendment proposals circulated by ICAO.

Status report on the implementation of previous Conclusions and Decisions of the EANPG

2.6 The Group was briefed on the status of the previous EANPG Conclusions and Decisions. Many of these were covered by the Council report, or by action to be taken in the current meeting. Following EANPG/48, the table for reporting the status of EANPG Conclusions was to be updated and made available to the EANPG Members.

Use of the EU location indicator

2.7 The Group was informed that the use of EU location indicator had been approved in principal. It was noted that the ICAO Regional Director would formalise the use through the re-submission of a proposal to amend the European Air Navigation Plan and inform the Group about the progress.

3. AVIATION SAFETY

Safety Management Systems

3.1 The group was provided with information highlighting the ICAO provisions relating to safety management in Annexes 6, 11 and 14, and the content of the ICAO Safety Management Manual (Doc 9859) published to assist civil aviation authorities and regulated entities in their efforts to implement safety management systems (SMS) in accordance with the harmonized ICAO Standards. The Group was also provided with an implementation evaluation guide and a detailed assessment checklist intended for to be used as a tool for States to implement SMS. The Group recognized that implementation of safety management systems could be a complex and lengthy undertaking and appreciated the tools and information provided. The Group agreed to the following:

EANPG Conclusion 48/3 - Safety Management Systems

That States be invited to:

a) use the ICAO safety management information and guidance material to develop their safety programme and implementation plan; and

b) disseminate, as far as practicable, the information within their own organizations as well as to the regulated entities.

ATM safety survey

3.2 The Group noted the results of EUROCONTROL ECAC ATM safety framework maturity study which is part of an initiative undertaken by EUROCONTROL since 2002.

3.3 The survey results provide a comparative overview regarding the extent to which ANSPs and Regulators in each State of the ECAC region have developed their safety management and safety regulatory frameworks. The survey results present a view of how States' frameworks are improving in maturity. The results are presented in an anonymous manner and provide a general picture across the ECAC area. The Group also noted that EUROCONTROL intends to conduct maturity surveys on an annual basis until 2009.

3.4 In recognising the importance of such a study, as it would allow a take of the "temperature" of the safety system in the Region, ICAO approached EUROCONTROL with the request to extend the scope of the survey to cover the whole ICAO EUR Region. EUROCONTROL responded favourably and a programme

was agreed together with the ICAO EUR/NAT Office, to include the remaining States in the EUR Region (which are not members of ECAC) in the 2007 exercise.

Regional safety initiatives

3.5 The Group noted that there had been no response to the initiative of the regional office inviting States to express their needs of assistance and inviting those States and organizations capable to provide assistance to come forward did not yield the expected results. In addition, the Secretariat did not systematically receive safety-related reports in sufficient number allowing for the analysis of the information, the identification of trends and for the initiation of appropriate action.

3.6 The Group was informed that the EUR/NAT Office discretely discussed specific safety deficiencies with individual States with a view to identify the most appropriate solution.

3.7 The Group also noted that a number of civil aviation authorities, specialised agencies and ICAO have established systems for collecting and tracking information on incidents, accidents and on situations affecting aviation safety and agreed on the importance of transparency and sharing of safety-related information which is a fundamental tenet of safety management system. The Group agreed that increased exchanged of information between data and information gathering systems established at either local, national, sub-regional, or regional level could lead to better harmonization of the different safety management systems implemented and could perhaps lead the way to the establishment of sub-regional or regional safety managements systems. The Group agreed that SMS implementation across all safety-related disciplines would not only increase the amount of safety-related information collected and made available for analysis but would also allow responsible managers to take action to mitigate the risks associated with identified hazards.

3.8 The Group was informed of the rapid progress made by ICAO in providing SMS training to State civil aviation authorities officers responsible to lead SMS implementation in their State. The Secretariat indicated that the first ICAO SMS training had been provided in Ukraine at the kind invitation of the State Aviation Authority in cooperation with the National Aviation University of Ukraine. In addition to the information related to the training already provided and that scheduled for the first quarter of 2007, the Group was reminded that States could invite ICAO to deliver SMS training to a specific State or Group of States. This offer is explained in State Letter AN 12/46-06/52 sent by the Secretary General in June 2006. The offer is conditional to the host State accepting to cover all expenses related to such training. It was pointed out to the Group that The Netherlands, Tunisia and Italy had coordinated with ICAO to host such training in 2007 and that discussions were currently held with other States.

3.9 The Czech Republic presented information regarding a 2nd Cabin Safety Symposium held in Prague, from the 7th to 9th June 2006. There were over 100 participants from many European countries, and also including were participants from USA, Canada and New Zealand. The ICAO EUR/NAT Office supported this symposium and participated as keynote speaker. The Chairman EANPG appreciated this important activity of the Czech Republic. A 3rd Symposium will be held in Cologne, Germany in 2008.

SMS implementation in the Eastern part of the Region

3.10 The Group considered the initiatives and proposals from the Regional Air Navigation Services Development Association (RADA) in relation to regional safety management (SMS) implementation in Air Traffic Management. RADA had already established milestones for the implementation of SMS and had started monitoring implementation. The Group appreciated the efforts and dedication of RADA in relation to SMS implementation in ATM and pointed out a possible duplication of efforts and activities between the work of a tasks forced established within Air Traffic Management Group - Eastern Part of the ICAO EUR Region (ATMGE).

3.11 The EANPG noted the positive role of the Regional Air Navigation Services Development Association (RADA) activity on implementation the ICAO 2005-2010 Strategic Objectives.

3.12 The Group welcomed the regional cooperative approach regarding the implementation and support of Safety Management Systems (SMS) in ATM within RADA area and Invited RADA to participate as a regular member in the work of the Safety Management Systems in ATS Task Force of the ATM Group for the Eastern Part of the ICAO EUR Region to optimize the use of resources. The group agreed to the following:

EANPG Conclusion 48/4 - Implementation of safety management systems (SMS) in ATM – Eastern part of the European region

That:

a) the Regional Air Navigation Services Development Association (RADA), its members and regulators participate and contribute to the work of the Air Traffic Management Group - Eastern Part of the ICAO EUR Region (ATMGE) task force on SMS implementation ; and

b) the Air Traffic Management Group - Eastern Part of the ICAO EUR Region (ATMGE) task force considers the activities of RADA members and the activities of their regulators in the development of its SMS sub-regional implementation plan.

3.13 On the basis of the information provided above, the Group also agreed to the following:

EANPG Conclusion 48/5 - Safety Management Implementation

That States in the ICAO European Region be encouraged to:

a) develop and implement, if they have not already done so, safety programmes requiring air operators, aerodrome operators and air traffic service providers to implement safety management systems;

b) use relevant ICAO (and EUROCONTROL) safety management system (SMS) implementation documentation;

c) undertake aggregated safety analysis at a national level;

d) if appropriate, use applicable certification process to verify if safety management systems met the established requirements and criteria; and

e) expedite the safety management training of their staff at the regulatory and regulated entities' levels, taking advantage of the SMS training offered by ICAO.

EANPG Decision 48/6 - Regional Aviation Safety Reporting

That the EANPG Programme Co-ordinating Group (EANPG-COG) be delegated the responsibility to:

a) identify a suitable standard format for reporting safety data in the European Region, taking account of any existing activities on the subject;

b) identify acceptable reporting mechanisms for State safety analysis data to be used in a future regional safety enhancement mechanism; and

c) report progress to EANPG/49.

EANPG Conclusion 48/7 - Safety Management Systems (SMS) Information and Guidance Material

That, the ICAO Regional Director, in coordination with international organisations and States, explore how best to provide, in Russian language, States in the Eastern part of the ICAO EUR Region:

a) relevant safety related EUROCONTROL documents, and

b) information on best practices regarding the implementation and functioning of ATM SMS used in other European States.

3.14 The Group noted the offer of EUROCONTROL to translate the existing six EUROCONTROL Safety Regulatory Requirements (ESARRs) into Russian.

ATM safety reporting in Europe

3.15 The Group was presented with the results of a survey performed by EUROCONTROL which investigated the difficulties associated with the implementation of ATM Safety Occurrence Reporting in Europe. The survey identified a number of cultural and legal issues considered to be impediments to such reporting. The survey also revealed that legislation was crucial to the development of aviation safety in general and of "just culture" in particular. The legislative framework supporting some States' aviation systems had not always been perceived as adequate.

3.16 The survey highlighted concerns about inappropriate judicial intervention (and possible ensuing criminal proceedings) in safety investigations that do not necessarily relate to unlawful actions, misbehaviour, violations or gross negligence. A emerging finding from the survey was that cultural issues, alongside the legislative framework, play a vital role in establishing an effective safety reporting system. Other issues such as the role of the media in sensationalising safety occurrences emerged as additional impediments in the survey.

3.17 The survey report also identified a number of possible steps which could assist States in their efforts to improve their own safety reporting systems. The report concluded that "just culture" within an appropriate legislative framework remained a key factor for the establishment of an effective reporting system and that States and service providers needed strong support to back their efforts to initiate appropriate legislative changes, to foster a just culture environment in order to implement effective reporting systems. On the basis of the information provided, the Group agreed to the following:

EANPG Conclusion 48/8 - ATM safety reporting in Europe

That States be encouraged to:

a) update their legislation to support a "just culture" as part of their safety programme; and

b) develop and implement non-punitive reporting mechanisms as part of their safety programme.

Air navigation deficiencies regional database

3.18 The Group considered the conclusion agreed by the Fifth Meeting of the All Planning and Implementation Regional Groups (ALLPIRG/5) in relation to uniform methodology for the identification, assessment and reporting of air navigation deficiencies. The Group considered the information concerning an online database of air navigation deficiencies that had been developed by the CAR/SAM Region. The Group acknowledged that such a database, in addition to providing transparency, would provide timely updated information in a standardized format and that it should be considered for implementation in the region based on existing reporting systems and databases.

3.19 The Group agreed to the following

EANPG Decision 48/9 - Regional online database of air navigation deficiencies

That the Programme Coordination Group (COG) establish and maintain a regional database of air navigation deficiencies that ensures transparency and provides a secure access to authorised users.

Use of standard phraseology

3.20 The Group recalled that ICAO had developed and published standard radiotelephony (RFT) phraseology which should be used in all situations for which it was specified (Annex 10, Volume 2, paragraph 5.1.1.1 refers). Use of a standard phraseology was considered essential in preventing accidents and improving safety and efficiency.

3.21 The Group noted that EUROCONTROL had recently issued the European Action Plan for Air-Ground Communications Safety (EAPAGCS). The plan called for national authorities to consider ensuring that regular flight crew proficiency checks covered air-ground communications safety issues. These proficiency checks should be assessed against a common standard for RTF among EUROCONTROL and Joint Aviation Authorities (JAA) member States because several States notified differences to ICAO standard phraseology. The EAPAGCS also encouraged operators to develop best practice for RTF procedures and phraseology.

3.22 In addition, National Air Traffic Services (NATS) in the United Kingdom had gathered data showing that 25% of all level bust and 40% of all runway incursions were caused by communication error. The Civil Aviation Authority of the United Kingdom had proposed to JAA that, to improve air safety through the introduction of a common standard of radiotelephony, pilots should be checked during the recurrent training. It was noted that the situation in JAA member States was that pilots were examined against the ICAO Standards under the Joint Aviation Requirements (JAR) for Flight Crew Licensing (FCL), but then expected to operate to a national standard , even if such standard differed from ICAO Standards.

One language – one environment

3.23 The Group was informed that the issue of "one language – one environment" was raised and actively discussed at the ICAO Regional Workshop on Language Proficiency Requirement Implementation held in Paris from 6 to 7 September 2006. The summary report of this Workshop was published on the ICAO European and North Atlantic Office Website at www.paris.icao.int .

3.24 It was noted that participants in the above-mentioned workshop had agreed that the aviation community recognised that communication problems are contributing factors in many aviation accidents and incidents, including runway incursions and level busts. In this respect, the use of different languages in the same environment during international operations could interfere with communication by creating misunderstanding, confusion or mistakes and could result in ambiguities and hazards for aviation safety. In

practice, this meant that pilots and air traffic controllers should have the capability to achieve mutual understanding through the use of one language in the same environment.

3.25 It was also noted that in some States of the ICAO European Region air traffic services were provided through the use of two languages: national and English. However, the use of more than one language in the same environment could lead to a lack of situational awareness for flight crews who do not understand the other language(s) used for radiotelephony in that airspace.

3.26 It was agreed that the establishment of a single-language radiotelephony environment that would rely only on the English language, based on the new ICAO language proficiency requirements could improve the communication effectiveness and would therefore significantly contribute to the overall level of safety.

3.27 At the same time the Group understood that the establishment of such a single-language environment could be challenging for some non-native English-speaking States in the ICAO European Region. However, the initial phase of this process could start from the implementing measures that either require or encourage the use of English language only, at least in busy international sectors and airports.

3.28 Accordingly, the Group agreed, in support of the Strategic Objective A – *Safety* on the following:

EANPG Conclusion 48/10 - Use of one language and standard ICAO phraseology in the same environment

That:

a) States emphasise the importance of the use of standard ICAO phraseology in aeronautical communication to air traffic services personnel and to flight crews;

b) States be invited to welcome the assessment by flight crews and/or aircraft operators of the use of the English language in busy sectors and airports serving international flights, whenever possible; and

c) ICAO identifies means to provide assistance and advice appropriate to those States who would be willing to, and who would experience difficulties in, implementing a single-language environment in busy sectors and airports serving international flights.

4. PLANNING AND IMPLEMENTATION ISSUES

Global Plan Initiatives

4.1 The Global Plan Initiatives (GPIs) contained in the revised Global Plan had been developed by the Air Navigation Commission on the basis of an industry roadmap which was aimed at bringing short and medium term benefits to aircraft operators, taking advantage of currently available aircraft capabilities and ATC infrastructure and technology.

4.2 The industry roadmap was integrated into the Global Plan taking into account the already existing work programmes as embodied in the regional plans. The integration also took into account the need to ensure interoperability and seamlessness of the global air navigation system. The GPIs should be seen as supporting "tools" for the regional office in its work toward its own performance objectives.

4.3 **Appendix B** provides an executive summary of the status of the Global Plan GPIs implementation in the European Region. A full description of the GPIs is provided in Chapter 1 of the Global Plan. The Chart provide a clearer picture of the "performance objectives" required for the European Region linked to the Global ANP Initiatives and their respective current status and implementation schedule. The proposed document can serve as a living document, providing an ongoing summary of the status of the Global Plan GPIs in the European Region.

4.4 It was noted by the Meeting that the progress of European SESAR programme and its operational concept developments should also be closely monitored to be timely and orderly reflected in the ICAO EUR/NAT GPIs implementation chart.

EANPG Conclusion 48/11 - Global ANP Initiatives

That ICAO continue to keep abreast of all developments related to GPIs implementation in the region in order to provide regular updates to the GPIs implementation chart to ensure its “living document” status.

Revision of the regional air navigation planning philosophy

4.5 The global ATM operational concept, as endorsed by the Eleventh ICAO Air Navigation Conference, should form the basis for the coordinated implementation of CNS/ATM technologies and progression to a more global and interoperable ATM system. The key to the philosophy adopted within the operational concept was the notion of global information utilization, management and interchange. This should be seen as the enabler of significant change in the roles of all participants within the ATM system, which would facilitate enhancements in safety, economy and efficiency across the ATM system.

4.6 The basis of developing a global, integrated ATM system should be an agreed structure of homogeneous ATM areas and major international traffic flows. These areas and flows should be seen as the thread tying together the various elements of the world-wide aviation infrastructure into a global system; several of these are listed as GPIs in the Global Plan. Further identification of these areas and traffic flows should be carried out by PIRGs in collaboration with the aircraft operators, reflecting the latter's requirements and should assist the PIRGs in determining the international CNS/ATM systems infrastructure necessary to support the implementation of the homogeneous ATM areas and major international traffic flows.

4.7 Considering the communications, navigation and surveillance elements of the CNS/ATM systems infrastructure to support air traffic management, the Group noted that it was necessary for each region to first ascertain the ATM objectives for a given homogeneous ATM area or major international traffic flow, then determine which of the CNS elements were needed to fulfil those objectives, followed by an assessment of the technical elements and implementation options that would most appropriately and cost effectively meet the ATM objectives for that area or traffic flow. Based on the above, PIRGs thus were responsible for the integration and harmonization of CNS/ATM systems plans for their various regions, while ICAO, through this Global Plan, ALLPIRG meetings, world-wide conferences, and an interregional co ordination mechanism, should carry out the interregional co-ordination to ensure global compatibility, harmonisation and seamlessness of the systems.

4.8 With respect to ATS route planning, the “classical” ATS route planning process, based on the assumption of “from”—“to” supporting ground navaids system, was incompatible with the current realities. This conventional approach implied a comprehensive coordination process and agreement at regional level as it envisaged investments in the ground infrastructure and cost-recovery planning. The Group noted that the development of new technologies, the new ATM operational concept and the new environment in which airspace users were evolving required a new approach. Concepts like major traffic flows, homogenous area, dynamic route management, flexible use of airspace, required navigation

performance, area navigation etc. introduced a new perspective and new requirements in the planning process and had to find their right place in the Regional ANPs. In addition, flexibility and increased responsiveness became key words when trying to respond to airspace users' needs. A significant revision of the current Regional ANPs philosophy was therefore required in order to reconcile it with the ATM operational concept, the new Global Plan provisions and the new ICAO business planning processes.

4.9 The Group agreed that the current ATS route planning process was a very cumbersome exercise, requiring each time a formal process of amendment to the Air Navigation Plan (Volume 1), which may no longer serve a worthwhile purpose as it did not meet the needs of States and airspace users. In the new and rapidly changing environment, handling the planning of a detailed (and rigid) ATS route network became a very difficult, almost impossible, task to conduct appropriately with the available tools at the level of Regional Offices and was an obstacle to fulfilling the requirements of Strategic Objective D - *Efficiency*. This was mainly due to the significant amount of work required to cope with the changes and to the reluctance of States and airspace users to comply with the existing procedures which no longer met their needs.

4.10 Under the current realities, once the navigation requirements have been identified and agreed over a specific area (homogenous areas and/or a major traffic flows) they would suffice to define the ground infrastructure needed to allow, in principle, for the establishment of any acceptable route network in that area, offering, at the same time, the flexibility expected by the operators and ensuring a dynamic response to their demands. Under this new vision, the core of the ATS route planning process should be simplified and freed from a long and cumbersome formal approval process outside the Region. It was necessary, nevertheless, that the planning process remains within the ICAO regional machinery using new supporting technologies.

4.11 It was concluded that the current amendment process, existing format and content of the regional ANPs therefore did not meet the need of States and users and were inconsistent with the new requirements set-up by the ATM operational concept and the Global ANP. A significant revision of the current regional ANPs philosophy was required in order to reconcile it with the ATM operational concept, the new Global Plan provisions and the ICAO new business planning processes. Additionally, the work of PIRGs would need, as well, to be transitioned to the new processes to incorporate the Global and Regional Plan Initiatives in the regional planning process and to revise regional planning documents as appropriate.

4.12 In order to address the issues identified above and to develop a methodology to streamline the European air navigation planning process, the following line of action was proposed to the EANPG:

a) incorporate in the ANP Volume 1 the relevant elements of the Global Plan and the evolving ATM operational concept;

b) put relevant route planning details in the ANP Volume 2 in a format consistent with the ATM operational concept and the Global Plan;

c) identify and use available technologies to support this process.

4.13 On the basis of the above, the EANPG agreed that the COG should be delegated the task to review the EUR Regional Air Navigation Plan (ANP) in order to reconcile the ANP Volumes I and II with the relevant elements of the Global Plan and the evolving ATM operational concept.

EANPG Decision 48/12 - Review the European Regional Air Navigation Plan

That the EANPG Programme Coordinating Group (COG) be delegated the responsibility to:

a) carry out a review of Volumes I and II of the EUR ANP with a view to reconcile relevant elements of the ATM operational concept and the Global ANP provisions;

b) develop a new format of the EUR Regional ANP for review by the EANPG; and

c) report progress to the EANPG/49.

Review of ICAO Provisions relating to ATS Route Planning

4.14 The EANPG noted the urgent need for a rationalisation of the definition of "regional and non-regional" ATS route networks in the current ICAO provisions (Annex 11, Appendix 1 refers) as well as the fact that updates to the relevant parts of the EUR ANP were necessary, particularly concerning the use of Note 6 ("Air traffic advisory service provided-may be supplemented by radar monitoring later"). This Note could be considered an exception when compared to other ICAO Regional Plans and could no longer serve any purpose in the current route planning process.

4.15 With the view to ensure the standardisation of route descriptions in Table ATS-1 with other Regional Plans, and to achieve the currency and relevance in other aspects, (i.e. upper and lower separation of ATS routes, State abbreviated codes, geographical orientation of the uni-directional use of routes, etc.), the ICAO Secretariat was required to undertake a review of all relevant ICAO documentation which concerned ATS route planning. In order to address the need to review specific ICAO provisions related to ATS route planning, the EANPG endorsed the following Conclusion:

EANPG Conclusion 48/13 - ICAO Provisions related to ATS Route Planning

That:

a) the ICAO Regional Director, on behalf of the EANPG, initiate a proposal for amendment to update Part V-ATM of the EUR ANP related to ATS route planning; and

b) ICAO consider a review of Annex 11, Appendix 1, with the aim of clarifying the continued need for the distinction between regional and non-regional networks of ATS routes.

Coordination of CNS/ATM Transition Plans for the Eastern Part of the ICAO EUR Region

4.16 The Group was informed that as a follow-up to the update of the Air Traffic Management Group - Eastern Part of the ICAO EUR Region (ATMGE) Task List/Action Plan, which resulted from the evaluation and retention of 6 out of the 23 Global Plan Initiatives (GPI) (the ICAO State letter AN 13/54-06/15 regarding the proposal to amend the Global Air Navigation Plan for CNS/ATM (ICAO Doc 9750) affecting the Chapters 1, 2 and 3 of the Global Plan refers), the COG noted that the ATMGE set up a task force to carry out quality analysis and coordination of the CNS/ATM Transition Plans of the States of the Eastern part of the ICAO EUR Region.

4.17 The RADA representative welcomed the information provided by the Secretariat and advised the meeting that a sub-regional CNS/ATM transition plan for the area covered by its members was already developed. This plan would be made available to ATMGE for consideration in its work. RADA also expressed their availability to contribute to the future work of the ATMGE task force dealing with the CNS/ATM transition planning activities for the States in the Eastern part of the ICAO EUR Region. EANPG acknowledged with gratitude the offer made by RADA.

4.18 In order to carry out its new tasks in terms of effective conduct of full-scale national plan coordination activities, the ICAO Secretariat was requested to invite States of the Eastern part of the Region to recommend participation of experts from their States in the task force's activities.

4.19 Additionally, in order to increase awareness and the sharing of available information, the ICAO Secretariat was also requested to consider organising a seminar/workshop on implementation of

CNS/ATM systems and air navigation planning for the regulators and service providers of States in the Eastern part of the Region.

4.20 In the same vein, the ICAO Secretariat was invited to explore ways in which translation into Russian language of relevant EUROCONTROL documentation (e.g. those related to the implementation of flexible use of airspace) could be accomplished. In this respect, RADA offered their full support by providing a series of documents already translated in Russian and by participating in the future work of ATMGE, as required.

4.21 In considering the above, EANPG endorsed the following Conclusion:

EANPG Conclusion 48/14 - Coordination of CNS/ATM Transition Plans – Eastern Part of the ICAO EUR Region

That:

a) States in the Eastern part of the ICAO EUR Region be invited to inform the ICAO Regional Director of their nominated national experts who will participate in, and coordinate at State level, all activities aimed at the implementation of the ICAO CNS/ATM Transition Plans; and

b) the ICAO Regional Director:

i) in coordination and with support from international organisations and States, organise a seminar/workshop on implementation of CNS/ATM systems and air navigation planning for the regulators and service providers of States in the Eastern part of the ICAO EUR Region; and

ii) consider how best the translation into Russian of the relevant documents on the issue of transition to the CNS/ATM systems could be achieved.

Northern Trans-Regional Coordination

4.22 The Group was informed on the outcome of the Forty-First Meeting of the North Atlantic Systems Planning Group (NAT/SPG/41), regarding the air-to-ground communication constraints over the high seas areas of the Arctic Ocean and the need to transit between the Annex 2 compliant flight level allocation system (used by Canada, Iceland and the United States) and the non-compliant system used by the Russian Federation in Murmansk and Magadan Flight Information Regions (FIR). The NAT SPG/41 noted that these issues had previously been addressed, *inter alia*, by the Russian-American Co-ordinating Group for Air Traffic Control (RACGAT), which had worked very effectively and productively in the past but had not met for over a year.

4.23 In this respect, NAT SPG/41 invited the Russian Federation, the United States and other stakeholders to take all necessary steps to ensure the continuation of RACGAT meetings before the end of the year 2005 (NATSPG Conclusion 41/1 refers).

4.24 Since NAT SPG/41, significant changes took place in the Russian Federation Civil Aviation Administration and therefore it was not possible to convene a RACGAT meeting. These changes concerned the establishment of the Federal Air Navigation Authority (FANA) on 5 September 2005. FANA, a specially authorised federal body of executive power and subordinated directly to the Government of the Russian Federation would carry out the following functions:

- state regulation, control and oversight in the field of utilisation of the Russian Federation's airspace;
- provision of state services in relation to air navigation servicing of users of the Russian Federation's airspace;
- establishment of a unified aerospace search & rescue system;
- certification of types and aids to navigation, air traffic control facilities as well as production means thereof;
- establishment of air navigation charge rates and collection procedures, disposal of revenues from the above charges; and
- issuance of over-flight permissions for foreign aircraft operation through the Russian Federation's airspace and crossing the state boundary of the Russian Federation.

4.25 It was noted that a continuation of the "historical" RACGAT meetings would be highly improbable, considering the changes that affected/affects the Russian Federation Civil Aviation Administration. These changes had made the provision of the RACGAT Memorandum of Understanding of 1992 obsolete.

4.26 Although the RACGAT meeting, as requested by NAT SPG/41, was not held, several other meetings took place to discuss issues of interest in the area.

4.27 In this respect, a Special ATS Coordination Meeting Cross-Polar and Russian Far East ATS Routes was held in Bangkok, Thailand, from 15 to 16 November 2005. The meeting reviewed the existing operational and technical aspects related to the increase in traffic on the Cross-Polar and Russian Far East routes and was attended by 34 experts from China, Mongolia, Russian Federation, United States and IATA.

4.28 Secondly, a series of the Trans-East and Polar Track ATS Providers Meetings had been held in Anchorage, Alaska from 14 to 16 March 2006 and from 25 to 27 September 2006 at ICAO Offices in Montreal, Canada. These meetings had the objective to implement procedures and technologies to ensure maximum utilisation of the Russian Far East and Polar routes, addressed daily operational issues between the parties and continued improvement in coordination and capacity building. The September discussions included Russian proposals for two new Polar routes with entry/exit points in Anchorage FIR, implementation of technologies such as Controller-Pilot Data Link Communications (CPDLC), Automatic Dependent Surveillance - Broadcast (ADS-B) and implementation of Reduced Vertical Separation Minimum (RVSM) in China and Russia. The second meeting of this operational working group included participation from U.S., Icelandic, Canadian and Russian Air Traffic Services organizations, and airlines. The group was scheduled to meet again in the spring of 2007.

4.29 The Group recalled the successful outcome of the ICAO Informal Trans-Asia/Trans-Siberia/Cross Polar Routes High Level Steering Group (ITASPS) and its Contributory Working Group (ICG). Their meetings, held from 1998 to 2001, co-ordinated the requirements of international civil aviation for a coherent and economically viable and operationally optimal structure of ATS routes, linking city-pairs in Europe and Asia, Europe and North America and Asia and North America. The ITASPS Group promoted improvements for the safety and efficiency of the Trans-Asia/Cross-Polar route structure and the supporting ATM systems within the States affected, based on the existing IATA Trans Siberian Route Study, which was expanded and complemented to adequately cover the Cross-Polar element.

4.30 It was noted that aircraft operators underlined their continued need for improvement of the route structure and supporting infrastructure in the area. In this respect, several issues have already been identified as requiring continued attention, as follows:

a) opening of more routes and improved efficiency of the current routes;

b) implementation of RVSM in Russian Federation and China;

c) improvement of the ATC coverage and hours of operations;

d) ACC consolidation;

e) development of improved ATFM tools that can be shared amongst States;

f) communications in the Northern Airspace;

g) airport availability for ETOPS aircraft;

h) improved access to China airspace;

i) simplified and more flexible access requirements to the Russian airspace (form "R").

4.31 To continue the work already done and respond to the new requirements for increased efficiency and further developments, the FAA and FANA participated in the Trans-East and Cross Polar ATS Providers Group. This group accepted the above tasks and given that the RACGAT had not met for some time, the FAA and FANA agreed to dissolve RACGAT. However, since a co-ordinated effort of the international civil aviation community was required to implement future requirements and efficiencies that would involve States and Organisations from four of the ICAO Regions (EUR, ASIA, NAT and PAC), the establishment of a Trans-Regional Airspace and Supporting ATM Systems Steering (TRASAS) Group was therefore proposed. TRASAS would work under the auspices of ICAO and be composed of representatives with operational and technical expertise from Canada, China, Democratic People's Rep. of Korea, Denmark, Finland, Iceland, Japan, Mongolia, Norway, Republic of Korea, Russian Federation, United States and from international organisations (e.g. IACA, IATA, IBAC, IFALPA). The proposed draft Terms of Reference are attached at **Appendix C**.

4.32 The Group was informed that the FAA and FANA officials agreed that cooperation on airspace issues was still critical; therefore, the FAA and FANA agreed to support the Trans East and Cross Polar ATS Providers Group and instructed their provider organizations to participate in its meetings.

4.33 Furthermore, the Russian Federation and US expressed their interest to participate in the work of the proposed TRASAS as a high level steering group, which would be able to follow up on the strategic issues of the former RACGAT group.

4.34 In order to continue work on improvement of the route structure and supporting infrastructure in the interface area of four of the ICAO Regions: EUR, ASIA, NAT and PAC, the EANPG endorsed the following Conclusion:

EANPG Conclusion 48/15 - Trans-Regional Airspace and Supporting ATM Systems Steering (TRASAS) Group

That:

a) the ICAO Regional Director continue the required co-ordination process in order to organise the first meeting of TRASAS in the first half of 2007, and

b) States concerned support the initiative by participating in the work of TRASAS.

Procedures for Use of A-SMGCS and Reduced Visibility Conditions in the Aerodrome Control Service

4.35 The Group took note that the Airspace and Navigation Team (ANT) of EUROCONTROL developed draft air traffic control (ATC) procedures regarding the use of A-SMGCS (Level 1 and 2) and related low visibility operations. These procedures had been developed in close co-operation with the EUROCONTROL A-SMGCS Project of the EATM Airport Operations Domain (AOP) and were proposed to be incorporated in the EUR Regional Supplementary Procedures (ICAO Doc 7030).

4.36 After five years of development, A-SMGCS Levels 1 & 2 has now reached maturity, with implementation underway at many airports within Europe, as well as Asia, North America & the Middle East. The development of A-SMGCS Levels 1 & 2 should be seen as a good example of the strong cooperation between the European Commission and EUROCONTROL in support of ICAO. This cooperation would continue, ensuring that the operational requirements for A-SMGCS described in the ICAO A-SMGCS Manual would be advanced to implementation, for the benefit of European & global ATM.

4.37 The Group recalled the A-SMGCS various levels functional descriptions as follows:

Level 1 – The A-SMGCS Level 1 intends primarily to enhance safety and efficiency of ground surface operations through the introduction of the surveillance service.

The main objective is to enhance ATM operations, in particular visual surveillance (performed in SMGCS) by an automated system capable of providing the same level of service in all-visibility operations.

Level 1 surveillance forms a pragmatic and basic first step in A-SMGCS implementation, allowing the progressive introduction of other A-SMGCS services such as Control and Guidance.

Level 2 – A-SMGCS level 2 aims at complementing the A-SMGCS surveillance service (Level 1) with a control tool whose objective is to detect potentially dangerous conflicts in order to improve safety on runways and protect restricted areas.

A-SMGCS Level 2 provides to ATCOs a traffic situation picture (like at level 1) associated to a safety net capable of detecting potential conflicts. Vehicle drivers may also be provided with a guidance tool assisting them in navigating their vehicles on the airport movement area. This service, in the context of the EUROCONTROL A-SMGCS Project, is optional.

Level 3 (i.e.: Level 2 plus a routing guidance function) and Level 4 (i.e.: Level 3 plus a routing control function) could be the subject of future activities within the AOP Domain.

4.38 The Group noted the significant amount of related validation activities that had been completed and supported the proposed procedures, although some remaining validation activities were expected to be completed only by the end of 2006. The draft provisions proposed at **Appendix D** were evaluated and approved the by Fortieth Meeting of the Airspace and Navigation Team (ANT/40) of EUROCONTROL Meeting 31 May – 2 June, 2006 and by the EUROCONTROL Stakeholder Consultation Group (SCG) in October 2006.

4.39 In supporting the use of A-SMGCS, a review of the existing ICAO provisions related to low visibility operations, the ANT of EUROCONTROL also developed several procedures (**Appendix E** refers) intended to improve the existing definitions and terms associated with low visibility procedures and make a unambiguous reference to the use of A-SMGCS by ATC (as a substitute for visual observations). In this way, it was expected that the draft proposed procedures would bring clarification in respect of the terminologies associated with the visibility conditions, low visibility operations and CAT II/III low visibility procedures.

4.40 In the course of the development of the proposed procedures, the requirements for consistency with the ICAO EUR Doc. 013: "*European Guidance Material on Aerodrome Operations under Limited Visibility Conditions*", were fully considered. In this context, the Chairman of the AWOG PT/LVP participated in the development of this material and it was expected that the content of the ICAO EUR Doc. 013 would be updated accordingly.

4.41 The Group endorsed the following Conclusion:

EANPG Conclusion 48/16 - Proposal for amendment of EUR SUPPS, Doc 7030 regarding the procedures for the use of the A-SMGCS in the aerodrome control service and in reduced aerodrome visibility conditions

That the ICAO Regional Director, on behalf of EANPG, submit to ICAO HQ the draft proposals for amendment to the EUR SUPPS, Doc 7030 on the subject of the use of A-SMGCS in the aerodrome control service and for the use of A-SMGCS in reduced aerodrome visibility conditions as presented in Appendices D and E of this report.

Mode S Transponder operating procedures

4.42 A proposal to amend the ICAO PANS-OPS – Doc 8168 on the subject of Mode S transponder operating procedures did not meet the agreement of France and IATA. The Group agreed that the proposal should be further developed and presented at a next opportunity.

Centralized Code Assignment and Management System (CCAMS)

4.43 The Group was reminded of the previously reported to EANPG, questions and concerns related to the ability of the current static SSR code allocation to effectively prevent delays caused by code shortages. Experts had monitored and studied these issues, coming to the conclusion that the only viable option was the introduction of a more dynamic methodology, using a centralised code assignment and management system.

4.44 Significant SSR code shortages had been predicted to start occurring around 2008, but several States were already reporting code shortages as early as 2005. A Centralised SSR Code Assignment and Management System (CCAMS), implemented across the entire IFPS, would eliminate the threat of code shortages, removing a potential limiting factor for future growth in European air traffic levels.

4.45 Based on findings from different studies, at a Special meeting of the EUROCONTROL Airspace and Navigation Team (ANT), dedicated to the development of a CCAMS, (held 1 Sep, 2006), the members of ANT agreed to the implementation of a CCAMS, to be co-located with CFMU, capable to serve the entire IFPS zone, to be executed in terms of a sliding area of applicability. The recommendations stemming from the Special ANT discussions were submitted to the Stakeholder Consultation Group (SCG) which, in light of the constraint to growth generated by the shortage of Mode A codes, agreed to recommend to the Provisional Council to approve the implementation of CCAMS co-located with CFMU, capable of serving the entire IFPS, along a three phase "sliding window" transition strategy.

4.46 The SCG recommendations had been submitted to and supported by other high level working arrangements in the Agency, such as: Chief Executive Standing Conference (CESC), Civil-Military Interface Standing Committee (CMIC) and the European ATFM Group (EAG).

4.47 At their 27th meeting, the Provisional Council of EUROCONTROL, confirmed its support for a step-by-step implementation of a Centralised SSR Code Assignment and Management System (CCAMS), and agreed to the implementation of the next phases of CCAMS on the understanding that military requirements be given sufficient consideration and that States continue deploying Mode S without delay.

4.48 EUROCONTROL clarified that CCAMS was being developed as an effective mitigation against the persistent risks of SSR Mode A code shortages. At the outset of its operations (2008-2012), it was calculated that CCAMS would require 2300 Mode A codes in order to operate efficiently (remaining codes to be used for local purposes). For operations beyond 2012 more codes could be required, but improvements which would be expected, in terms of improved CCAMS operating algorithms (developed as an outcome of operational experience to be gained) would provide the additional capacity without having to add more codes. CCAMS operations were expected to be able to continue as long as Mode A codes would be used.

4.49 In this respect, the development of technical specifications for the system and of the modelling and simulations of transitional operational aspects were progressing according to initial plans presented to EANPG/47. To ensure a successful observance of the proposed time schedule, a close consultation and coordination process with all the States and ANSPs involved in the CCAMS implementation would be required. As such, the process would initially focus on ANSPs from Participating Areas (PA) EUR-D and EUR-E with the aim of confirming and consolidating the implementation steps leading to live operations in the parts of IFPZ covered by PA EUR-D and EUR-E.

4.50 Based on the recommendations of the SCG, supported by the CESC, the CMIC and the EAG and the agreement of the Provisional Council (Nov. 2006), the Group endorsed the following Conclusions.

EANPG Conclusion 48/17 - Mode S Deployment

That States continue deploying Mode S without delay.

EANPG Conclusion 48/18 - Centralised Code Assignment and Management System (CCAMS)

That the EUROCONTROL Agency be invited to manage, in coordination with States and ANSPs, the development and a step-by-step implementation of a CCAMS, so that CCAMS together with ORCAM can provide a short to medium-term solution to prevent SSR code shortages becoming a potential limiting factor to future growth in European air traffic levels.

SSR Codes in the ICAO MID Region

4.51 The meeting noted that the MIDANPIRG ATM/SAR/AIS SG/8 meeting held in Muscat, Oman from 20 to 23 November 2006 has addressed the issue of shortage of SSR codes in the MID Region and the difficulties encountered in the interface area between the ICAO EUR and MID Regions. MIDANPIRG ATM/SAR/AIS SG/8 meeting agreed to the establishment of a Study Group, to cater for the various issues related to the SSR code duplication and other problems associated with the allocation and shortage of SSR Codes. The Study Group would consider the possibility of implementation of the Participating Areas (PAs) concept in the MID Region, in accordance with the ORCAM principles.

Prolonged Loss of Communication

4.52 EUROCONTROL introduced the Group with a paper regarding a proposal for amendment of the ICAO Procedures for Air Navigation Services – Air Traffic Management (PANS-ATM, Doc 4444) related to the communication failure procedures to take into account cases of prolonged loss of communication (PLOC or COMLOSS).

4.53 The Group noted that after 11 September 2001, any loss of communication implied a second significance beyond safety, as it was contributing to uncertainties regarding possible acts of unlawful interference. Due to the possible security aspects of a PLOC, it was considered necessary to develop an amendment to the relevant provisions of PANS-ATM to take into account the possibility that an aircraft

could be the subject of an unlawful interference. In this respect, it would be essential to inform, and to keep informed, the appropriate authorities about all actions taken by the aircraft concerned and by air traffic control.

4.54 The Group recalled that in a communications failure situation, an air traffic controller should follow the relevant provisions of the ICAO Annex 10 ─ Aeronautical Telecommunications, Volume II ─ Communications Procedures. Under these provisions the air traffic controller would, inter alia, request other aeronautical stations to render assistance by calling the aircraft concerned and relaying traffic or/and request other aircraft in the vicinity to attempt establish communication with the aircraft concerned. The air traffic controller should also inform the aircraft operating agency as soon as possible and continue treating the aircraft in accordance with the relevant communications failure procedures.

4.55 On the other hand, a pilot experiencing a communications failure would be expected to follow the relevant provisions of ICAO Annex 2 ─ Rules of the Air. These provisions include, inter alia, the setting of the transponder to Code 7600. However, it was noted that in numerous occasions the pilot was not aware of the loss of communication for a significant period of time. From the ground side these occurrences had been treated as a communications failure due to a possible security threat and therefore resulted in aircraft being intercepted by military aircraft.

4.56 At its 39th Meeting (21 to 23 February 2006), the EUROCONTROL Airspace and Navigation Team (ANT) agreed on a proposal to amend the ICAO provisions – the ICAO Procedures for Air Navigation Services – Air Traffic Management (PANS-ATM, Doc 4444) (**Appendix F** refers) in order to include a requirement that air traffic services (ATS) units inform the appropriate authorities regarding prolonged loss of communications.

4.57 In evaluating the draft proposal for amendment developed by EUROCONTROL, the EANPG recognised that, with the proposed text, in a different operational environment than Europe (e.g. North Atlantic) the frequently occurring HF black-out situations could be misinterpreted as a prolonged loss of communication. In this respect, EANPG invited ICAO to use all necessary caution when assessing the proposed text in order to avoid any possible confusion.

4.58 EANPG agreed on the following Conclusion:

EANPG Conclusion 48/19 - Proposal for amendment of PANS-ATM, Doc 4444

That the ICAO Regional Director on behalf of EANPG, submit to ICAO HQ the draft proposal for amendment to the PANS-ATM, Doc 4444 on the subject of prolonged loss of communication as presented at Appendix F of this report.

Proposal for PANS-ATM Doc 4444 Amendment

4.59 The Group was informed that the International Federation of Air Line Pilots Associations' (IFALPA) had identified a source of confusion when an aircraft was being vectored to a pilot-interpreted final approach aid and Air Traffic Control left the aircraft at a higher level than initial the approach altitude when giving the approach clearance. It was unclear whether pilots should maintain the last assigned altitude when being radar vectored until established on final approach track or should descend to the initial approach altitude when the clearance was received.

4.60 The Group was informed that the provisions in the ICAO *Procedures for Air Navigation Services – Air Traffic Management* (PANS-ATM, Doc 4444) did indeed lack clarity and, considering the safety aspects of an early descent, the Group agreed that the matter needed to be clarified. Accordingly, the Group endorsed the proposal that an aircraft being vectored for approach using a pilot-interpreted final approach aid should maintain the last assigned altitude until established on the final approach track. The

Group noted that the ICAO Regional Director would initiate the necessary co-ordination to amend the relevant ICAO provisions.

EANPG Conclusion 48/20 - Proposal to amend the PANS-ATM (Doc 4444) provisions related to vectoring an aircraft to a pilot-interpreted final approach aid

That, the ICAO Regional Director on behalf of EANPG, submit to ICAO the draft proposal for amendment to the PANS-ATM, Doc 4444 on the subject of vectoring an aircraft to a pilot-interpreted final approach aid as follows:

"8.9.4.2 When the clearance for approach is issued prior to the aircraft having reported established on the final approach track, the last assigned altitude shall be maintained until the aircraft is established on the final approach track.

Renumber the following paragraphs".

Proposal for ICAO Doc 7030/4 Amendment

4.61 The Group was informed that, in response to a query regarding the carriage of an SSR transponder, a review of the EUR Region provisions related to this matter had shown that no such requirement existed. It was stressed that a lack of an operating transponder could significantly reduce airspace capacity because of the need to increase separation minima. Furthermore, it was noted that the lack of provisions for the mandatory carriage of pressure-altitude reporting transponders could have an effect on safety as systems such as ACAS, MSAW and STCA are dependent on information from pressure-altitude reporting transponders. With this in mind, the Group endorsed the need to mandate the carriage pressure-altitude reporting transponders, as is the case in many other ICAO Regions and further agreed that the Regional Supplementary Procedures for Europe be amended accordingly.

EANPG Conclusion 48/21 - ICAO Provisions related to the mandatory carriage of pressure-altitude reporting transponders

That, the ICAO Regional Director, on behalf of the EANPG, initiate an amendment proposal to the EUR Regional Supplementary Procedures as follows:

"9.0 USE OF SECONDARY SURVEILLANCE RADAR (SSR)
(Annex 6, Parts I, II and III; Annex 11, para. 2.25, P-ATM, Chapter 8; P-OPS, Vol. I, Part VIII, Chapter 1)

…….

9.1.2 *Operation of transponders*

9.1.2.1 Aircraft operating as IFR flights in the EUR Region shall be equipped with a pressure-altitude reporting SSR transponder.

Note.— Procedures which require pilots to operate the transponder and Mode C at all times during flight are contained in Procedures for Air Navigation Services — Aircraft Operations *(PANS-OPS, Doc 8168, Volume I, Part VIII, Chapter 1, paragraphs 1.1.1 and 1.1.3.*

***[Re-number** the remainder of paragraph 9.1.2.]"*

Aviation frequency spectrum issues

4.62 The updated chart that provides a capacity projection of aviation frequency bands for the next 20 years was presented to the Meeting. This chart is intended to assist in the spectrum management process by providing an executive summary of aeronautical frequency spectrum utilization in the International Civil Aviation Organization (ICAO) European and North Atlantic Regions.

4.63 The legends included in the **Appendix G** to this report provide a visual indication of the expectation of the degree to which aviation requirements can be satisfied in each band for each year. The main conclusions stemming from the chart is that congestion in 108-111,975MHz, 111,975-117,975MHz, 117,975-137MHz and 960-1215MHz bands remains of major concern for aviation in respect of spectrum availability.

4.64 Adequate planning for future aviation spectrum requirements cannot be assured without clearer coherence between development of the operational requirements, technical specifications and frequency spectrum availability.

EANPG Conclusion 48/22 - Aviation Spectrum Planning Deficiencies

That, ICAO put greater emphasis at the highest levels of air navigation planning, on the need for rationalised strategies and systems that enable a global approach to cover all aviation frequency requirements with the focus on improved systems frequency spectrum utilization.

WRC2007 preparation issues

4.65 The 2007 ITU World Radio Conference (WRC-07) aviation related issues concerning Aeronautical Navigation Systems, particularly two agenda items, 1.5 and 1.6 may result in changes to the ITU Radio Regulations in frequency bands allocated to Aeronautical Radio-Navigation Systems (ARNS). The ICAO position for WRC-07 is posted on www.icao.int . States are encouraged to use this position as a basis in their preparations for WRC 2007.

GSM on board aircraft

4.66 The use of mobile phones on-board aircraft has been a topic for discussion within aviation for some time. When the topic was originally raised in the 1980s there was mutual agreement between the mobile phone operators and the aviation that use of mobile phones on-board aircraft should be banned. Recently with advances in technology a number of companies have re-ignited the debate proposing that mobile phones could be used on aircraft if so called “pico-cell” devices are fitted within the cabin reducing the radiated power of the phone.

4.67 Apart from the technical issues for safe operation of GSM on board aircraft there are the human factors. The first was the increased possibility of ‘air rage’ when other passengers are upset by those using mobile phones in the very confined space of an aircraft cabin. The other more insidious issue is the confusion that will occur in the travelling public with mobile phones being allowed on some aircraft and not on others. This could lead to many passengers attempting to use mobile phones in aircraft not fitted with the necessary pico cells.

4.68 On the technical side the studies carried out up to date have been focused on the impact GSM mobile phones application on board aircraft have on the ground GSM network. However the impact of GSM in combination with pico-cell devices on aircraft systems was not investigated. The existence of different mobile communication systems in the different parts of the world should be also taken into account. In general all technical issues shall be carefully studied before any decision is taken by the aviation community.

4.69 Disharmonized regulation in interpretation of rules for the use of GSM on board aircraft between different regions, airlines and aircraft types should be avoided. Incoherence in regulation can potentially lead to the increased number of passenger air-rage considering that the use of mobile phones in public places is already considered as an annoying factor by majority of society.

4.70 Aviation needs to discuss these issues urgently and make unambiguous and easily enforceable global decision on the application of GSM on board aircraft to ensure the continued safety of the aircraft and the passengers. However, this cannot be done by the aviation industry in isolation as radio regulators also have an important role to play.

EANPG Conclusion 48/23 - GSM on board aircraft

That:

a) the issue of GSM on board aircraft be brought to the attention of appropriate bodies within ICAO to address these issues such that unambiguous guidance/regulation can be provided on a global basis;

b) EASA and States, as appropriate, are invited to withhold certification of the systems until all potential effects of GSM on board aircraft are studied and safety requirements are confirmed to be met;

c) States be urged to alert National radio regulatory authorities on the issues identified in the paper to ensure that a consistent set of spectrum protection requirements can be determined and raise the matter with the International Telecommunications Union (ITU) such that a global approach can be adopted to the radio regulatory aspects, and

d) International Air Transportation Association (IATA) and International Business Aviation Council (IBAC) are invited to provide assistance in assessing the potential impact of the use of mobile phones from a flight crew's perspective and practicality of enforcing any proposed regulation, and to ensure that, clear guidance be provided on the use of mobile phones on aircraft.

Global AMHS Address Co-ordination & Change Control

4.71 The transition from the current Common ICAO Data Interchange Network (CIDIN)/Aeronautical Fixed Telecommunication Network (AFTN) network to the ATS Messages Handling System (AMHS) network is gradually proceeding to its implementation phase with the first operational link established between Spain and Germany in the beginning of 2006. To ensure continuous and reliable functioning of the system certain official coordinated address registering system needs to be established. Failure to follow coordinated address registration procedure can potentially result in undetected loss of data.

4.72 There are 2 processes required in order to ensure effective AMHS address registration coordination:

a) Address Co-ordination, ultimately across multiple domains, by providing assurance that all centres are in receipt of the information. A mechanism to achieve this part has been submitted as a working paper to the Aeronautical Communication Panel (ACP) (ACP/WG N/SG N3 WP 4-5), which provides an excellent foundation on how to manage the Register and indeed, proposes a process and a set of tools for that purpose.

b) Change Control required in applying the new addressing in a co-ordinated manner. Currently in Europe, a CIDIN Management Centre (CMC) is established that provides the platform on which to develop the ATS Management Centre (AMC) and this forms the management process and system to co-ordinate change within the region.

4.73 There are at least 3 possible options for implementing a form of Change Control across systems following changes to the Register and the third of them is considered technically and operationally as a most feasible and preferable:

a) Each region develops and implements its own process. However, problems may occur in ensuring that several differing processes are aligned with the Register management process, resulting in a continued lack of synchronisation.

b) The EUR AMC processes as defined in the EUR ATS Management Manual Section 4.4.1 could be 'dovetailed' with the ACP/WG N/SG N3 WP 4-5 proposals and provide an 'end-to-end' system of Addressing Management and Change Control. If each region used this, then it ensures that the potential problems identified in a) are resolved. However, there would still be multiple focal points in each region for individual 'AMCs' and this may lead to different application of the management processes.

c) As b) above, but with one AMC in EUR providing the service on a global basis. The benefits of this option, are that there is only one AMC and that the application of the management processes are consistent across all domains

4.74 Global AMHS addresses registration and coordination mechanism should be established as soon as possible, by 2008 at the latest, due to the planned complete deployment of AMHS by 2009 in Europe.

EANPG Conclusion 48/24 - Global AMHS address registration

That ICAO consider the necessary actions to enable a global AMHS addresses registration and coordination mechanism.

First Edition of the EUR AMHS Manual

4.75 EUR AMHS Manual had been updated taking into account the latest developments and is considered mature enough for the endorsement to be used as the basic Regional reference document for AMHS implementation.. The material had been posted on the ICAO EUR/NAT Office official web site.

EANPG Conclusion 48/25 - EUR AMHS Manual

That States in the EUR Region be invited to use the EUR AMHS Manual as the basic Regional reference document for AMHS implementation.

SAFIRE implementation

4.76 SAFIRE operational evaluation started in July 2006 following the discussion at the Forty Seventh Meeting of European Air Navigation Planning Group (EANPG/47). The aim of SAFIRE is to provide web access to a mechanism for spectrum and frequency management and to provide a secure, centrally managed system that would enable efficient and accurate management of aeronautical frequencies, and provide a comprehensive information resource to facilitate spectrum management and frequency planning. First SAFIRE implementation would be COM 2 (VHF communications) data, which is subject to frequent updates and so would deliver the greatest benefit from the use of the SAFIRE facilities.

4.77 Consistency and integrity of the data for COM2 planning and registration needs to be secured during transition in terms of providing reliable back up system for SAFIRE in the form of current Aeronautical Fixed Telecommunication Network (AFTN) based system, which shall be operational until full implementation of SAFIRE. States shall take necessary measures to warrant conflict free transition to SAFIRE, correctness and timeliness of provided data.

4.78 COM3 and COM4 Tables implementation for operational evaluation shall be started as soon as possible with the aim to commence full operation by 1 October 2007. In general, the transition period shall be reduced as much as possible in order to avoid ambiguities in procedures, need for additional training and not imposing any threat on the safety, reliability and efficiency of the system operation.

EANPG Conclusion 48/26 - SAFIRE operational implementation

That the ICAO Regional Director:

a) invite States that have not yet implemented SAFIRE to do so with the aim for SAFIRE COM 2 operational date 1 January 2007 and start of operational evaluations for COM3 and COM 4 Tables as of 1 January 2007 with the aim to commence full operation as of 1 October 2007, and

b) invite EUROCONTROL, as a matter of urgency, to complete any outstanding enhancements prior and as a prerequisite to SAFIRE COM2 operational date.

MLS requirements

4.79 The Meeting noted that spectrum had been allocated by the ITU for MLS for more than 40 years. The first Standards and Recommended Practices (SARPs) were published in 1979. The ICAO global ILS/MLS transition plan for total replacement of ILS with MLS by 2010 was published in 1987 and final SARPs were published in 1996. The end result however was that implementation at the end 2006 had not started in any meaningful way. The plan for a total transition to MLS was abandoned when it was thought in 1995 that GNSS would satisfy the navigation requirements for all phases of flight in the near future.

4.80 The ILS/MLS transition plan for Europe provided frequency allocations for about 1,200 MLS sites. Recent corrections made to the MLS SARPs had increased the spectrum requirements. This had the effect of reducing the capacity of the core band in Europe from 1,200 to 333 allocations (with circular coverage to FL65). Although 200 MLS channels were identified in the core band, the adjacent channel restrictions in the current SARPs in effect reduce the available MLS channels to about 40.

4.81 In response to the decision not to have a full transition to MLS, States had informed ICAO of revised long term requirements of 433 MLS installations in the European Region. Frequency plan simulations, using the current planning rules defined in Annex 10, had indicated that 322 of these requirements can be satisfied within the MLS 'core band'. By this measure the MLS extension band would need to be utilised if the remaining 111 requirements were to eventually be implemented.

4.82 The SARPs however would need to be amended if the extension band was to be utilised. This being the case, changes to the SARPs related to updated operational coverage and spectrum efficiency improvements instead would be a much more positive development.

4.83 There are two aspects to spectrum efficiency of MLS. The first was in the design of the MLS itself, with specifications that were decided on decades ago to accommodate technology that had since become outdated. The second was the pairing arrangement that locks VOR, DME, ILS, and MLS channels into a rigid pattern. This was necessary when the navigation control panel in aircraft was a mechanical switch. Digital aircraft control systems no longer needed the rigid pairing arrangement to make the correct navigation aid

selection for a particular location. By phasing out the pairing requirement, more efficient frequency utilisation would be possible for all the navigation aids involved.

4.84 The uncertainty of the MLS implementation time frame, and the possibility that many of the identified requirements would never be implemented, presented the aviation community with a huge creditability problem with the radio regulators when trying to retain the virtually vacant MLS allocation for decades.

4.85 In order to address the range of uncertainties related to MLS, simulations had been conducted to determine the feasibility of measures that might enable all MLS implementation requirements to be accommodated within the core band.

4.86 The assumptions had included:

a) Use of operational requirements consistent with current ILS practice and the RNP/RNAV environment,

b) More restrictive specification for 'all of country' allocations

- the initial assumption was to assume an exclusion zone around any fixed MLS installations of the operational coverage plus 10 NM of for 'all of country' implementation,

c) Reuse of same frequency for both ends of same runway (at least to the extent used now for ILS, and to the full extent),

d) Removal of MLS "hard pairing" requirements, and

e) Amendments to improve MLS spectrum efficiency.

4.87 Planning exercises based on assumptions a) to d) had produced encouraging preliminary results that reduced unsatisfied requirements from above 300 to about 10. However it was noted that in particular option d) is considered to be very long term perspective with the need for careful consideration of all foreseen operational, technical and financial consequences. With the inclusion of assumption e) (amendments to improve the spectrum efficiency of the MLS) it might be possible to establish that European long term MLS requirements could be satisfied within the MLS core band. This would also provide a tangible indication that ICAO was a good global citizen in its efforts to make efficient use of scarce radio spectrum.

EANPG Conclusion 48/27 - MLS requirements

That ICAO take a multi-disciplinary approach to the following items on the MLS issues, in order to determine if the spectrum requirement can be satisfactorily accommodated within the MLS core band allocation:

a) identify, more precisely, the demand for MLS installations and the intended timetable for implementation, and

b) explore the feasibility of the potential measures to improve the spectrum efficiency, encompassing operational requirements, and technical issues related to both airborne and ground systems, recognising that 'hard pairing' is a longer term issue.

8.33 kHz Implementation

4.88 The implementation of 8.33 kHz channel spacing above FL195 in the ICAO EUR Region was planned to take effect from 15 March 2007. EUROCONTROL advised the Meeting that the preparations were proceeding well except for the amendment to ICAO Doc 7030. Publication of the proposed amendment to ICAO Doc. 7030 was a pre-requisite for the implementation to proceed on the 15th March 2007. This must be completed in sufficient time to allow AIP amendments etc. to proceed. Difficulties were being experienced in Spain with the Doc 7030 amendment and this was delaying its approval and publication.

4.89 A key milestone was the Agency report on a go-delay decision on 8.33 kHz above FL195, which was planned for 14 December, as a follow-up to the 8.33 contact persons meeting held 7-8 November.

4.90 The EANPG agreed on the following measures to progress 8.33 kHz implementation above FL195.

EANPG Conclusion 48/28 - Actions in support of 8.33 kHz above FL195

That the ICAO Regional Director:

a) urge States to complete the required actions in support of implementation of 8.33 kHz above FL195, and

b) advise EUROCONTROL on the timescales for the acceptance and publication of the proposed 8.33 kHz above FL195 amendment to ICAO SUPPS Doc 7030.

4.91 The EANPG agreed that congestion in the VHF COM band was a urgent issue that required firm and clear decisions. The present demand exceeded the supply of spectrum for new communications requirements. The current plans for expansion of 8.33 kHz airspace to FL 195 would not satisfy the outstanding demand, so action was necessary to ensure that future growth in aviation activity was not constrained by the lack of communication facilities. It was also agreed that 8.33 channel spacing was the only available solution to satisfy VHF communications requirements within the required time frame.

4.92 The EANPG also noted the progress of the EUROCONTROL 8.33 kHz business case and agreed that, when formally adopted, it would provide a valuable framework for the pragmatic, phased implementation of 8.33.

4.93 The need to expand the 8.33 airspace beyond the initial implementation was recognised by the EANPG in 1996. It was only now, after comprehensive consideration of all the possibilities, that the insurmountable nature of the problem had become evident enough for it to be given serious attention by the aviation community in general.

4.94 A clear and firm decision on 8.33 kHz implementation was necessary to ensure there was no further erosion of the available lead time, which was essential to ensure that the significant issues involved were addressed with the maximum possible advanced notice.

4.95 With the exception of Spain, the EANPG agreed on the following measures to progress 8.33 kHz implementation.

EANPG Conclusion 48/29 - 8.33 kHz implementation below FL195

That:

a) States and all concerned entities note the EANPG decision to proceed with the full implementation of 8.33 kHz below FL195 in the area of 8.33 operations in the EUR region,

b) EUROCONTROL be invited to develop an implementation plan for a phased transition to a full implementation of 8.33 kHz below FL195,

c) EUROCONTROL be invited, in the context of the SES, to propose as soon as possible an amendment to the European Commission Implementing Rule on Air-Ground Voice Channel Spacing (AGVCS-IR) to address the requirement for 8.33 kHz below FL195,

d) States mandate carriage of 8.33 kHz equipment from 1st January 2008 for all new orders for aircraft to be flown in the 8.33 area of operation in the EUR region, and

e) States advise all affected entities of the provisional dates for the introduction of services in 8.33 channel spacing below FL195 in the area of 8.33 operations, as follows:

i) ACC services (not tied to sector lower-limits), and affecting IFR, Controlled VFR and Night VFR, as from 2010,

ii) Full implementation as from 2013.

8.33 - STATEMENT BY SPAIN

4.96 Spain considered that this issue was not mature enough. Accordingly, and taking into account the difficulties to implement this technology in Spain below FL 245, Spain stated that it was not in a position to approve the draft conclusion presented to the meeting on this matter.

Language Proficiency requirements

4.97 The Group recalled that in March 2003, the ICAO Council adopted amendments to Annex 1 – Personnel Licensing, Annex 6 – *Operation of Aircraft*, Annex 10 – *Aeronautical Telecommunications*, Annex 11 – *Air Traffic Services*, and the *Procedures for Air Navigation Services – Air Traffic Management* (PANS-ATM, Doc 4444) relating to the strengthened language proficiency requirements for pilots and air traffic controllers.

4.98 The Group noted that compliance with these strengthened requirements were still challenging for a number of States in the ICAO EUR Region. ICAO had continued to provide assistance to these States and the COG ATM Training Task force was mandated by COG to provide this assistance to States. It was recognized that those States had problems because of huge numbers of controllers, pilots and general aviation pilots in particular, and the associated cost burden of achieving the required standards.

Action Plan to assist States in implementing the language proficiency requirements

4.99 It was also noted that the Recommended Action Plan to assist States in implementing the new language proficiency requirements continued to be regularly up-dated. The Action Plan was published on the ICAO EUR/NAT website at www.paris.icao.int . The newly proposed version of the Plan is at the **Appendix H** to this Report.

4.100 In this respect and in support of the Strategic Objective A – *Safety*, the Group agreed as follows:

EANPG Conclusion 48/30 - Language proficiency implementation action plan

That:

a) States use the up-dated version of the Recommended Action Plan as guidance material for the implementation of the ICAO language proficiency requirements and approach ICAO if any assistance is required; and

b) COG regularly review and up-date the Action Plan, if and when required.

Recommended qualifications for raters/interlocutors

4.101 The Group agreed that personnel responsible for the design, administration, delivery and rating of tests should meet a set of minimum qualifications as well as comply with rigorous competency requirements. EANPG was informed that the ICAO Policy on Language Proficiency Testing was developed by ICAO in order to be incorporated into the Manual on the Implementation of ICAO Language Proficiency Requirements (Doc 9835) and is in the **Appendix I** to the Report.

4.102 In addition to the ICAO Policy on Language Proficiency Testing the COG ATM Training Task Force developed requirements for raters and interlocutors necessary for efficient evaluation of language proficiency. **Appendices J** and **K** to this Report detail recommended qualifications for raters (Appendix J) and interlocutors (Appendix K). Thus, the Group, in support of the Strategic Objective A – *Safety* agreed on the following:

EANPG Conclusion 48/31 – Recommended qualifications for raters and interlocutors

That States be invited to use the recommended qualification and competency requirements for raters and interlocutors in order to ensure that personnel responsible for interlocuting and rating comply with the minimum professional qualifications necessary for accurate assessment of the language proficiency of air traffic controllers and pilots.

Language proficiency implementation seminars/workshops

4.103 The Group was informed that in order to assist States in implementing the strengthened language proficiency requirements which would affect, inter alia, air traffic controllers and pilots testing, training and licensing, the ICAO European and North Atlantic Office had arranged the forth in a series of seminars/workshops taking place in its premises from 6 to 7 September 2006. One of the outcomes of this Workshop had been the request to continue assisting States through the similar training events in the future.

4.104 It was noted that the ICAO EUR/NAT Office could organise additional seminars/workshops during 2006 – 2008 where representatives from interested States could exchange views on the issues of mutual interest and concern. These training events would complement the Recommended EUR Language Proficiency Implementation Action Plan and would give the opportunity to share the implementation experience.

4.105 The above seminars/workshops could be held in the ICAO EUR/NAT Regional Office. However, States could also offer to host such seminars/workshops and invite other States to participate. These seminars/workshops would be of interest to Civil Aviation Authorities, air navigation service providers, training institutions, airlines, and institutions providing aviation English courses and conducting language proficiency tests. The Group noted in this respect a kind offer of Germany (Deutsche Flugsicherung - DFS) to host one of these workshops in 2007. The Group, in support of the Strategic Objective A – *Safety*, agreed on the following:

EANPG Conclusion 48/32 - Language proficiency implementation seminars/workshops

That:

a) based on the interest of States, the ICAO Regional Director organise seminar(s)/workshop(s) to assist States in timely implementation of the ICAO language proficiency requirements; and

b) States be invited to indicate their interest in hosting language proficiency seminar(s)/workshop(s) dedicated to the preparation for the implementation date of 5 March 2008.

Language proficiency implementation preparedness internal audit

4.106 In order to identify the status of the States' preparedness and determine means, if necessary, by which they could be prepared for the language proficiency requirements implementation date of 5 March 2008 the Group proposed that an internal audit be conducted by each State as soon as possible. This audit would assist States to achieve an objective assessment of the language proficiency implementation preparedness by all aviation entities concerned.

4.107 The above audit could be conducted on the basis of a protocol, a copy of which is given in **Appendix L** to this Report. In this respect and in support of the Strategic Objective A – *Safety* the Group agreed on the following:

EANPG Conclusion 48/33 – Language proficiency implementation preparedness internal audit

That States:

a) be invited to conduct an internal audit on language proficiency requirements in order to achieve an objective assessment of their preparedness for the 5 March 2008 implementation date; and

b) be invited to use the recommended language proficiency audit protocol which will facilitate the audit.

4.108 The Group noted that all the above proposed actions and tools had a recommended character. However, it was believed that their realization and use would facilitate States' efforts to timely implement the language proficiency requirements. States were invited to up-date, adopt and/or amend them, if necessary, based on their own experience, practices and regulations. All related comments and proposals would be welcomed by the ICAO European and North Atlantic Office. The Group believed that the proposed requirements and actions contained in the above Appendices I, J; K, and L would facilitate States' efforts to implement the ICAO language proficiency SARPs. States could up-date and/or amend them, if necessary, based on their own experience, practices and regulations.

Global AIS Congress

4.109 The meeting was informed of the outcome of the outcome of the Global AIS Congress held in Madrid, Spain from 27 to 29 June 2006.

4.110 The meeting recalled that the Global AIS Congress considered the essential role of AIS in the evolving world of ATM. It identified the key drivers for change and explored what must be done to ensure that aeronautical information of the right scope and quality is made available. The Congress began to define a future high-level view as to the shape, nature and content of a strategy for the evolution of AIS and in the provision and management of aeronautical information in general. It reviewed technologies that will facilitate change in a practical and affordable way

4.111 The meeting agreed with the Congress that there are AIS initiatives going on in many regions, but without effective global coordination. Each region was operating without understanding of the other's work.

4.112 In order to prevent diverging developments in the future and realising the safety critical nature of aeronautical information, it was considered essential that ICAO takes the lead at the global level with regard to the transition from AIS to AIM as called for by the AN-Conf/11.

4.113 The meeting noted that the Congress outlined a roadmap for the evolution of the provision of aeronautical information to assist ICAO to facilitate global change and was informed that the Congress Summary Report was sent officially to ICAO Headquarters end of August 2006 and presented to the ICAO Air Navigation Commission on 3 November 2006.

4.114 The meeting noted that ICAO HQs, based on the briefing made by EUROCONTROL related to the Global AIS Congress outcome, recognized that the Congress addressed important issues that have to be integrated into ICAO's Air Navigation Integrated Programme. ICAO also agreed to take the lead to address all the Recommendations of the Global AIS Congress. However, it was recognized that this will require support from States and international organizations. In this regard, the meeting noted with appreciation that EUROCONTROL had agreed to provide the required support and that a meeting between ICAO and EUROCONTROL will be held in Montreal in February 2007 to discuss the work that has to be done and to develop a project plan. It was also agreed that the Consortium would present a paper at the next ICAO General Assembly highlighting the Institutional issues that have to be addressed with a view to update the Assembly on the issues and the difficulties that have to be overcome and eventually propose solutions and a possible Resolution.

4.115 Based on the above, the meeting agreed to the following Conclusion:

EANPG Conclusion 48/34 - Follow-up on the outcome of the Global AIS Congress

That, ICAO:

a) consider the outcome of the Global AIS Congress; and

b) with the support of States and international organizations initiate follow-up action as soon as possible to implement the Recommendations of the Global AIS Congress.

Electronic Terrain and Obstacle Data (eTOD) implementation

4.116 The meeting recalled that EANPG/47 developed Conclusion 47/41 urging States to communicate their plans related to the implementation of eTOD to the ICAO EUR/NAT Regional Office, specifying clearly if they would encounter any difficulty to comply with the dates of applicability and as a follow-up action, the Regional Office sent a State Letter on 16 December 2005 to all States. However, the quasi-totality of States had not provided their implementation plans for eTOD. Nevertheless, the meeting noted with appreciation that Italy, France and Switzerland had made some progress in the development/implementation of their eTOD programme. The experience gained by these 3 States, if shared with the other European States, could provide a useful starting point for those that have not yet started implementation of eTOD provisions.

4.117 The meeting noted with appreciation a presentation made by Italy with a view to share their experience in the development and implementation of an eTOD programme with the rest of the European States. The meeting noted, inter-alia, that the eTOD programme had started in Italy in October 2004 and would necessitate approximately 5 years to cover the 38 Italian airports. The cost was estimated between 90,000 to 300,000 Euros per airport, which would lead to a total cost of 8, 700, 000 Euros for the 38 airports. The meeting was appraised of the different phases of the project and the techniques used for the provision of eTOD and noted that the work had been finished for the 5 major airports in Italy.

4.118 Based, on the presentation made by Italy, the meeting noted with concern that time for the implementation of eTOD provisions was becoming critical, since such programme was time consuming and required a lot of resources. It was questioned if the rest of European States would be able to comply with the dates of applicability. However, it was highlighted that the most difficult part of the eTOD programme resided in the provision of eTOD information in area 2, which covers the TMA or a 45-Km radius area from the aerodrome/heliport reference point (whichever is smaller), and for which the agreed date of applicability, as reflected in Annex 15 paragraph 10.6.1.2 is 18 November 2010.

4.119 The meeting underlined the need for guidance material, which should assist States, inter-alia, in the definition of:

- the responsibilities and roles of the different bodies involved in the implementation process;
- the quality of data collection techniques;
- the Methods for the validation and verification of eTOD;
- the data model(s) to be used;
- the Mechanisms for the storage and exchange of eTOD; and
- the cost recovery mechanism to be used.

4.120 The meeting was informed that the ICAO guidelines on eTOD were expected to be issued by the end of 2006.

4.121 The meeting noted that the AIS/MAP Project Team, when discussing the issue of eTOD, agreed that, with a view to expedite the process of implementation of the Annex 15 new provisions, a collaborative approach of all players involved in the implementation process was required. Accordingly, the meeting invited States to create National Group composed of specialists from different Administrations within and outside the Civil Aviation Authority (AIS, surveyors, procedure designers, Aerodromes, Military, National Geographic/Topographic Administrations/ Agencies, etc) responsible for the development and implementation of an action plan pertaining to the provision of eTOD.

4.122 The meeting was also appraised of EUROCONTROL's activities related to Terrain and Obstacle Data. It was highlighted, in this regard, that the implementation of eTOD is State's responsibility. Therefore, the role of EUROCONTROL would be mainly to promote awareness, develop guidance material to support training and facilitation, and, should the need arise; develop common tools to support the foregoing.

4.123 Taking into consideration the outcome of the AIS/MAP Project Team and the work undertaken within EUROCONTROL, the meeting agreed to the following EANPG Conclusion:

EANPG Conclusion 48/35 - Collaborative Approach on the national level for the implementation of ETOD requirements

That, with a view to expedite the implementation of eTOD requirements, States:

a) develop a high level policy for the management of a national eTOD programme;

b) define the responsibilities and roles of the different Administrations within and outside the Civil Aviation Authority in the implementation process (AIS, surveyors, procedure designers, Aerodromes, Military, National Geographic and Topographic Administrations/Agencies, etc);.

c) based on b) above, establish national Group composed of experts from all involved Administrations responsible for the development and implementation of an action plan pertaining to eTOD provision;

d) secure the necessary resources for the eTOD programme;

e) note that ICAO guidelines on eTOD are expected to be available by the end of 2006;

f) take advantage of the experience of those States who have already started the development/implementation of their national eTOD programme; and

g) keep the ICAO EUR/NAT Office informed of the progress made in the development/implementation of their national eTOD programme, preferably by COG/38.

WAFS Development

4.124 The Group noted the WAFS developments which included the significant weather (SIGWX) forecasts in chart form using the industry standard Portable Network Graphics (PNG) graphical format which had been developed to assist States that were not in a position to receive and decode BUFR-coded SIGWX forecast. The PNG charts were provided, on a trial basis, through the SADIS satellite services (SADIS 1G and 2G and FTP service). This requirement had been implemented by mid-September 2005 by the World Area forecast Centre (WAFC) London and by early October 2005 by WAFC Washington for all of the PNG formatted charts.

4.125 Since there was a continued need to be able to use this format also in the future and change its trial status to become operational, ICAO was urged to formally approve the PNG graphical format. Therefore the EANPG agreed on the following conclusion:

EANPG Conclusion 48/36 - Availability of WAFS SIGWX forecasts in chart form using the PNG format or an equivalent industry standard

That the WAFSOPSG be invited to consider the provision, on a permanent basis, of WAFS SIGWX forecasts in chart form by the WAFCs for the fixed ICAO areas of coverage using the Portable Network Graphics (PNG) graphical format or an equivalent standard.

4.126 Furthermore, the results of the survey undertaken by ICAO on the implementation of BUFR-coded SIGWX forecasts by States showed that only 60% of States that responded were in a position to utilize the BUFR-coded SIGWX forecasts and that by the end of 2006, the percentage was extected to rise to 79%. As a result of these facts, the WAFSOPSG/3 meeting invited WAFCs London and Washington to continue with the issuance and provision of the WAFS SIGWX forecasts in the PNG chart form on the SADIS and the ISCS broadcast, respectively and FTP service, beyond 30 November 2006. The WAFC Provider States will discontinue the provisions of WAFS SIGWX forecasts in T4 chart form as of 1 December 2006.

4.127 The Group noted the executive summary of the third meeting of the WAFS Operations Group (WAFSOPSG/3) (Paris, France, 26-29 September 2006).

Implementation of International Airways Volcano Watch (IAVW) in the EUR Region

4.128 In order to solve issues of common interest related to the dissemination of Volcanic Ash Advisories (VAA) and SIGMET, a volcanic ash advisory test was carried out by Volcanic Ash Advisory Centres (VAACs) London and Toulouse on 8-9 February 2006 during the EUR Bulletin Management Group (BMG) non-regular data monitoring period.

4.129 Problems continued to be encountered concerning the headers for volcanic ash (VA) SIGMETs. The outcome of the test was considered unsatisfactory. This and other deficiencies in dissemination of the information clearly showed the need for further tests and the difficulty to maintain seldom-used procedures.

4.130 The goal of the next exercise was to check all the interfaces between the MET and ATM units and operators using the Volcanic Ash Contingency Plan. The VAACs in charge of the coordination of the test considered that the best period for the exercise would be in February, since it coincided with the BMG monitoring period and the most convenient time to assess the issuance of SIGMETs.

4.131 In order to improve the regional implementation of the International Airways Volcano Watch (IAVW), since at this moment, neither FASID tables nor BMG tables contained a list of AFTN addresses, changes to the format of the FASID Table 3B would ease the use of the tables. It was proposed to sort the FASID Table MET 3B by FIR/UIR and Meteorological Watch Office (MWO) location indicators, grouped together by States and by ICAO region as presented in **Appendix M**. Such a modification should also be applied in the contact list of the IAVW Handbook Doc 9766.

EANPG Conclusion 48/37 - Proposal for Amendment concerning the format of FASID - Table MET 3B

That IAVWOPSG be invited to consider amending the format of the FASID Table MET 3B according to the proposed template presented in Appendix M to this Report.

Designation of State Volcano Observatories

4.132 The Group noted the importance of the networks of volcano observatories established by States to monitor selected active volcanoes. The spirit of Standard 3.6 of Annex 3 is to compensate the additional costs required for a limited number of volcano observatories that send information related to volcanic activity to the corresponding Area Control Centre (ACC), MWO and VAAC and to recognize the important role of the volcano observatories in the IAVW.

4.133 In light of the above, States with active volcanoes in the EUR/NAT region, namely Iceland, Italy and the Russian Federation had been invited to designate their corresponding volcano observatories to be included in the FASID Table MET 3C, since these provisions were included in Amendment 73 to Annex 3 in 2004.

EANPG Conclusion 48/38 - Designation of State Volcano observatories

That the EUR/NAT States that maintain monitoring of active volcanoes be invited to designate, as a matter of urgency, based on the principles formulated by the IAVWOPSG/1 meeting, selected volcano observatories for inclusion in the FASID Table MET 3C of the EUR/NAT FASID.

4.134 The States concerned should be invited to provide the pertinent information to the EUR/NAT Regional Office as soon as possible but no later than February 2007.

4.135 The Group noted the executive summary of the eleventh meeting of the SADIS Operations Group (SADISOPSG/11) (Cairo, Egypt, 23-26 May 2006).

European SIGMET and AIRMET

4.136 IATA highlighted the importance that the format of SIGMET and AIRMET used by States be in line with the templates included in Annex 3. Since Amendment 73 to Annex 3, many States had implemented these changes; however, several States were still non-compliant with the SIGMET format.

4.137 In order to meet their operational requirements in the EUR region, IATA further suggested that the area of phenomena be described as a closed line of coordinates or location indicators of waypoints or of airports. It noted with interest that there were plans that the overall issuance of SIGMET be studied by an appropriate ICAO body, in close coordination with the World Meteorological Organization (WMO), as of 2007.

EANPG Conclusion 48/39 - Application and development of the template for SIGMET and AIRMET

That ICAO be invited to:

a) request States, as a matter of priority, to implement the insertion of the FIR location indicator at the beginning of the second line of SIGMETs and AIRMET; and

b) consider amending the template for SIGMET and AIRMET in Annex 3 to allow only the use of a closed line of coordinate, location indicators of waypoints or airports in order to describe the area of phenomena in a SIGMET and /or AIRMET.

Amendment of Part VI-MET of the EUR ANP/ FASID

4.138 The Group was presented a draft proposal for amendment of the EUR ANP/FASID - Part VI MET. Consequently, the EANPG agreed on the following conclusion:

EANPG Conclusion 48/40 - Amendment Proposal to the EUR Air Navigation Plan and Facilities and Services Implementation Document (EUR ANP/FASID) concerning MET

That the ICAO Regional Director, on behalf of the EANPG, initiate an amendment proposal to the EUR ANP/FASID in order to update the MET regional requirements.

Exclusive use of the digital forecasts provided by the WAFCs

4.139 The current draft Amendment 74 to Annex 3, concerning Chapter 9, paragraphs 9.1.4 and 9.1.3 a) contained issues regarding the use of the digital forecasts provided by WAFCs as a basis to derive all the meteorological information supplied to operators and flight crew members for flight planning.

4.140 Concern was expressed about the new standard 9.1.4 and its implications to MET services. In this context, the Group was informed that the issue was currently being considered by the appropriate ICAO and WMO governing bodies.

RVR Forecast: Status Report

4.141 The Group noted the results on the proposal to use a method to convert visibility forecasts under various conditions into runway visual range (RVR) forecasts. However, it was noted that this matter already formed part of the work programme of the Aerodrome Meteorological Observing Systems Study Group (AMOSSG). Nevertheless the latest progress report should be referred to the ICAO Secretariat for further assessment since it could conceivably provide useful guidance material for global use.

EANPG Conclusion 48/41 - Runway Visual Range Forecasts

That ICAO consider, as a matter of urgency, the possibility of developing global provisions or guidance material related to RVR forecasting based on the calculation of a first-guess RVR value or the use of conversion tables based on the same method currently being used for real-time RVR assessment included in **Appendix N** to this report.

4.142 The Group was informed that emphasis was put on the importance of the accuracy of visibility forecast which would also have a direct impact on any future RVR forecasts. It was recognized that this issue, related to the methods of meeting requirements stated by ICAO, fell within the realm of the WMO in accordance with the Working Arrangements between ICAO and WMO (Doc 7475). The issue should therefore be referred to the WMO.

EANPG Conclusion 48/42 - Improvement of Methods used for Visibility Forecasts

That ICAO invite WMO to undertake a study in view of improving the accuracy of visibility forecasts and other meteorological components of RVR assessment.

Operational requirements for MET provisions for Airport Capacity

4.143 The Group was presented with a series of tables which contained operational requirements on significant weather parameters for ATM users, which could enhance airport capacity. It considered that the information could constitute a good starting point for future regional guidance related to MET support for ATM to be developed for the EUR Region. In this context disappointment was expressed regarding the lack of provisions in Annex 3 and the lack of feedback by the ATM users.

Wind information for ATM in 7 EUR Airports

4.144 The Group was informed that some variations existed in the wind reporting for ATM at 7 major EUR international airports. In particular, the update rates displayed for ATM varied substantially. These variations were attributed to the lack of guidance in ICAO documents.

EANPG Conclusion 48/43 - Update Rate of Wind Data for ATC Displays

That ICAO, consider developing provisions or guidance related to the update rate of wind data displayed for ATC to enhance the standardization of MET information to be provided to aviation users.

Operational Flight Information Service Broadcast of Visibility

4.145 The Group noted the possible inconsistencies between the content of Automatic Terminal Information Service (ATIS) messages in Annex 11 and the meteorological elements in local reports in Annex 3 related to the number of visibility values included therein. The Group considered that some clarification would be needed related to the possible inclusion of multiple visibility values in ATIS messages.

EANPG Conclusion 48/44 - Inclusion of Multiple Visibility Values in ATIS Messages

That ICAO consider the need to develop provisions in Annex 11 related to the inclusion of multiple visibility values in ATIS messages (both in D-ATIS and ATIS broadcasts), to render them consistent with the content of local MET reports as defined in Annex 3.

5. MONITORING

The EUR Region RVSM safety monitoring report

5.1 The Group recalled that the implementation of RVSM in the EUR Region supported Strategic Objectives D and C – *Efficiency* and *Environment* respectively, as it provided a significant enhancement in capacity therefore allowing aircraft to operate at more economic flight levels with the concomitant positive effects on the environment.

5.2 With this in mind, the Group was presented with the EUR RVSM safety monitoring report for 2006, which had been prepared by EUROCONTROL in the role of the European Regional Monitoring Agency (RMA), which it performs on behalf of the EANPG. In accordance with its European RMA role, EUROCONTROL was not only assessing safety within the RVSM airspace on an annual basis, but was also funding the continuous monitoring of aircraft height-keeping performance. The product of this monitoring programme was an essential element in the overall monitoring programme needed to satisfy the requirement that a small technical risk value was being maintained at an acceptable level.

5.3 The Group noted that the report was broken down into the three principal safety objectives, which had been endorsed by the EANPG (EANPG Conclusion 42/23 refers). It was recalled that meeting these safety objectives represented the necessary and sufficient condition to assert that the system was safe.

The EUR Region RVSM safety monitoring report – Compliance with the safety objectives

Safety Objective #1 – the vertical collision risk in RVSM airspace due solely to technical height-keeping performance meets the ICAO TLS of 2.5×10^{-9} fatal accidents per flight hour.

5.4 The first step in calculating vertical is to ascertain the vertical collision risk due to technical height keeping. This involves complex statistical analysis of data obtained by the Height Monitoring Units (HMU) operated by the Regional Monitoring Agency (RMA). During this process, two technical parameters, the probability of vertical overlap value - Pz(1000), and the horizontal overlap frequency are calculated. Regarding Pz(1000), the value of this parameter is required to meet the ICAO RVSM Global System Performance Specification of not greater than $1.7 \times 10^{-8.}$.

5.5 However, for the 2006 assessment, the calculation of this Pz(1000), 3.02×10^{-8}, has exceeded the ICAO RVSM Global System Performance Specification for the second time since RVSM technical height-keeping performance has been monitored. A detailed investigation carried out at the end of 2005 and triggered by the results in the 2005 RVSM Safety Monitoring report, had highlighted the impact of the significant increase in the number of Strumble HMU measurements which, when included with the continental HMU measurements results in a dataset which demonstrates performance exceeding the Global System Performance Specification. The Strumble measurements present a greater variance and with a mean shifted 10ft to 20ft when compared with the results from the continental HMUs. The Group noted that the NAT and EUR RMAs were co-ordinating efforts to resolve some of the issues highlighted.

5.6 As regards the vertical risk due to the horizontal vertical overlap probability, the estimation was also greater than the previous year. This could only be explained by changes in the traffic patterns and the relative increase of the occurrence of aircraft in close proximity. These parameters have not been assessed in detail in the 2006 report as the estimated frequency was within the normal range of values. Nevertheless, if this situation repeats in subsequent reports, a more detailed investigation would be required.

5.7 Despite the aforementioned increases in both components of the vertical risk due to technical height-keeping performance, the computed vertical collision risk for the current measurement year was 0.26×10^{-9}, which meets the of Target Level of Safety (TLS) of 2.5×10^{-9} fatal accidents per flight hour. It should be noted that this was two times greater than the risk estimated in the 2005 Safety Monitoring Report.

Safety Objective #2 – the risk of a mid-air collision in the vertical dimension in RVSM airspace meets the ICAO overall TLS of 5 x 10^{-9} fatal accidents per flight hour.

5.8 The Group was informed that the next major activity in estimating the overall vertical collision risk involved determining an estimation of the risk due to operational errors. This estimation depends on altitude deviations reported by operational staff in the form of an Altitude Deviation Report (ADR). ADRs from States participating in RVSM have been collected from 1st June 04 until 31st June 06. During this period, 441 ADRs have been received and examined to estimate the operational risk. ADRs have been submitted by 12 different Area Control Centres. Of the 441 ADRs submitted, 152 reports have been used in the analysis. The remainder described errors of less than 300 ft, errors outside the RVSM airspace, errors not related to altitude deviations or errors due to TCAS RA manoeuvres.

5.9 A total of 113 reports out of the 152 correspond to errors caused either by the pilot, the controller or a combination of pilot-controller error. Using the methodology described in the EUR RVSM Post-Implementation Safety Case (POSC) and the selected ADRs, the estimated probability of vertical overlap due to operational errors has been calculated. The value due to atypical errors combined with the appropriate values of horizontal overlap frequency gave the collision risk estimate based only on atypical error data. This was estimated to be 3.67 x 10^{-9} for deviations of aircraft in climb/descent and 0.14 x 10^{-9} for deviations of aircraft in level flight. The total vertical risk due to all atypical errors was 3.81 x 10^{-9} fatal accidents per flight hour.

5.10 For this year's report, a two-year period of post-implementation operational error data has been analysed. When compared with the 2005 Safety Monitoring Report estimations, the increase in this year's operational vertical risk was due to an increase in the component of the risk associated with the atypical errors of aircraft climbing or descending through a flight level. The increase in this component was due to the increase of the pertinent frequency of horizontal overlap as the estimated probability of vertical overlap obtained from these atypical error data is of the same order of magnitude.

5.11 However, when this year's Report estimations are compared with the 2003 Report estimations (0.59×10^{-9}), the big difference is explained by the increase in both elements, the number of atypical errors of aircraft climbing or descending and the frequency of horizontal overlap. The causes for the increase in the frequency of horizontal overlap are currently being investigated and results will be discussed in 2007. Regarding the increase in the number of atypical errors, such increase is considered a consequence of the continuous improvement over the years of the reporting systems implemented in those States that contribute to this Report and it is expected that such number will remain stable over the following years.

5.12 Finally, the effect of future traffic growth on the overall vertical collision risk has also been estimated. The results were of concern as the overall vertical risk was growing at a rate which would prevent the TLS being met in just a few years unless action was taken.

Safety Objective #3 – the continuous operation of RVSM has not adversely affected the overall risk of en-route mid-air collision.

5.13 An assessment of the 113 valid ADRs received from the States, related to technical errors, TCAS nuisance alerts and pilot and controller errors, had shown that, in terms of occurrence frequency, there was an increase regarding ATC and pilot errors in those States:

a) after the EUR RVSM implementation compared to the pre-implementation period; and

b) compared with the 2005 Safety Monitoring report estimations.

5.14 In relation to a), a decision had been made in 2004 to analyse all the altitude deviation reports for operations within the EUR RVSM airspace regardless of whether they were specifically RVSM

related or not. This decision was made because, in an area where 1,000 VSM was the standard, all altitude deviation reports were of significance in the safety assessment. This produced the expected increase in the risk shown in the 2005 report which was justified by reference to the change in the use of the deviation reports.

5.15 Concerning b), the 2006 report shows a further increase over 2005. As the change in assessment methodology was no longer of significance for the year on year increase, there may be other factors that needed to be considered in the assessment. However, such an increase might be explained by a normal fluctuation of the value.

5.16 Therefore, it was not possible to conclude firmly on Safety Objective #3 for the pre-implementation and the post-implementation periods. It was still necessary to continue monitoring the occurrence frequency and initiate an expert consultation on the subject.

The EUR Region RVSM safety monitoring report - Conclusion

5.17 The difficulties encountered in the 2005 calculation of the technical component of vertical collision risk have been repeated in the current report. This appeared to be due to the proportion of Strumble measurements included in the overall measurement set, the 2006 data set having a similar proportion of Strumble data to that of the 2005 report. As a result the Pz(1000) estimation has exceeded the Global System Performance Specification for the second reporting period. In addition to that, the current report has identified another negative influence in the Pz(1000) estimation due to the regrouping of the airframes of some monitoring groups to set new monitoring groups.

5.18 A second value of the probability of vertical overlap has been also estimated using an extended altimetry system error (ASE) module. The result was an estimation that was ten times lower than the probability estimation used in the current Report and that satisfies the Global System Performance Specification. The extended ASE module has been already validated and is expected to be used it in the future.

5.19 Unfortunately there was insufficient information to produce a firm statement on Safety Objective 3. (i.e. that the continuous operation of EUR RVSM has not adversely affected the overall risk of en-route mid-air collision.). Additional monitoring of the occurrence frequency of pilot and controller errors for the next year was recommended as well as a consultation on the results with experts.

5.20 Subject to the limitation of data available and the Collision Risk Models used, it was considered that EUR RVSM operations, in those States that provided data, continued to meet 2 out of 3 Safety Objectives. It was agreed that the concerns about the results for Safety Objective 3 required further monitoring of the situation and expert consultation.

5.21 The final technical review of the 2006 report took place in October at the EUROCONTROL MDG and ANT meetings, where the above findings and concerns were presented. The concerns in respect of the continuing long term achievement of the Overall Target Level of Safety in light of the increasing traffic density, increased navigation accuracy and the increase in reported operational errors have been noted and an in depth review is being carried out for the next ANT Meeting (ANT/42, 27 February to 1 March 2007).

5.22 Finally, for the 10 reporting States, the Group noted that the total vertical risk was estimated, for both technical and operational errors, to be a value of 4.07×10^{-9}, which meets the ICAO overall TLS of 5×10^{-9} fatal accidents per flight hour but amounts to almost twice the risk estimated in the 2005 Safety Monitoring Report (2.49×10^{-9}).

EANPG Decision 48/45 - Status of EUR RVSM Safety Objectives

That the operation of Reduced Vertical Separation Minimum (RVSM) within the airspace of the 10 reporting States in the EUR Region:

a) met Safety Objectives #1 and #2; and

b) had been difficult to assess against Safety Objective #3, due to the increased occurrence frequency of pilot and controller error. It had not been possible to conclude whether or not EUR RVSM has adversely affected the overall risk of en-route mid-air collision for the reporting States.

5.23 The Group discussed the future activities of the RMA and decided as follows:

EANPG Decision 48/46 - Activities of the EUR RMA

That the European Regional Monitoring Agency (RMA):

a) continue collecting post implementation operational error data to support additional overall risk estimations (Safety Objectives #1 & #2) with a view to determine whether the growth in the risk estimates shown in recent years continues and therefore the EUR RVSM Safety Objectives#1 & #2 will ultimately no longer be met;

b) monitor the occurrence frequency of pilot and controller errors (Safety Objective #3) in close consultation with ICAO to determine whether the apparent increase in the occurrence of vertical deviations is real; and

c) consider the outcome of the aforementioned activities in early 2007 and keep EANPG informed of actions identified as being needed.

5.24 The Group expressed its concern that only 10 of the States[1] that have implemented RVSM had complied with the requirement to provide the EUR RMA with reports on all instances of altitude deviations and requested the ICAO Regional Director to address those States and seek information about the mechanism used by the national authorities to ensure the continued safe operation of RVSM within their areas of responsibility.

EANPG Conclusion 48/47 - Provision of data and oversight of altitude deviations

That the ICAO Regional Director

a) remind those States not providing data or providing data but not in a continuous basis to the Regional Monitoring Agency about altitude deviations within their areas of responsibility of their obligation to do so; and

b) seek information from those States not providing data about the mechanism used to oversee the safe operation of RVSM within their area of responsibility.

5.25 The Group considered the possibility that the growth in the risk estimates shown in recent years would continue and therefore the EUR RVSM Safety Objectives#1 & #2 would ultimately no longer

[1] States that report RVSM operational errors today and on a continuous basis to Eurocontrol: United Kingdom, Ireland, France, Denmark and the Maastricht area that includes Belgium, the Netherlands, Luxembourg and the North-West of Germany. In addition to that, the following States have contributed to current RVSM report in a non continuous basis: Italy, Malta and Germany.

be met and decided to invite the COG to analyse such a situation and identify possible actions to ensure safe operation of RVSM in the EUR Region.

EANPG Decision 48/48 - Possible actions to ensure safe operation of reduced vertical separation minimum (RVSM)

That the EANPG Programme Coordinating Group

a) identify possible actions to ensure safe operation of reduced vertical separation minimum (RVSM) in the EUR Region if the Safety Objectives are no longer met; and

b) report to the next meeting of the EANPG.

6. DEFICIENCIES

Safety related deficiencies

6.1 The group agreed that the communication difficulties and confusing coordination experienced by flights operating in the northern part of the Nicosia FIR should be included in the list of deficiencies in the European Region.

6.2 The list of identified deficiencies is in **Appendix O**.

Harmonisation of the flight levels scheme

6.3 The adoption by all States of the International Civil Aviation Organization (ICAO) Flight Level Scheme as contained in Appendix 3 to Annex 2 – Rules of the Air was considered of the highest importance for the safety of air navigation. Regretfully some States had adopted different vertical spacing standards to those contained in ICAO Annex 2. The implementation of reduced vertical separation minimum (RVSM) at the interface area between States using ICAO and non-ICAO compliant flight level schemes had increased safety concerns and causes the loss of several levels resulting in a less efficient operation for aircraft and a loss in airspace capacity. Harmonization of level systems by all States adopting the ICAO Flight Level Scheme should be pursued.

6.4 The results of the ICAO USOAP programme had so far shown no significant progress and no concrete plans to remedy the situation had been presented by States that experienced the above mentioned problems,

EANPG Conclusion 48/49 Harmonised Flight Levels

That:

a) States that have not implemented flight levels schemes in accordance with ICAO SARPs be encouraged to do so as soon as possible; and

b) the deficiency be included in the regional database of air navigation deficiencies that ensures transparency.

WGS-84 implementation

6.5 The Group noted that the geographical coordinates used across various States in the world to determine the position of runways, obstacles, aerodromes, navigation aids and Air Traffic Services (ATS)

routes were based on a wide variety of local geodetic reference systems. With the introduction of Area Navigation (RNAV), the problem of having geographical coordinates referenced to local geodetic datums was more evident and had clearly shown the need for a universal geodetic reference system. ICAO, to address this issue, had adopted in 1994 the World Geodetic System – 1984 (WGS 84) as a common horizontal geodetic reference system for air navigation with an applicability date of 1 January 1998. Many States had implemented, or are implementing the system. Failure to implement or a decision to use an alternative reference system would create a seam in ATM service, and would delay the full realization of GNSS benefits.

6.6 The meeting recalled that the Interstate Aviation Committee (IAC) had been invited by EANPG/46 (Conclusion EANPG 46/42 refers) to coordinate the WGS-84 implementation in the Commonwealth of Independent States (CIS) States by means of consulting, organization of workshops on a regular basis and regularly reporting the progress to the EANPG. At its Forty-Seventh Meeting, the EANPG was briefed on the status of WGS-84 implementation in the CIS States and on the WGS-84 activities carried out during the period 2004-2005 in the Eastern part of the ICAO EUR region and noted with concern that the States in the Eastern part of the ICAO EUR Region, had encountered certain difficulties related to WGS-84 implementation.

6.7 No significant progress had been achieved in this field so far, therefore inclusion of the entry into deficiencies list tables was agreed.

EANPG Conclusion 48/50 WGS-84 implementation

That:

a) States that have not implemented WGS-84 in accordance with ICAO SARPs be encouraged to do so as soon as possible; and

b) the deficiency be included in the regional database of air navigation deficiencies.

7. ANY OTHER BUSINESS

Workshops and Seminars

7.1 The Czech Republic informed the Group that an SMS workshop will be held in Prague from 30th April to 4 May 2007. Another information was provided regarding the aircraft accident prevention and investigation course which will be held in Prague from 16 to 27 April 2007. Detailed information for both events can be found at the following website address www.scsi-inc.com .

Structure of the Civil Aviation Authorities of the Russian Federation

7.2 The Group was informed about changes in the structures, tasks and responsibilities of the Russian Federation.

European Community air traffic controller license

7.3 The Group was informed about the adoption by the European Parliament and Council of a directive on a Community air traffic controller license (*Directive 2003/23/EC of 5.04.2006 on a Community air traffic controller licence, OJ L114/22 of 27.04.2006* refers). This piece of legislation would contribute to the establishment of the regulatory framework of the Single European Sky and would contribute to safety and the cross-border provision of air navigation services.

Airport capacity

7.4 The 2004 “Challenges to Growth” study had revealed that if demand grew just below the current rate, airports would become increasingly constrained by 2025: The lack of airport infrastructure particularly at the top 60 airports risked having detrimental effects on Europe’s economic growth and its competitiveness. The European Commission had decided to address the issue by drafting a communication aiming at building a strategy to deal with the "capacity crunch". This communication would form part of the "airport package" including a proposal for a Directive on Airport Charges and an analysis of the application of the present Ground Handling Directive.

7.5 The adoption of this package was planned by the end of 2006. The Communication would outline the problems and suggest a variety of actions (‘action plan’) to be undertaken in the next 3-5 years. The actions would be situated either with the airports, the Member States or the EU level sometimes with the help of Implementing Rules to be done by EUROCONTROL. The actions were to be based on the principles of better use of existing airport capacity, improved the planning framework for new airport infrastructure, promote “co-modality”, improved air transport safety, and development and implementation of new technologies.

EANPG work programme and associated task list

7.6 The Group agreed on its work programme as contained in **Appendix P**.

EANPG Next Meeting

7.7 The Group agreed to convene its 49th Meeting in the European and North Atlantic Office of ICAO, Paris, on 27-29 November 2007.

APPENDIX A – LIST OF PARTICIPANTS

(Paragraph 0.2 refers)

CHAIRMAN
Mr Dirk NITSCHKE*

BALTIC STATES *(Estonia, Latvia, Lithuania)
Mr Tiago MARTINS (Latvia)

BELARUS *
Mr Leanid N. CHURO
Ms Alena BASIAK

BENELUX*
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Mr Davud AYUTOV (Azerbaijan)
Mr Rufat MEHDIYEV (Azerbaijan)
Mr David GVENETADZE (Georgia)
Mr Igor GORDIENKO (Georgia)
Mr Kakhi KVATASHIDZE (Georgia)

CENTRAL ASIAN STATES* (Kazahkstan, Kyrgyzstan, Tajikistan, Turkmenistan, Uzbekistan)
Mr Sh DJANGAZIEV (Kyrgyzstan)

CYPRUS
Mr Nicos NICOLAOU
Mr Loucas EVGENIOU

CZECH REPUBLIC *
Mr Ladislav MIKA * (Vice-Chairman)

FRANCE *
Mme Geneviève EYDALEINE*
Mr Denis LEMARCHAND
Mr Bertrand HURON#
Mr Olivier MROWICKI#
Mr Denis BOUVIER#

GERMANY *
Mr Bernd RANDECKER
Mr Erland LORENZEN

GREECE *
Mr Vasileios TAGKALOS

HUNGARY
Mr Istvan MUDRA

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Mr Donie MOONEY*
Ms Sinéad QUIRKE

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Mr Pierluigi D'ALOIA*
Mr U. CORVARI#

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Mr Hicham MOUMNI

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Mr Jorma ALAKOSKI*
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Mr Bronislaw NAWROCKI

PORTUGAL *
Mr Artur VENTURA*
Mr Abel PARAIBA
Mr Carlos ALVES

REPUBLIC OF MOLDOVA
Mr Valerian VARTIC

ROMANIA
Mr Bogdan BONDOR-NEGRARU
Ms Aura MARCULESCU
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Mr Ioan DELIANIS
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Mr Dmitriy SAVITSKIY*
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Mrs Elena STEPANOVA
Mr Mikhail PARNEV
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Mr Augustin KLUS

SPAIN *
Mr Jose Antonio RODEA
Mr Juan Manuel GALLARDO

SWITZERLAND *
Mr Kurt MASER*
Mr Bernard SCHWENDIMANN

THE FORMER YUGOSLAV REPUBLIC OF MACEDONIA
Mr Toni PRGOMET

TUNISIA
Mr Omar AYADI

UKRAINE *
Mr Aleksiy PESTERNIKOV
Mr Sergiy TKACH
Ms Nataliya SHABASH
Mr Oleksandr ZUBAREV

UNITED KINGDOM *
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Mr Cesare BERNABEI
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Mr Oleg K. ERMOLOV

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Mr Patrick EXPERTON

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Mr Henk de VRIES
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* Member # part time

APPENDIX B -
GLOBAL PLAN INITIATIVES (GPI)s and
THEIR RELATIONSHIPS TO THE MAJOR GROUPINGS IN THE EUR REGION

(paragraph 4.3 refers)

Global plan initiative (G P I)		En-route	Terminal Area	Aerodrome	Supporting Infrastructure	remarks
GPI-1	Flexible use of airspace	97 – 10				
GPI-2	Reduced vertical separation minima	2000-2012				
GPI-3	Harmonize level systems	2005-2012				
GPI-4	Align upper airspace classifications	99 – 12				
GPI-5	Performance-based navigation	2006 - 2012	2006 – 2012	12 – N/A		
GPI-6	Air traffic flow management	95 – 10				
GPI-7	Dynamic and flexible ATS route management	95 – 10				
GPI-8	Collaborative airspace design and management	03 – 10	2010	2012		
GPI-9	Situational awareness	2003-2012			2003 - 2012	
GPI-10	Terminal area design and management		2003 – 2012			
GPI-11	RNP and RNAV SIDs and STARs		2001 -2012			
GPI-12	FMS-based arrival procedures		2001 – 2012		2001 - 2010	
GPI-13	Aerodrome design and management			2002 -2010	2010	
GPI-14	Runway operations			2001 -2010	2010	
GPI-15	Match IMC and VMC operating capacity			2002 -2010	2002 -2010	
GPI-16	Decision support systems	2001 -2010			2001 -2010	
GPI-17	Implementation of data link applications	2003 – 2010			2003-2010	
GPI-18	Aeronautical information	2002 – 2010			2002 - 2010	
GPI-19	Meteorological systems	2001 – 2010			2001 -2010	
GPI-20	WGS-84	1995 – 2010				
GPI-21	Navigation systems	2001 – 2012	2001 -2012	2012- N/A	2001 - 2012	
GPI-22	Communication network infrastructure	2001-2012			2001-2012	
GPI-23	Aeronautical spectrum	1998-2002	2005-2020	2005 -2020	1998-2020	8.33
		2006-2012				datalinks

(GPI-1) FLEXIBLE USE OF AIRSPACE

Scope: The optimization and equitable balance in the use of airspace between civil and military users, facilitated through both strategic coordination and dynamic interaction.

Related ATM objectives: Airspace desegregation/flexible use of airspace

Actions in Europe to implement GPI No.1	Action by
Implement Flexible Use or Airspace (FUA) Concept Implement collaborative civil-military airspace planning at national level Extend the application of Flexible Use of Airspace (FUA) principles to the lower airspace Harmonise Operational Air Traffic (OAT) and General Air Traffic (GAT) Handling Implement collaborative civil-military airspace planning at European level	**ICAO/Eurocontrol**
EURNAT.D1.07 - Provide assistance in planning for increased airspace usage by developing reduced separation minima and implementation of the Flexible Use of Airspace	**ICAO**

Time schedule

objective	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Implement Flexible Use or Airspace (FUA) Concept															
Implement collaborative civil-military airspace planning at national level															
Extend the application of Flexible Use of Airspace (FUA) principles to the lower airspace															
Harmonise Operational Air Traffic (OAT) and General Air Traffic (GAT) Handling															
Implement collaborative civil-military airspace planning at European level															

(GPI-2) REDUCED VERTICAL SEPARATION MINIMUM

Scope: The optimization of the utilization of airspace and enhanced aircraft altimetry systems.

Related ATM objectives: Reduced vertical separation

Actions in Europe to implement GPI No.2	Agency to carry out the work
Implement reduced vertical separation minima in Europe	**ICAO/Eurocontrol**
Expand RVSM implementation beyond ECAC area and EUR region(Turkmenistan,Afganistan etc)	**ICAO**
EURNAT.D1.07 - Provide assistance in planning for increased airspace usage by developing reduced separation minima and implementation of the Flexible Use of Airspace	**ICAO**
RVSM Monitoring(EURNAT.A1.02 - Continuous monitoring of risk in the EUR/NAT Regions)	**ICAO/Eurocontrol**

Time schedule

objective	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Implement RVSM in Europe															
Expand RVSM implementation beyond ECAC area															

(GPI-3) HARMONIZE LEVEL SYSTEMS

Scope: The adoption by all States of the ICAO Flight Level Scheme based on feet as contained in Appendix 3 to Annex 2 – *Rules of the Air.*

Related ATM objectives: nil

Actions in Europe to implement GPI No.3	Action by
Harmonize flight levels	**ICAO**

Time schedule

objective	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Harmonize flight levels															

(GPI-4) ALIGNMENT OF UPPER AIRSPACE CLASSIFICATIONS

Scope: The harmonization of upper airspace and associated traffic handling through application of a common ICAO ATS Airspace Class above an agreed division level.

Related ATM objectives: nil

Actions in Europe to implement GPI No.4	Action by
Implement re-organisation of ECAC airspace to ensure the application of a common ICAO ATS classification above a common agreed level	**ICAO/Eurocontrol**

Time schedule

objective	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Re-organise ECAC Airspace for Common ICAO Classification n core Europe area															
ICAO compliant airspace classification in non-core areas															

(GPI-5) PERFORMANCE BASED NAVIGATION

Scope: The incorporation of advanced aircraft navigation capabilities into the air navigation system infrastructure.

Related ATM objectives: Application of required navigation performance; Application of required surveillance performance; Reduced longitudinal separation; Reduced lateral separation

Actions in Europe to implement GPI No.5	Action by
Regional level: Increase awareness (organize workshops, training) Implement performance based navigation based on regional requirements Global–regional: Establishment of proper coordination throughout implementation	**ICAO**
Optimise terminal airspace structure through use of best practice and RNAV Implementation of RNP RNAV	**ICAO/Eurocontrol**

Time schedule

objective	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Implement PBN															

(GPI-6) AIR TRAFFIC FLOW MANAGEMENT

Scope: The implementation of strategic, tactical and pre-tactical measures aimed at organizing and handling traffic flows in such a way that the totality of the traffic handled at any given time or in any given airspace or aerodrome is compatible with the capacity of the ATM system.

Related ATM objectives: Centralized ATFM; Inter-regional cooperative ATFM; Establishment of ATFM databases; Application of ATFM strategic planning; Application of pre-tactical ATFM planning; Application of tactical ATFM planning

Actions in Europe to implement GPI No.6	Action by
Implement CFMU to handle ATFM data	**Eurocontrol**
Implement enhanced tactical flow management services based on the introduction of real-time aircraft position and meteorological data to adjust flow regulation.	**ICAO/Eurocontrol**
Expand ATFM into whole EUR area and neighbouring regions	**ICAO**

I

Time schedule

objective	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Implement CFMU to handle ATFM data															
Implement enhanced tactical flow management services based on the introduction of real-time aircraft position and meteorological data to adjust flow regulation.															
Expand ATFM into whole EUR area and neighbouring regions															

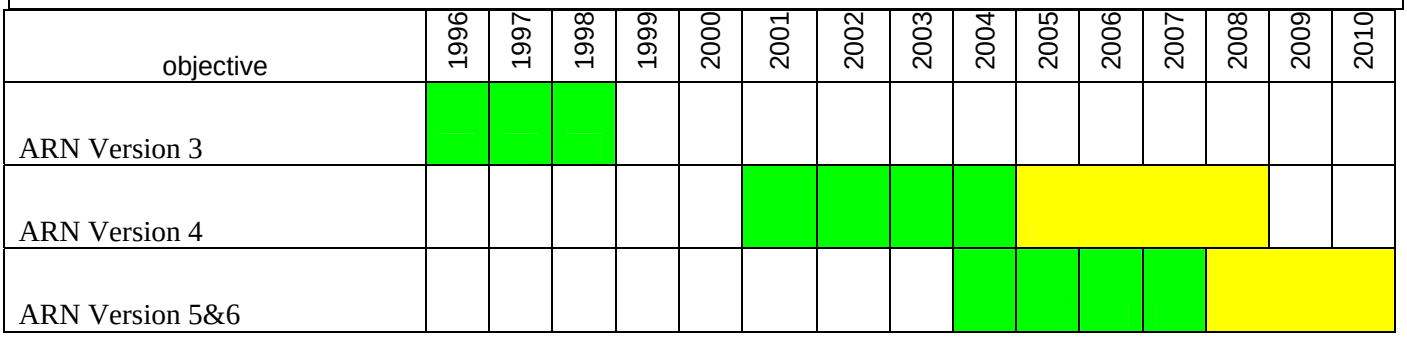
(GPI-7) DYNAMIC AND FLEXIBLE ATS ROUTE MANAGEMENT

Scope: The establishment of more flexible and dynamic route systems, on the basis of navigation performance capability, aimed at accommodating preferred flight trajectories

Related ATM objectives Fixed RNAV ATS routes; Contingency RNAV routes; Random RNAV routes; Application of required Navigation Performance; Dynamic Accommodation of user-preferred flight ; profiles; Trajectory conformance monitoring

Actions in Europe to implement GPI No.7	Action by
EURNAT.D1.01 - Support ATS route network development	**ICAO**
Implement ATS Route network Version 3, 4, 5 and 6	**ICAO/Eurocontrol**

Time schedule



(GPI-8) COLLABORATIVE AIRSPACE DESIGN AND MANAGEMENT

Scope: The application of uniform airspace organization and management principles on a global basis, leading to a more flexible airspace design to accommodate traffic flows dynamically.

Related ATM objectives: Airspace desegregation/flexible use of airspace; Dynamic accommodation of user-preferred flight profiles

Actions in Europe to implement GPI No.8	Action by
Extend FUA with dynamic airspace management Implement collaborative civil-military airspace planning at national level Extend collaborative civil-military airspace planning with neighbours Implement collaborative civil-military airspace planning at European level Implement airport Collaborative Decision Making (CDM)	**ICAO/Eurocontrol**

Time schedule

objective	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Extend FUA with dynamic airspace management															
Implement collaborative civil-military airspace planning at national level															
Extend collaborative civil-military airspace planning with neighbours															
Implement collaborative civil-military airspace planning at European level															
Implement airport Collaborative Decision Making (CDM)															

(GPI-9) SITUATIONAL AWARENESS

Scope: Operational implementation of data link-based surveillance. The implementation of equipment to allow traffic information to be displayed in aircraft supporting implementation of conflict prediction and collaboration between flight crew and the ATM system. Improve situational awareness in the cockpit by making available electronic terrain and obstacle data of required quality.

Related ATM objectives: application of data link; Functional integration of ground systems with airborne ; ADS; ADS-B; SSR Mode S

Actions in Europe to implement GPI No.9	Action by
	ICAO/Eurocontrol
Implement ATC air-ground data link services	
Improve controller/pilot ATS task sharing effectiveness	
Implement Mode S elementary surveillance	
Implement Mode S enhanced surveillance	
Improve ground-based surveillance using ADS-B	

Time schedule

objective	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Implement ATC air-ground data link services															
Improve controller/pilot ATS task sharing effectiveness															
Implement Mode S elementary surveillance															
Implement Mode S enhanced surveillance															
Improve ground-based surveillance using ADS-B															

(GPI-10) TERMINAL AREA DESIGN AND MANAGEMENT

Scope: The optimization of the terminal control area (TMA) through improved design and management techniques.

Related ATM objectives: Application of RNP; Functional integration of ground systems with airborne systems; Independent IFR approaches to closely spaced runways; Curved and segmented approaches; Application of data link; WGS-84

Actions in Europe to implement GPI No.10	Action by
Optimise terminal airspace structure through use of best practice and RNAV	**ICAO/Eurocontrol**
Extend the application of Flexible Use of Airspace (FUA) principles to the lower airspace	
Implement re-organisation of ECAC airspace to ensure a uniform and simplified application of ICAO ATS classes	
Implementation RNP-RNAV	
WGS-84.	
Datalink/MODE-S implementation	

Time schedule

objective	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Optimise terminal airspace structure through use of best practice and RNAV															
Extend the application of Flexible Use of Airspace (FUA)															
Implement re-organisation of ECAC airspace to ensure a uniform and simplified application of ICAO ATS classes															
Implementation RNP-RNAV															
WGS-84.															
Datalink/MODE-S implementation															

(GPI-11) RNP AND RNAV STANDARD INSTRUMENT DEPARTURES (SIDS) AND STANDARD TERMINAL ARRIVALS (STARS)

Scope: The optimization of the terminal control area (TMA) through implementation of RNP and RNAV SIDs and STARs.

Related ATM objectives: Application of RNP; Functional integration of ground systems with airborne systems; RNAV SIDs and STARs; Curved and segmented approaches

Actions in Europe to implement GPI No.11	Action by
Optimise terminal airspace structure through use of best practice and RNAV	**ICAO/Eurocontrol**
Enable implementation of RNAV approach Procedures based on DME/DME and/or Basic GNSS, and RNAV Approach Procedures with Barometric Vertical Guidance (ICAO APV/Baro VNAV)	
Enable implementation of approach procedures with vertical guidance using SBAS (ICAO APV I&II)	
Enable GBAS Cat. 1 based precision approach service	
Implementation of RNP-RNAV	
WGS-84	**ICAO**

Time schedule

objective	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Optimise terminal airspace structure through use of best practice and RNAV															
Enable implementation of RNAV approach Procedures based on DME/DME and/or Basic GNSS, and RNAV Approach Procedures with Barometric Vertical Guidance (ICAO APV/Baro VNAV)															
Enable implementation of approach procedures with vertical guidance using SBAS (ICAO APV I&II)															
Enable GBAS Cat. 1 based precision approach service															
WGS-84															
Implementation of RNP-RNAV															

(GPI-12) FLIGHT MANAGEMENT SYSTEM (FMS)-BASED ARRIVAL PROCEDURES

Scope: The optimization of the terminal control area (TMA) to provide for more fuel efficient aircraft operations through FMS-based arrival procedures

Related ATM objectives: Functional integration of ground systems with airborne systems; RNAV SIDs and STARs; Curved and segmented approaches; Arrival metering, sequencing and spacing; Application of data link

Actions in Europe to implement GPI No.12	Action by
Optimise terminal airspace structure through use of best practice and RNAV	**ICAOEurocontrol**
Enable implementation of RNAV approach Procedures based on DME/DME and/or Basic GNSS, and RNAV Approach Procedures with Barometric Vertical Guidance (ICAO APV/Baro VNAV)	
Enable implementation of approach procedures with vertical guidance using SBAS (ICAO APV I&II)	
Enable GBAS Cat. 1 based precision approach service	
Implementation of RNP-RNAV	
WGS-84	**ICAO**

Time schedule

objective	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Optimise terminal airspace structure through use of best practice and RNAV													
Enable implementation of RNAV approach Procedures based on DME/DME and/or Basic GNSS, and RNAV Approach Procedures with Barometric Vertical Guidance (ICAO APV/Baro VNAV)													
Enable implementation of approach procedures with vertical guidance using SBAS (ICAO APV I&II)													
Enable GBAS Cat. 1 based precision approach service													
WGS-84													
Implementation of RNP-RNAV													

(GPI-13) AERODROME DESIGN AND MANAGEMENT

Scope: The implementation of management and design strategies to improve movement area utilization.

Related ATM objectives: nil

Actions in Europe to implement GPI No.13	Action by
Implement Advanced Surface Movement Guidance and Control System (ASMGCS)Level I	**ICAO/Eurocontrol**
Improve runway safety by preventing runway incursions	**ICAO/Eurocontrol**

Time schedule

objective	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Implement Advanced Surface Movement Guidance and Control System (ASMGCS)Level I													
Improve runway safety by preventing runway incursions													

(GPI-14) RUNWAY OPERATIONS

Scope: Reduce runway occupancy times.

Related ATM objectives: A-SMGCS

Actions in Europe to implement GPI No.14	Action by
Identify and implement feasible capacity enhancing ATM procedures	**ICAO/States**
MET forecasting and reporting for low visibility operations	**ICAO/States**
Implement Advanced Surface Movement Guidance and Control System (ASMGCS)Level I	**ICAO/Eurocontrol**
Improve runway safety by preventing runway incursions	**ICAO/Eurocontrol**
EURNAT.A7.05 - Accommodate EUR development and implementation of A-SMGCS provisions	**ICAO**

Time schedule

objective	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Identify and implement feasible capacity enhancing ATM procedures													
MET forecasting and reporting for low visibility operation													
Implement Advanced Surface Movement Guidance and Control System (ASMGCS)Level I													
Improve runway safety by preventing runway incursions													
EURNAT.A7.05 - Accommodate EUR development and implementation of A-SMGCS provisions													

(GPI-15) MATCH IMC AND VMC OPERATING CAPACITY

Scope: Improve the ability of aircraft to manoeuvre on the aerodrome surface in adverse weather conditions.

Related ATM objectives: A-SMGCS

Actions in Europe to implement GPI No.15	Action by
Identify and implement feasible capacity enhancing ATM procedures	**ICAO/States**
MET forecasting and reporting for low visibility operations	**ICAO/States**
Implement Advanced Surface Movement Guidance and Control System (ASMGCS)Level I	**ICAO/Eurocontrol**
Improve runway safety by preventing runway incursions	**ICAO/Eurocontrol**
WGS-84	**ICAO/Eurocontrol**
EURNAT.A7.05 - Accommodate EUR development and implementation of A-SMGCS provisions	**ICAO**

Time schedule

objective	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Identify and implement feasible capacity enhancing ATM procedures													
WGS-84 implementation													
MET forecasting and reporting for low visibility operation													
Implement Advanced Surface Movement Guidance and Control System (ASMGCS)Level I													
Improve runway safety by preventing runway incursions													
EURNAT.A7.05 - Accommodate EUR development and implementation of A-SMGCS provisions													

(GPI-16) DECISION SUPPORT AND ALERTING SYSTEMS

Scope: Implement decision support tools to assist air traffic controllers and pilots in detecting and resolving air traffic conflicts and in improving traffic flow

Related ATM objectives: Minimum safe altitude warning; Conflict prediction; Conflict alert; Conflict resolution advice; Trajectory conformance monitoring; Functional integration of ground systems with airborne systems

Actions in Europe to implement GPI No.16	Action by
Implement Airborne Collision Avoidance System (ACAS) II	**ICAO/Eurocontrol**
Implement ground based safety nets – STCA Level 2	
EURNAT.D2.02 - Data Link Harmonization	**ICAO**
Implement ATC air-ground data link services (Phase 1)	**ICAO/Eurocontrol**

Time schedule

objective	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Implement Airborne Collision Avoidance System (ACAS) II													
Implement ground based safety nets – STCA Level 2/MSAW/DAIW													
EURNAT.D2.02 - Data Link harmonization													
Implement ATC air-ground data link services (Phase 1)													

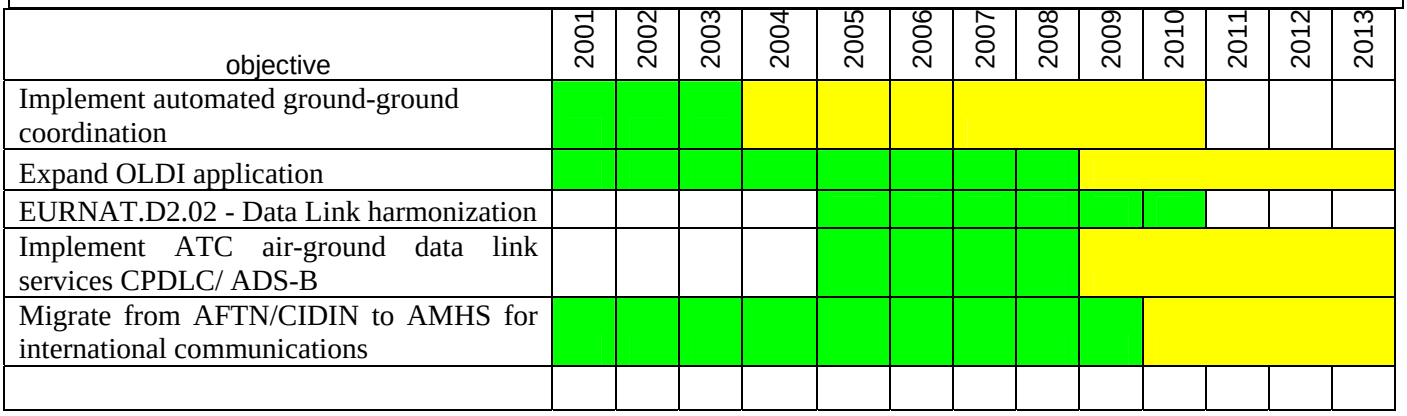
(GPI-17) IMPLEMENTATION OF DATA LINK APPLICATIONS

Scope: Increase the use of data link applications.

Related ATM objectives: Application of data link; Functional integration of ground systems; with airborne systems; ATS inter-facility data communication (AIDC)

Actions in Europe to implement GPI No.17	Action by
Implement automated ground-ground coordination	**ICAO/Eurocontrol**
Implement ATC air-ground data link services CPDLC/ADS-B	**ICAO/Eurocontrol**
EURNAT.D2.02 - Data Link Harmonization	**ICAO**
Expand OLDI application	**ICAO/States**
Migrate from AFTN/CIDIN to AMHS for international communications	**ICAO/Eurocontrol**

Time schedule



(GPI-18) AERONAUTICAL INFORMATION

Scope: To make available in real-time, quality assured electronic information (aeronautical, terrain and obstacle).

Related ATM objectives: Functional integration of ground systems with airborne systems; ATS-inter-facility (AIDC) communications

Actions in Europe to implement GPI No.18	Action by
Implement the European Aeronautical Information Services (AIS) Database	**Eurocontrol**
EURNAT.A2.03 - Monitor and encourage the implementation of e-TOD requirements	**ICAO**
Implement ISO 9001:2000 in AIS	**ICAO/Eurocontrol**
Implement integrated briefing	**Eurocontrol**
Data link implementation	**ICAO/Eurocontrol**
Electronic AIP	**EANPG 47/38**

Time schedule

objective	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Implement the European Aeronautical Information Services (AIS) Database													
EURNAT.A2.03 - Monitor and encourage the implementation of e-TOD requirements													
Implement ISO 9001:2000 in AIS													
Implement integrated briefing													
Data link implementation													
Electronic AIP													

(GPI-19) METEOROLOGICAL SYSTEMS

Objective: To improve the availability of meteorological information in support of a seamless global ATM system.

Related ATM objectives: nil

Actions in Europe to implement GPI No.19	Action by
EURNAT.A7.06 - Overview the transition to BUFR	**EANPG47/27**
EUR volcanic ash contingency plan	**EANPG47/29**
Datalink implementatiom(air-ground and ground-ground)	**ICAO/Eurocontrol**

Time schedule

objective	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
EURNAT.A7.06 - Overview the transition to BUFR													
EUR volcanic ash contingency plan													
Datalink implementatiom													

(GPI-20) WGS-84

Objective: The implementation of WGS-84 by all States.

Related ATM objectives: Implementation of WGS-84

Actions in Europe to implement GPI No.20	Action by
EURNAT.A2.05 - Monitor and encourage the full implementation of WGS-84	**ICAO EANPG47/49**

Time schedule

objective	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
EURNAT.A2.05 - Monitor and encourage the full implementation of WGS-84													

(GPI-21) NAVIGATION SYSTEMS

Scope: Enable the introduction and evolution of performance-based navigation supported by a robust navigation infrastructure providing an accurate, reliable and seamless global positioning capability.

Related ATM objectives: WGS-84; NPA; Precision approach; Required navigation performance

Actions in Europe to implement GPI No.21	Action by
Introduction of P-RNAV	**ICAO/Eurocontrol**
Introduction RNP-RNAV and rationalization of navigation system	
Introduction of GNSS Cat I	

Time schedule

objective	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Introduction of P-RNAV													
Introduction RNP-RNAV and rationalization of navigation system													
Introduction of GNSS Cat I													

(GPI-22) COMMUNICATION NETWORK INFRASTRUCTURE

Scope: To evolve the aeronautical mobile and fixed communication infrastructure, supporting both voice and data communications, accommodating new functions as well as providing the adequate capacity and quality of service to support ATM requirements.

Related ATM objectives: AMSS; HF data; VHF data; SSR Mode S; ATN

Actions in Europe to implement GPI No.22	Action by
EURNAT.D2.02 - Data Link Harmonization	**ICAO**
Implementation of VDL2	**ICAO/Eurocontrol**
Implementation of PEN	
MODE-S implementation	

Time schedule

objective	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
EURNAT.D2.02 - Data Link harmonization													
Implementation of VDL2													
Implementation of PEN													
MODE-S implementation													

(GPI-23) AERONAUTICAL RADIO SPECTRUM

Scope: Timely and continuing availability of adequate radio spectrum, on a global basis, to provide viable air navigation services (communication, navigation and surveillance).

Related ATM objectives: nil

Actions in Europe to implement GPI No.23	Action by
Protection of the aviation spectrum at WRC2007	**ICAO**
SAFIRE frequency management tool implementation	**ICAO/Eurocontrol**
8.3kHz implementation	

Time schedule

objective	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Protection of the aviation spectrum at WRC2007													
SAFIRE frequency management tool implementation													
8.3kHz implementation													
Datalink implementation													

End date is not defined

Project completed or in progress

APPENDIX C –

DRAFT TERMS OF REFERENCE OF THE TRANS-REGIONAL AIRSPACE AND SUPPORTING ATM SYSTEMS STEERING GROUP (TRASAS)

(Paragraph 4.31 refers)

1. Introduction

1.1 In order to continue work already done concerning the traffic in the Northern area and to respond to the new requirements for increased efficiency and further developments, co-ordinated efforts of the international civil aviation community is required. It would involve States and Organisations from four of the ICAO Regions: EUR, ASIA, NAT and PAC. A Trans-Regional Airspace and Supporting ATM Systems Steering (TRASAS) Group shall respond to these requirements under the following Terms of Reference.

2. Purpose and objectives

2.1 The ICAO Trans-Regional Airspace and Supporting ATM Systems Steering (TRASAS) Group shall co-ordinate the requirements of international civil aviation for a coherent and economically viable and operationally optimal structure of ATS routes, linking city-pairs in Europe and Asia, Europe and North America and Asia and North America. The route network shall have sufficient flexibility to plan different flight paths, day-by-day, to take advantage of prevailing upper winds.

2.2 The Group shall work in close co-operation with aircraft operators' international organisations in order to ensure that known and expected requirements for international and domestic routings and cost-effective implementation are taken into account. The Group will also take account of the requirements for adequate feeder and connection routings to enable optimal access to the route network from points of departure and points of destination, upstream, downstream and from within its vicinity. The scope of the work will respond to the global objectives of the ICAO operational concept and support the new ICAO Global Air Navigation Plan Initiatives: GPI-1 (flexible use of airspace), GPI-2 (reduced vertical separation minima), GPI-3 (harmonised level system), GPI-5 (performance-based navigation), GPI-6 (air traffic flow management), GPI-7 (dynamic and flexible ATS route management), GPI-8 (collaborative airspace design and management), GPI-17 (implementation of data-link applications), GPI-20 (WGS-84 implementation), GPI-21 (navigation systems) and GPI-22 (communication network infrastructure).

3. Scope of work

3.1 The TRASAS Group shall make proposals and promote improvements for the safety and efficiency of the Northern area route structure and the supporting ATM systems within the States affected by such proposals. It shall base its work on aircraft operators' requirements, which may be expanded and complemented, as necessary.

3.2 The Group shall take into account modern space based technology (GPS/GLONASS/GNSS and ADS) in accordance with the ICAO CNS/ATM system concept and plan for an orderly transition period. This transition period should enable a seamless migration of current aircraft fleets to full CNS/ATM compliance on such routes in the future. TRASAS shall consider an equitable cost recovery scheme for the established route system in accordance with ICAO provisions in line with Article 15 of the Chicago Convention.

3.3 The Group shall not substitute itself for other existing bodies which are active under the auspices of ICAO (e.g. European Air Navigation Planning Group (EANPG), North Atlantic Systems Planning Group (NAT SPG), ASIA/PAC Air Navigation Planning and Implementation Regional Group (APANPIRG), etc.) or bodies operating as bilateral/multilateral State initiatives. It may provide guidance as well as a co-ordinating function for these Groups working on the various technical and operational aspects related to the intended transit route network and to combine the results into one coherent overall plan. This will lead to the amendment, if and when required, of the ICAO Regional Air Navigation Plan (ANP) in accordance with procedures established by the ICAO Council.

3.4 In addition to its technical work on the newly established route system, the TRASAS Group shall explore proposals for financing and cost recovery for this system.

4. Activities

- To promote a modern, efficient and cost-effective international ATS route network linking city-pairs in Europe, Asia and North America, taking into account the recognized requirements of the airspace users, taking advantage of seasonal wind patterns, and making use of space-based technology in accordance with the ICAO CNS/ATM system concept.

- To promote efficient air traffic management and associated systems to improve safety, increase capacity and enhance operational and economic efficiency.

- To promote the provision of sufficient capacity so as to avoid the need for air traffic flow management (ATFM).

- To develop a coherent transition plan enabling a seamless migration of current aircraft fleets to full CNS/ATM compliance on such routes in the future.

- To promote the establishment of a minimum number of suitably equipped Area Control Centres (ACC) and an infrastructure adequate to provide the required air traffic services along the proposed ATS route structure.

- To promote suitable financing and cost recovery mechanisms for the newly established route system in accordance with the applicable ICAO provisions and in line with Article 15 of the Convention on International Civil Aviation (Chicago, 1944).

- To analyse the costs and benefits achieved by individual ATS routes of the newly established route system to determine their eligibility for inclusion into the ICAO Regional Air Navigation Plan.

4.1 TRASAS may establish Contributory Working Bodies (CWB) that shall work on its behalf on specific expert issues (route network developments, RVSM implementation, communications, airport issues etc).

5. Composition

5.1 The TRASAS Group shall be composed of representatives with operational and technical, expertise from Canada, China, Democratic People's Rep. of Korea, Denmark, Finland, Iceland, Japan, Mongolia, Norway, Republic of Korea, Russian Federation, United States and from international organisations (e.g. IACA, IATA, IBAC, IFALPA).

5.2 The TRASAS Group shall work under the auspices of ICAO. The EUR/NAT Office shall provide full secretarial support to the Group.

5.3 The Group may invite participation from other States which may be concerned during the progress of its work (e.g. States in Central Asia, in the South Caucasus area, and others) and international organizations which may provide useful input during its deliberations.

6. Reporting

6.1 Reports of the TRASAS shall be prepared by the ICAO Secretariat in the usual standard fashion. As reports of an informal group, this documentation will be made available to participating States and international organization(s) and shall be distributed to the Regional Planning Groups [in particular the European Air Navigation Planning Group (EANPG), the Middle East Air Navigation Planning and Implementation Regional Group (MIDANPIRG), the Asia/Pacific Air Navigation Planning and Implementation Regional Group (APANPIRG) and North Atlantic Systems Planning Group (NAT SPG) for their information and to facilitate co-ordination which may be required within their respective work programmes.

7. Communication

7.1 As far as possible, members and participants in the work of TRASAS shall correspond by electronic mail. Their communications should be as informal as possible to ensure rapid progress of the work programme.

8. Target dates and deliverables

8.1 TRASAS shall establish a comprehensive work programme containing target dates and milestones to be achieved. It should strive to complete its tasks in the shortest possible time.

APPENDIX D -

DRAFT PROPOSAL TO AMEND THE ICAO EUR REGIONAL SUPPLEMENTARY PROCEDURES (Doc 7030)

Proposal: add the following paragraph:

20.0 ADVANCED SURFACE MOVEMENT GUIDANCE AND CONTROL SYSTEMS (A11 - 3.8, P-ATM - 7.11)

Note: For further information, see the Manual on Advanced Surface Movement Guidance and Control Systems (A-SMGCS, Doc 9830).

20.1 Definitions

Advanced surface movement guidance and control systems (A-SMGCS). A system providing routing, guidance and surveillance for the control of aircraft and vehicles in order to maintain the declared surface movement rate under all weather conditions within the aerodrome visibility operational level (AVOL) while maintaining the required level of safety.

A-SMGCS alert. An indication of an existing or pending situation during aerodrome operations, or an indication of an abnormal A-SMGCS operation, that requires attention and/or action.

Note.- The term alert covers warnings, cautions, advisories and alarms reflecting different levels of urgency or equipment performance.

20.2 General

20.2.1 A-SMGCS shall provide for the detection and display of the movement of all aircraft on the movement area as well as the identity of all suitably equipped aircraft.

20.2.2 A-SMGCS shall enable the detection and display of the movement of all vehicles on the manoeuvring area as well as the identity of all suitably equipped vehicles.

20.3 Functions

20.3.1 The information provided on an A-SMGCS display may be used for the purpose of:

a) determining the location of aircraft on the movement area and vehicles on the manoeuvring area;

Where visual observation by the aerodrome controller is not possible, or whenever deemed beneficial by the aerodrome controller, the information provided by A-SMGCS may be used to replace visual observation.

b) monitoring aircraft and vehicles on the manoeuvring area for compliance with clearances and instructions;

c) determining that a runway is clear of traffic or assisting in the assessment that a runway will be clear of traffic prior to a landing or take-off;

d) providing information on essential local traffic on or near the manoeuvring area;

e) providing directional taxi information to aircraft when requested by the pilot or deemed necessary by the controller. Such information should not be issued in the form of specific heading instructions (except in special circumstances, e.g. emergencies); *and*

f) providing assistance and advice to emergency vehicles.

20.4 A-SMGCS Alerts

20.4.1 Local instructions concerning use of the A-SMGCS alerting function, where available, shall specify, *inter alia*:

a) The categories of aircraft and vehicles which are eligible for generation of alerts;
b) The areas of the manoeuvring area within which the alerting function is implemented;
c) The method of displaying the alerts to the controller;
d) The warning criteria, for the generation of alerts, that could depend on meteorological situations or type of operation being conducted, as well as alert warning time;
e) Conditions under which the alert function may be inhibited.

20.4.2 In the event an alert is generated, the controller should without delay assess the situation and take appropriate action as required.

20.4.3 The appropriate ATS authority should retain electronic records of all alerts generated for the purpose of analysis and to improve overall safety levels.

20.5 A-SMGCS identification procedures

Note: See PANS-ATM, paragraph 8.5.3, "Operation of SSR transponders".

20.5.1 Where A-SMGCS is used, identification of aircraft and vehicles shall be established by at least one of the following methods:

a) recognition of the aircraft identification, of a Mode S equipped aircraft, in an A-SMGCS display label derived from one of the following:
   i) the aircraft identification preset in the FMS or Mode S transponder control panel
   ii) a discrete Mode A code preset in the Mode S transponder control panel

   Note: The use of this procedure requires that the code/call sign correlation is achieved successfully and requires a system of code assignment which ensures that each aircraft is assigned a discrete Mode A code.

   iii) the aircraft address in conjunction with the use of a Mode A conspicuity code,

   Note: The use of this procedure requires that the aircraft address/call sign correlation is achieved successfully through the use of a system whereby individual aircraft addresses are automatically associated to specific corresponding and locally stored aircraft identifications.
b) recognition of a suitably-equipped vehicle's identification in an A-SMGCS label;
c) where recognition of the aircraft identification in an A-SMGCS label is not possible, observation of compliance with an instruction to set a discrete Mode A code,

   Note: This procedure is available to address situations where code/callsign correlation is not possible as a result of, for instance, lack of a flight plan.
d) observation of compliance with an instruction to TRANSMIT ADS-B IDENT.

APPENDIX E -
ICAO Provisions in Support of
Procedures for Reduced Aerodrome Visibility Conditions

Proposal to Amend the ICAO EUR Regional Supplementary Procedures (Doc. 7030)

(Paragraph 4.39 refers)

21.1 Definitions

Reduced aerodrome visibility conditions. Meteorological conditions such that all or part of the manoeuvring area cannot be visually monitored from the aerodrome control tower.

Low visibility procedures (LVP). Specific procedures applied at an aerodrome for the purpose of ensuring safe operations during category II and III precision approaches and/or departure operations in RVR conditions less than a value of 550 m.

Visibility Conditions:

Visibility condition 1. Visibility sufficient for the pilot to taxi and to avoid collision with other traffic on taxiways and at intersections by visual reference, and for personnel of control units to exercise control over all traffic on the basis of visual surveillance.

Visibility condition 2. Visibility sufficient for the pilot to taxi and to avoid collision with other traffic on taxiways and at intersections by visual reference, but insufficient for personnel of control units to exercise control over all traffic on the basis of visual surveillance.

Visibility condition 3. Visibility sufficient for the pilot to taxi but insufficient for the pilot to avoid collision with other traffic on taxiways and at intersections by visual reference, and insufficient for personnel of control units to exercise control over all traffic on the basis of visual surveillance. For taxiing, this is normally taken as visibilities equivalent to an RVR of less than 400 m but more than 75 m.

Visibility condition 4. Visibility insufficient for the pilot to taxi by visual guidance only. This is normally taken as a RVR of 75 m or less.

Note.- For the purpose of describing the provision of an aerodrome control service in the context of varying visibilities, four ~~(4)~~ visibility conditions are defined. Criteria for determining the transition between visibility conditions are a function of local aerodrome and traffic characteristics and will be established by the appropriate ATS Authority.

21.2 Control of aerodrome traffic during Reduced Aerodrome Visibility Conditions
(A11 - 3.8.2, P-ATM, 7.11)

21.2.1 The following procedures shall be applied to those parts of the manoeuvring area that cannot be visually monitored from the control tower due to reduced aerodrome visibility conditions.

21.2.1.1 When there is a requirement for traffic to operate on the manoeuvring area in visibility insufficient for personnel of control units to exercise control over all traffic on the basis of visual surveillance, ATC shall provide pilots and vehicle drivers with instructions and information to enable them

to navigate and to avoid collisions with other relevant traffic by visual reference. In visibility condition 2, such instructions and information can be derived from the use of A-SMGCS, where available.

21.2.1.2 During visibility conditions 3 and 4, at the intersection of taxiways, an aircraft or a vehicle shall not be permitted to hold closer to the other taxiway than the holding position limit defined by a clearance bar, stop bar or taxiway intersection marking according to the specifications in Annex 14, Volume I, Chapter 5. During visibility conditions 3 and 4, A-SMGCS, where available, can be used to determine the position of aircraft and vehicles on the manoeuvring area.

21.2.1.3 Procedures shall be established for each particular aerodrome, by the appropriate ATS authority, to ensure that successive aircraft on the same taxiway are able to stop at defined intermediate holding positions without visual reference to preceding traffic. The location of these intermediate holding positions should take into account the characteristics of the aids available for surveillance and control of ground traffic, the complexity of the aerodrome layout and the characteristics of the aircraft using the aerodrome.

Note.— The Manual of Surface Movement Guidance and Control Systems (SMGCS) (Doc 9476) *and the* Advanced Surface Movement Guidance and Control Systems (A-SMGCS) Manual (Doc 9830) *provide guidance on surface movement guidance and control components and procedures.*

Low visibility procedures

21.2.2 The appropriate ATS authority shall establish low visibility procedures (LVPs) when it is planned to conduct category II/III approach and landing operations and/or departure operations in RVR conditions less than a value of 550 m.

Note.- In accordance with Annex 15, Appendix 1, the general conditions under which the low visibility procedures applicable to Cat II/III operations at aerodromes are applied, are to be published in the AIP, AD 1.1.

21.2.3 Established LVPs shall be in operation whenever category II/III approach and landing operations and/or departure operations are in progress in RVR conditions less than a value of 550 m

21.2.4 In addition to the provisions specified in PANS-ATM, 7.11.2., provisions regarding LVPs should specify:

a) the requirement to inform the flight crews that LVP are in operation and to inform them when LVP are cancelled;

b) applicable spacing between successive arriving and/or departing aircraft to ensure protection of the sensitive and critical areas;

c) any ATFM measures to be implemented.

Note.— Further information can be found in the Air Traffic Services Planning Manual *(Doc 9426) and the* All Weather Operations Manual *(Doc 9365).*

APPENDIX F -
PROPOSAL FOR AMENDMENT TO THE ICAO PANS-ATM
(Doc. 4444)

(Paragraph 4.55 refers)

15.3 AIR-GROUND COMMUNICATIONS FAILURE

. . .

Note 5.— General communications procedures for aircraft and aeronautical stations experiencing communications failure are contained in Annex 10, Volume II, 5.2.2.7.

. . .

15.3.5 When air-ground communications cannot be established after a communication should have been received from an aircraft and/or the appropriate ATS unit or radio station have made unsuccessful attempts to establish communication (including attempts on the emergency frequency 121.5 MHz), the ATS unit concerned shall inform the appropriate authorities. The ATS unit shall keep the appropriate authorities informed of actions taken by the aircraft, and actions taken by the ATS unit with respect to the aircraft, as well as any further action intended.

15.3.~~5~~6 ~~As soon as~~ When it is known that ~~two-way communication has failed~~ a communications failure exists, appropriate information describing action taken by the air traffic control unit, or instructions justified by any emergency situation, shall be transmitted blind for the attention of the aircraft concerned, on the frequencies available on which the aircraft is believed to be listening, including the voice frequencies of available radio navigation or approach aids. Information shall also be given concerning:

. . .

15.3.~~6~~7

[Renumber the following paragraphs]

ICAO Paris - Capacity Projections for Aviation Frequency Bands in EUR/NAT Regions

last update 9/09/06 by EANPG Frequency Management Group

Legend	
1	all known requirements are satisfied
2	outstanding requirements in areas of saturation can only be accommodated with great difficulty
3	OUTSTANDING UNSATISFIED REQUIREMENTS in areas of saturation
?	insufficient data available to make an assessment

				Previous 4 years						Projections for next 20 years																
	Band	**Service**	***Notes***	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
1	90 -110 kHz	LORAN-C		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2	130 – 526.5 kHz	NDB		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
3	2850 – 22000 kHz	HF COM		3	3	3	3	3	3	3	3	3	3	3	2	2	2	2	2	1	1	1	1	1	1	1	1	1
4	74.8 – 75.2 MHz	Marker Beacon		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
5	108 – 111.975 MHz	ILS LOC/VOR + GBAS	*1*	2	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3									
6	111.975 - 117.975	VOR + GBAS	*1*	2	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3									
7	117.975 – 137 MHz	VHF COM	*2?*	3	3	3	3	3	3	3	3	3	3	3 ?	3 ?	3 ?	3 ?	3 ?	3 ?	3 ?	3 ?	3 ?	3 ?	3 ?	3 ?	3 ?	3 ?	4 ?
8	328.6 – 335.4 MHz	ILS GP		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
9	406 – 406.1 MHz	ELT		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
10	960 – 1215 MHz	DME/GNSS	*1*	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
11	1030 MHz	SSR GA/ACAS		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
12	1090 MHz	SSR AG/ACAS		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
13	1215 – 1400 MHz	Primary radar		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
14	1545 – 1555 MHz	SAT COM	*3*	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
15	1559 – 1610MHz	GNSS		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
16	1646.5 – 1656.5 MHz	SAT COM	*3*	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
17	2700 – 3100 MHz	Radar (Pri Surveillance)		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
18	4200 – 4400 MHz	RadioAlt		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
19	5030 – 5150 MHz	MLS	*1*	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
20	5350 – 5470 MHz	Radar (weather)		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
21	8750 – 8850 MHz	Radar (doppler)		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
22	9000 – 9500 MHz	radar(ASDE+PAR)		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
23	13.25 – 13.4 GHz	Radar (doppler)		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
24	15.4 – 16.6 GHz	ASDE		2	2	2	2	2	2	2	2	2	2	2	2	2	2	?	?	?	?	?	?	?	?	?	?	?
25	31.8 – 33.4 GHz	ASDE		?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?

Note 1 The pairing arrangement that links ILS, VOR, DME and MLS frequency allocations reduces the flexibility and effeciency of frequency allocations in those bands

Note 2 ? Full implementation of 8.33 kHz in all airspace (controlled and un controlled) will probably meet aviation needs in the 117.975 - 137 MHz AM(R)S band until about 2020, however the current agreed partial implementation plans (above FL 195 in 2009) will not catch up with the demand.

Note 3 Low aviation utilization, but there are problems in getting more access due to non aviation users operating in the band

	Band	Service	Description
1	90 -110 kHz	LORAN-C	long range air navigation system (LORAN) – C
2	130 – 526.5 kHz	NDB	non-directional radio beacon (NDB) and Locator
3	2850 – 22000 kHz	HF COM	A-G communications (HF voice and data)
4	74.8 – 75.2 MHz	Marker Beacon	radio marker beacon
5	108 – 111.975 MHz	ILS LOC/VOR + [GBAS]	ILS localizer and VOR (+ ground-based augmentation systems (GBAS) on a secondary basis)
6	111.975 - 117.975	VOR + [GBAS]	VOR (+ GBAS on a secondary basis)
7	117.975 – 137 MHz	VHF COM	A-G and A-A communications (VHF voice and data)
8	328.6 – 335.4 MHz	ILS GP	ILS glide path
9	406 – 406.1 MHz	ELT	emergency locator transmitter (ELT)
10	960 – 1215 MHz	DME/GNSS	DME and TACAN (+ GNSS on a secondary basis)
11	1030 MHz	SSR GA/ACAS	ground-air secondary surveillance radar (SSR) and airborne collision avoidance system (ACAS)
12	1090 MHz	SSR AG/ACAS	air-ground secondary surveillance radar (SSR) and airborne collision avoidance system (ACAS)
13	1215 – 1440 MHz	Primary Radar	global navigation satellite system (GNSS) and primary surveillance radar
14	1545 – 1555 MHz	SAT COM	satellite communications
15	1559 – 1610 MHz	GNSS	GNSS
16	1646.5 – 1656.5 MHz	SAT COM	satellite communications
17	2700 – 3100 MHz	Radar - Pri Surviellance	primary surveillance radar
18	4200 – 4400 MHz	RadioAlt	radio altimeter (RadioAlt)
19	5030 – 5250 MHz	MLS	microwave landing system (MLS) 'core band'
20	5350 – 5470 MHz	Radar - weather	airborne weather radar
21	8750 – 8850 MHz	Radar - doppler	airborne doppler radar
22	9000 – 9500 MHz	radar(ASDE+PAR)	airport surface detection equipment (ASDE) and other systems
23	13.25 – 13.4 GHz	Radar - doppler	airborne doppler radar
24	15.4 – 16.6 GHz	ASDE	ASDE
25	31.8 – 33.4 GHz	ASDE	ASDE

APPENDIX H -
IMPLEMENTING THE ICAO LANGUAGE PROFICIENCY REQUIREMENTS
(RECOMMENDED ACTION PLAN)

(Paragraph 4.98 refers)

Note: State – national legal and/or regulatory authority responsible for adoption and implementation of ICAO Standards (Annex 1).
ANSP (Air navigation Service Provider) – organization or entity responsible for the provision of air traffic services (Annex 11).
AO (Airline Operator) – airline or the company responsible for the flight operations (Annex 6).

N	ACTIVITY	RESPONSIBLE BODY/*DATE*	REMARKS
	Phase 1: Actions to reach Level 4 proficiency		
1.	Ensure all stakeholders (pilots, controllers, language teachers, regulators etc.) are familiar with the ICAO language proficiency requirements.	States, ANSPs, AOs. *As soon as possible in case States have failed to do it until now.*	Conduct workshops, seminars, meetings at national and regional level.
2.	Adopt/incorporate the ICAO language proficiency requirements (Amendment 164 to Annex 1) into national legislation.	States *As soon as possible in case States have failed to adopt them until now.*	
3.	Nominate contact person(s) within States, airlines and ANSPs to be responsible for coordination of matters at the national level dealing with the implementation of the ICAO language proficiency requirements.	States, ANSPs, AOs. *As soon as possible in case States have failed to do it until now.*	
4.	Establish a plan to coordinate administrative and training matters (~~entry~~ testing, number of personnel to be trained, training centres, duration of training, etc.).	States, ANSPs, AOs. *As soon as possible in case States have failed to do it until now.*	
5.	Develop/select test(s) to meet ICAO language proficiency requirements.	States, ANSPs, AOs. *As soon as possible.*	Ensure test meets requirements of the ICAO Doc 9835. *See Note 1 below the table.*
6.	For the selected test(s): select and train personnel to administer, conduct and rate the test: • determine the minimum level of proficiency for testing personnel; • provide initial and refresher training in the specialist functions required of testing; and • establish a programme of accreditation for selected	States, ANSPs, AOs. *As soon as possible once a test(s) has (have) been selected, but not later than 05 March 2008.*	*See Note 2 ~~and Note 3~~ below the table for desired profiles and requirements.*

N	ACTIVITY	RESPONSIBLE BODY/*DATE*	REMARKS
	testing personnel.		
7.	Obtain certification and/or accreditation of selected test(s) as "an acceptable means of compliance" from national supervisory authority (regulator/CAA)	States, ANSPs, AOs. *As soon as possible once a test(s) has (have) been selected, but not later than 05 March 2008.*	
8.	Assess current language proficiency level of controllers and pilots, according to the ICAO rating scale.	States, ANSPs, AOs. *As soon as possible in case States have failed to do it until now.*	Determine magnitude of problem, address individual training needs.
9.	Develop language training packages designed to close the gap between current language proficiency level and ICAO Level 4.	States, ANSPs, AOs, providers of language training. *As soon as possible in case States have failed to do it until now.*	Training package includes: plan, syllabus, materials, and methods. Language training should be considered in context of job. Note: performance below level 3 will require more general language teaching. Aviation specific language training should be introduced once the ICAO level 3 has been attained.
10.	Assess the financial implications needed to meet ICAO language proficiency requirements. Determine if assistance is required and how it might be obtained.	States, ANSPs, AOs. *As soon as possible in case States have failed to do it until now.*	Refer to ICAO Doc 9835 chapter 1.3 for guidance on assistance with training programmes. *See Note 1 below the table.*
11.	Identify social issues resulting from implementation of the ICAO language proficiency requirements and prepare measures to resolve these issues.	States, ANSPs, AOs and social partners. *As soon as possible.*	
12.	Familiarize pilots and controllers with the format of the test(s) and procedures for administration of the test.	ANSPs, AOs. ~~*As soon as possible once the test has been selected.*~~ *Before testing.*	Organise briefings and make sample tests available for pilots and controllers.
13.	Develop language training package to maintain language proficiency and a schedule of language refresher training.	ANSPs, AOs. *In place before 05 March 2008.*	Ensure that current Level 4 is not eroded (could be included in refresher training programmes).
14.	Review recruitment and selection procedures and consider a minimum of at least ICAO level 3 in language proficiency before entry to professional training programmes.	Training establishments, ANSPs, AOs. Not later than 2007.	

N	ACTIVITY	RESPONSIBLE BODY/*DATE*	REMARKS
15.	Implement language awareness programmes to ensure that native and expert speakers of English communicate in a manner that is easily understandable to non-native speakers of English (proficient at ICAO Level 4).	States, ANSPs, AOs. *Not later than 05 March 2008.*	Applies equally where other languages are used in aeronautical communication.
16.	Present preliminary reports to ICAO on progress achieved in preparing for implementation of ICAO language proficiency requirements.	States ~~2005,~~ 2006, 2007	~~*Note: The relevant survey on the status of implementation of LP requirements is being developed by ICAO.*~~
	Phase 2: Actions to maintain Level 4 (or higher) proficiency		
17.	Implement testing of pilots and controllers.	States, ANSPs, AOs. *Before 05 March 2008.*	
18.	Implement language proficiency maintenance programmes (see item 13 above)	States, ANSPs, AOs. *Before 05 March 2008.*	
19.	Extend language testing and training programmes to all pilots and controllers unable to meet the 05 March 2008 deadline.	States, ANSPs, AOs. ~~*After 05 March 2008.*~~ *2009*	
20.	Present a final report to ICAO on implementation of ICAO language proficiency requirements.	States *Before 05 March 2008*	

Note1: ICAO Doc 9835 – manual on Implementation of ICAO Language Proficiency Requirements provides guideline material and valuable information on preparing training and testing programmes.

Note 2: Suggested profiles for personnel to administer, conduct and rate tests:

~~***Tester/Rater*** *– ATC or pilot instructor or language teachers with previous experience of administering professional tests/examinations.~~

~~*Level of language proficiency = 5 or above.*~~ *a person with the English language level proficiency and experience in aviation adequate to evaluate all levels and elements of the ICAO Language Proficiency Rating Scale;*

Interlocutor ~~*(for tests involving an oral interaction) – ATC or pilot instructor or language teachers very familiar with aviation terminology and with training and experience in interlocution techniques. Level of language proficiency = 6.*~~ *- a person with the English language level proficiency and experience in aviation adequate to conduct the selected test (tests);*

Administrator *– a person familiar with the preparation and conduct of tests/examinations e.g. logistics, security, candidate briefing (could be any of above persons).*

~~*Note3: States in the Eastern Part of the ICAO EUR Region undertake maximum efforts in order their raters and testers will be able to meet the requirements on Language Proficiency, mentioned in item 6 of the Plan, as soon as possible, but at any case, Level 5 of Language Proficiency is a minimum one for any rater on the initial stage.~~

APPENDIX I -
ICAO POLICY ON LANGUAGE PROFICIENCY TESTING

(Paragraph 4.101 refers)

1. INTRODUCTION

1.1 This paper specifies ICAO's policy concerning test design, delivery and rating of plain language in accordance with the Organization's language proficiency requirements. Testing, as discussed in this Paper is used to determine whether pilots and controllers demonstrate language proficiency sufficient for safe and efficient radiotelephony communications in accordance with paragraph 1.2.9 of Annex 1. It is recognized that some variations in test format, delivery and content will be necessary, depending on the purpose of the test (selection, benchmarking, licensing, currency) or the point in time when a test is delivered during the training process. While the criteria discussed in this paper could apply, in part or in full, to most testing purposes, the focus is on the proficiency test required by Annex 1 for pilots and air traffic controllers (initial and recurrent) as they involve the highest stakes.

1.2 The quality of a test depends on its ability to assess all language skills of the ICAO rating scale and holistic descriptors in a satisfactory manner, while respecting best practices in language testing. Quality assurance of test design therefore depends on the setting of clear minimum criteria against which test features should be evaluated.

2. TEST CONTENT

2.1 Because of the high stakes involved, pilots and controllers deserve to be tested in a context similar to that in which they work and test content should therefore be relevant to their roles in the work-place. The descriptors for Vocabulary and Comprehension for ICAO Operational level 4 refer to "work-related topics". The design of tests should be undertaken by a team of at least one linguistic and one operational expert to ensure validity, reliability and operational relevance. Tests should provide candidate test-takers with sufficient and varied opportunities to use plain language in aviation work-related contexts in order to demonstrate their ability with respect to each descriptor in the Language Proficiency Rating Scale and the Holistic Descriptors. To achieve this, the design of tests should be undertaken by a team of linguistic and operational subject matter experts.

2.2 The Note found in the Appendix to Annex 1 indicates that the holistic descriptors and rating scale apply to the use of phraseology as well as plain language. However, just as testing of ICAO phraseology cannot be used to assess plain language proficiency, neither can English language proficiency tests be used to test ICAO standardized phraseology.

2.3 It is acceptable that a test include a scripted test task in which phraseology is included in a prompt. The test task may be used as a warm up or an ice-breaker and elicit a plain language response from the test taker. Because of the high stakes involved, pilots and controllers deserve to be tested in a context similar to that in which they work, and test content should be relevant to their roles in the work-place. Test prompts should not be intended to evaluate specific technical knowledge concerning operations. For example, prompts such as "What is the separation minima for aircraft being vectored for an ILS approach?", or "Describe the different flight modes of the A320 flight control system" are not acceptable.

3. INITIAL AND RECURRENT TESTING

3.1 A flexible approach to the implementation of assessment of plain language proficiency is required to accommodate the variety of personnel to be tested, their background and the scope of testing in different States.

3.2 The licensing process involves two testing events: initial and recurrent testing. The flowcharts in Attachment A describe this process in more detail.

3.3 Initial Testing

3.3.1 When the test taker is expected to be at level 6 such as E1 speakers or because of previous training and experience, the initial language test can be delivered by trained and qualified operational examiners (flight or ATC examiners). If level 6 cannot be confirmed for a test taker, then the test-taker should undergo initial specialized language testing.

3.3.2 All non expert speakers should undergo initial specialized language testing.

3.4 Recurrent Testing

3.4.1 For personnel rated at Levels 5 or 4, recurrent specialized language testing should be used. However, Contracting States may authorize that recurrent testing be done by operational examiners (flight or ATC examiners) through operational tests, provided that the test-takers demonstrate that they have used English in the aviation context beyond and apart from ICAO phraseology. Operational examiners carrying out recurrent testing should be trained to verify that level 5 or 4 have been maintained. If Level 5 or 4 are not maintained, the test-taker should undergo specialized language testing to determine whether he/she has progressed or lost proficiency at either levels 4 or 5.

3.4.2 Operational examiners assessing plain language as part of an operational assessments will require training in the application of the ICAO rating scale, and the identification of evidence to support their rating. They will also need to meet minimum qualifications and comply with the appropriate competency requirements. The plain language assessment during operational testing should comply with the test design criteria stated above.

3.4.3 Similarly, linguistic experts involved in specialised language testing should be trained for the delivery of scripted test prompts involving ICAO phraseology, and acquire a minimum range of aviation vocabulary related to common, concrete and work-related topics.

3.4.4 Consistency among rating teams should also be carefully monitored in order to avoid unacceptable levels of rating variance. The rater training of personnel involved in the rating process is the key to achieving consistency.

3.4.5 The test rating process for each test should be documented and should include instructions on the extent and nature of evidence that raters should collect.

4. TEST DELIVERY

4.1 While a test design may have demonstrated its reliability through trialling, the way in which it is delivered may impact its reliability and invalidate test results. Personnel delivering the test, or interlocutors, play a key role in the testing process and use specific skills. For example, interlocutors ensure

that all test-takers are prompted in a fair and consistent manner. The standardized delivery of the test is therefore critical to its reliability and interlocutors should undergo training to that end.

5. RECORD KEEPING

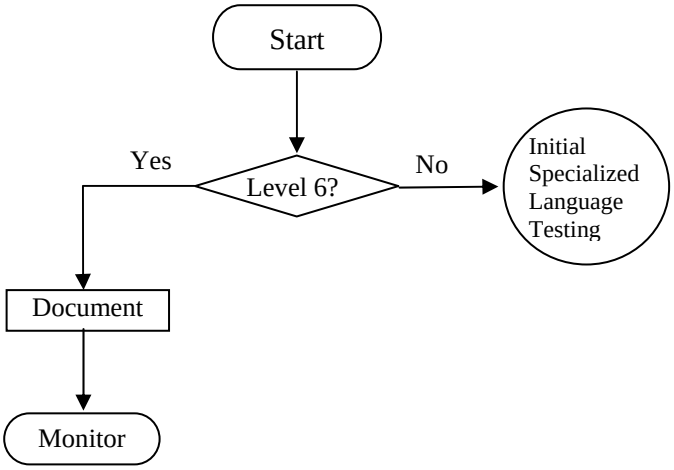
5.1 The test record and rating rationale should be kept until a predetermined and documented period of time elapses and until such time as the rating decision can no longer be appealed. The procedures of review and appeal should be documented and provided to all stakeholders.

6. QUALIFICATIONS AND COMPETENCY REQUIREMENTS

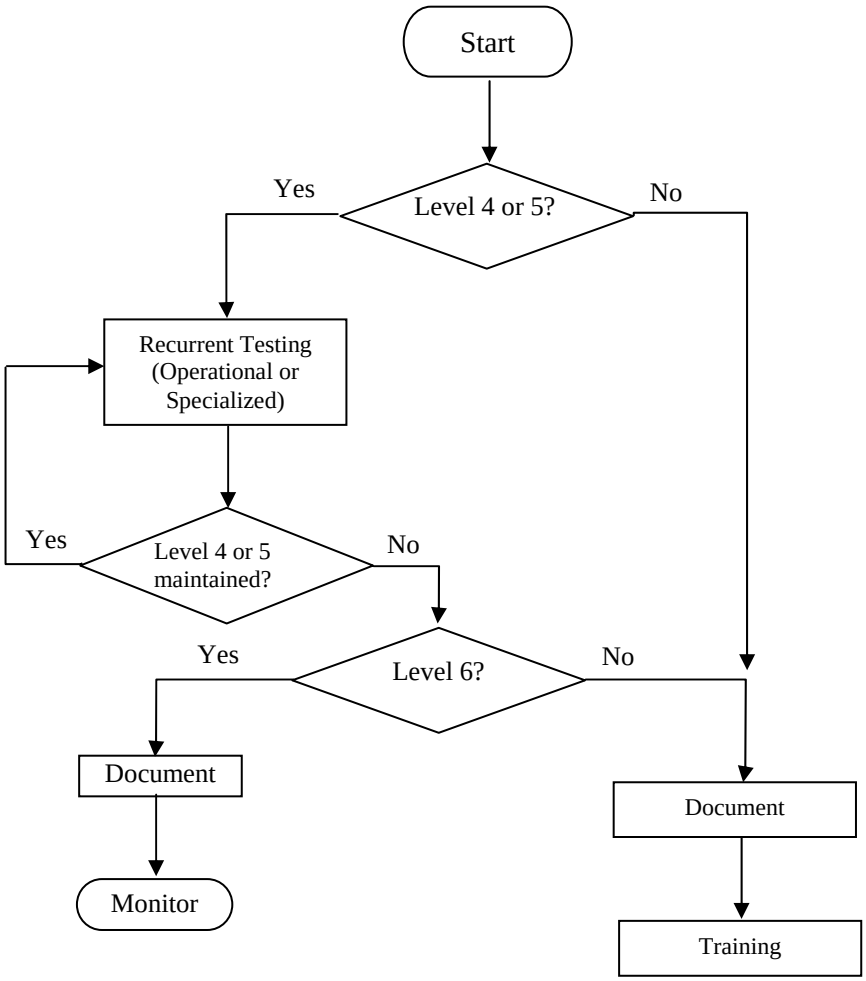
6.1 Personnel responsible for the design, administration delivery and rating of tests should meet a set of minimum qualifications as well as comply with rigorous competency requirements. While qualifications are useful for selection purposes, competency requirements outline the job performance expected from personnel involved in the range of test activities, such as test designers, interlocutors and raters. Attachment B provides a list of tasks and qualifications for these personnel.

ATTACHMENT A

Initial Operational Language Testing for Expert Speakers



Initial Specialized Language Testing for Non-Expert Speakers



ATTACHMENT B

TASK LIST AND QUALIFICATIONS FOR TEST DEVELOPMENT MANAGEMENT, DESIGN AND ADMINISTRATION TEAMS

The following task lists are designed to provide guidance in the development, management, design and administration of licensing tests (initial and recurrent).

1. Task List And Qualifications For Test Development Management, Design And Administration Teams

1.1 *Test Development Management Tasks*

1.1.1 Formulate test purpose
1.1.2 Develop statement of work
1.1.3 Establish test design team based on qualification identified in paragraph 2.
- Determine the range of skills and knowledge required
- Establish qualifications for team members (linguistic and operational)

1.1.4 Establish a test development workplan, including budget

1.2 *Test Design Team Tasks*

1.2.1 Develop specifications for the test.
- Identify test target population (i.e. pilots, air traffic controllers, aeronautical station operators)
- Conduct needs analysis
- Identify and review test design constraints
- establish test security measures
- define and review test construct
- identify test tasks
- establish specifications for each test task item
- determine test delivery method and media required
- design prototype test tasks and items
- trial prototype tasks and items
- write and revise test delivery administration instructions
- conduct expert review of test
- validate test
- document test specifications development process

1.2.2 Construct test
- develop test tasks/items in accordance with specifications developed in paragraph 2.1
- trial test tasks/items
- revise test as necessary
- apply security measures
- design interlocutor training
- design rater training
- document test construction process

1.2.3 Evaluate test
- collect and analyse feedback from stakeholders
- review/amend test design
- trial redesigned tasks
- revise test delivery and administration instructions (including security measures)
- conduct expert review of revised test package
- validate test package
- publish sample test and information for test-users
- document validity and reliability of test
- amend test specifications document accordingly
- document evaluation process

1.2.4 Ensure ongoing test maintenance

1.3 ***Test Administration Team Tasks***

1.3.1 Ensure that test-takers have access to test samples in advance
1.3.2 Schedule test and notify test-takers
1.3.3 Manage pre-test preparations
- ensure all test materials are available
- ensure all equipment (including recording) is operational
- ensure facilities where test will be conducted are appropriate and available
- ensure all materials are handled securely
- provide test-taker with preliminary test instructions

1.3.4 Manage test
- verify identity of test-taker
- provide test-takers with information concerning test administration
- monitor test-takers to ensure that test administration integrity is maintained
- ensure test conditions (i.e. time-keeping, environment, etc.) are adequate
- ensure that a rateable sample of language is elicited and recorded in accordance with interlocutor instructions when applicable
- rate/score test
- ensure documentation is completed

2. Qualifications For Test Development Management, Design And Administration Teams

2.1 ***Test Development Management Team***

No specific expertise was identified for personnel involved in test development management tasks as listed in paragraph 1 above, besides project management experience. Best project management practices should be applied.

2.2 ***Test Design Team***

2.2.1 Operational Expertise:
- Radiotelephony experience as flight crew, air traffic controller or aeronautical station operator
- Familiarity with relevant ICAO SARPS and associated documents
- Experience in aeronautical operations and procedures, and working knowledge of current practices

2.2.2 Language Test Development Expertise:
- Specialization in language test development through training, education or work experience

- Working knowledge of the principles of good practice in language test development
- Specialization in statistical analysis
- Familiarity with the ICAO Language Proficiency Rating Scale and Holistic Descriptors

2.2.3 Linguistic Expertise:

- Working knowledge of the principles of theoretical and applied linguistics
- Knowledge of the principles of language learning and language acquisition
- Experience in language training
- Familiarity with the ICAO Language Proficiency Rating Scale and Holistic Descriptors

2.2.4 All test item writers must have:

- Advanced language proficiency in the language for which the test is to be developed
- Familiarity with the ICAO Guidance materials on Language Proficiency Requirements
    - ICAO Rating Scale,
    - Manual on the Implementation of ICAO Language Proficiency Requirements (Doc 9835) and
    - ICAO Language Proficiency Requirements – Rated Speech Samples

2.3 ***Test Administration Team***

2.3.1 Working knowledge of test administration guidelines

2.3.2 Interlocutor Expertise (Operations)

- Radiotelephony experience as flight crew, air traffic controller or aeronautical station operator
- Minimum proficiency at ICAO Level 5
- Successful completion of initial and recurrent interlocutor training

2.3.3 Interlocutor Expertise (Linguistic)

- Experience or training in aviation language instruction
- Minimum proficiency at ICAO Level 5
- Successful completion of initial and recurrent interlocutor training

2.3.4 Rater team expertise (minimum two raters)

- Language Proficiency at ICAO Level 6
- Familiarity with aeronautical radiotelephony communications and aviation language
- Successful completion of initial and recurrent training

Notes:
If a test is designed specifically to assess ICAO Expert Level 6 candidates, then the interlocutor should also be at Expert Level 6

APPENDIX J -
RECOMMENDED QUALIFICATIONS FOR RATERS OF TESTS TO MEET ICAO LANGUAGE PROFICIENCY REQUIREMENTS

(Paragraph 4.102 refers)

Raters of tests to meet ICAO language proficiency requirements:

1. Shall have experience in aviation adequate to evaluate performance up to level 5* in compliance with the holistic descriptors and the ICAO Language Proficiency Rating Scale.

1.1. English language experts:

Their level of the English language proficiency (speaking, listening, reading and writing) shall be proved by a certificate/diploma such as:

- University degree in Applied Linguistics in English, or
- The International English Language Testing System (IELTS) examination – Academic module (the average score of 7.0 or above, including minimum of 7.5 on speaking and listening), or
- The Cambridge Certificate of Proficiency in English (CPE) examination (grades A, B or C), or
- Common European Framework (CEF) level C2; etc.

The above or similar certificate/diploma shall be accompanied by proof that language proficiency has been actively maintained.

Note: The above mentioned qualifications are only applicable to raters whose first language is not English

1.2 Operational experts (pilots and air traffic controllers) should demonstrate proficiency in English at ICAO level 6 (expert).

2. Shall have recent experience in teaching Aviation English or operational experience as an air traffic controller/pilot.

3. Shall have successfully completed a training course in oral proficiency examination and testing systems, particularly in assessment procedures based on the ICAO Language Proficiency Rating Scale.

4. Shall pass an annual refresher course to maintain standards in rating and assessment techniques.

Notes:

** - For evaluation of proficiency at level 6 (expert) refer to Chapter 5.3 of ICAO Doc 9835*

APPENDIX K-
RECOMMENDED QUALIFICATIONS FOR INTERLOCUTORS OF TESTS TO MEET ICAO LANGUAGE PROFICIENCY REQUIREMENTS

(Paragraph 4.102 refers)

Interlocutors of tests to meet ICAO language proficiency requirements:

1. Shall demonstrate experience to conduct oral test(s).

1.1. English language experts:

Their level of the English language proficiency (speaking, listening, reading and writing) shall be proved by a certificate/diploma such as:

- University degree in Applied Linguistics in English, or
- The International English Language Testing System (IELTS) examination – Academic module (the average score of 6.5 or above, including minimum of 7.0 on speaking and listening), or
- The Cambridge Certificate of Proficiency in English (CPE) examination (grade C or above), or
- Common European Framework (CEF) level C1 and above; etc.

The above or similar certificate/diploma shall be accompanied by proof that language proficiency has been actively maintained.

Note: Above mentioned qualifications are only applicable to interlocutors whose first language is not English

1.2 Operational experts (pilots and air traffic controllers) should demonstrate proficiency in English at ICAO level 5 (extended) or above.

2. Shall have recent experience in teaching Aviation English or operational experience as an air traffic controller/pilot.

3. Shall have successfully completed a training course in oral proficiency examination and testing systems, particularly in interlocution procedures based on the ICAO Language Proficiency Rating Scale.

4. Shall pass an annual refresher course to maintain standards in interlocution techniques.

APPENDIX L -
RECOMMENDED LANGUAGE PROFICIENCY IMPLEMENTATION - INTERNAL AUDIT PROTOCOL

(Paragraph 4.107 refers)

N	*Aspects to be audited or questions to be answered*	*Status*	*Example of evidence to be reviewed*	*Status of implementation*	*Response/ Comments*
	Awareness				
1	Are all stakeholders of my State (pilots, air traffic controllers, language teachers, regulators etc.) familiar with the ICAO language proficiency requirements?	Yes No	Documented evidence of the process (Proof of awareness)	Satisfactory Not satisfactory Not applicable	
	Promulgation, legislation and responsibility				
2	Has my State adopted or incorporated the ICAO language proficiency requirements (Amendment 164 to Annex 1) into national legislation?	Yes No	Title and date of all regulations related to the issue	Satisfactory Not satisfactory Not applicable	
3	Has my State identified and approved the minimum level of language proficiency for ab initio ATC and pilot training?	Yes No	Documented evidence	Satisfactory Not satisfactory Not applicable	
	National coordinator(s)				
4	Has my State nominated a contact person(s) within the State, airline or ANSP(s) to be responsible for coordination of matters at the national level dealing with the implementation of the ICAO language proficiency requirements?	Yes No	Confirm nomination(s)	Satisfactory Not satisfactory Not applicable	
	National implementation plan				
5	Has my State developed and approved the national plan of implementation of the ICAO language proficiency requirements?	Yes No	Confirm availability of the plan	Satisfactory Not satisfactory Not applicable	
	Benchmarking testing and current status				
6	Has the current language proficiency level of air traffic controllers and pilots of my State been assessed according to the ICAO rating scale? If not by what means has the language proficiency of your aviation personnel been assessed?	Yes No	Documented evidence of the process	Satisfactory Not satisfactory Not applicable	

	English language training				
7	Have English language training packages which would assist to close the gap between current language proficiency level of air traffic controllers and pilots and ICAO level 4 been developed?	Yes No	Documented evidence	Satisfactory Not satisfactory Not applicable	
8	Has English language training been started (either in my State or abroad) in order for pilots and air traffic controllers of my State to get to ICAO level 4 (of proficiency)?	Yes No	Documented evidence	Satisfactory Not satisfactory Not applicable	
	Resources for implementation				
9	Has my State assessed the financial implications needed to meet the ICAO language proficiency requirements?	Yes No	Documented evidence	Satisfactory Not satisfactory Not applicable	
	Testing (tests, raters, interlocutors)				
10	Has a language proficiency test been developed and accredited at national level? or, has my State selected a test to meet ICAO language proficiency requirements?	Yes No	Documented evidence	Satisfactory Not satisfactory Not applicable	
11	If a language proficiency test has been developed by my State: Has my State formulated, developed and approved the requirements to this language proficiency test? If not, Who will develop an English language proficiency test for my State?	 Yes No	Documented evidence	 Satisfactory Not satisfactory Not applicable	
12	Has my State formulated, developed and approved qualification and competency requirements for raters and interlocutors in order to ensure that personnel responsible for rating and interlocuting tests comply with the minimum professional qualifications necessary for accurate assessment of the language proficiency of air traffic controllers and pilots?	Yes No	Documented evidence	Satisfactory Not satisfactory Not applicable	

13	Has my State selected and trained personnel to administer, conduct and rate the test(s)?	Yes No	Documented evidence	Satisfactory Not satisfactory Not applicable	
14	Has my State approved the programme of accreditation for selected testing personnel?	Yes No	Documented evidence	Satisfactory Not satisfactory Not applicable	
15	Do raters pass an annual refresher course to maintain standards in rating and assessment techniques?	Yes No	Documented evidence	Satisfactory Not satisfactory Not applicable	
16	Do interlocutors pass an annual refresher course to maintain standards in interlocution techniques?	Yes No	Documented evidence	Satisfactory Not satisfactory Not applicable	
17	If my State doesn't wish to or has been unable to develop its own English language proficiency test(s) then: has my State established an oversight language proficiency testing mechanism?	 Yes No	Documented evidence	Satisfactory Not satisfactory Not applicable	
18	Has language proficiency testing of pilots and air traffic controllers already started in my State? What percentage of air traffic controllers and pilots in my State have already passed a test to meet a ICAO language proficiency requirements?	Yes No	Documented evidence	Satisfactory Not satisfactory Not applicable	
	Expected number of personnel to reach level 4 by 5 March 2008				
19	Will my State have enough air traffic controllers and pilots at level 4 of language proficiency or above by 5 March 2008? What percentage of air traffic controllers and pilots are expected to reach at least ICAO level 4 by March 2008?	Yes No	Documented evidence	Satisfactory Not satisfactory Not applicable	

	Social issues				
20	Has my State identified possible social issues resulting from implementation of the ICAO language proficiency requirements? Has my State prepared measures to resolve these issues?	Yes No	Documented evidence	Satisfactory Not satisfactory Not applicable	
	Motivation				
21	Have motivation packages for air traffic controllers and pilots been developed and approved by the State, airlines, ANSPs?	Yes No	Documented evidence	Satisfactory Not satisfactory Not applicable	
	Maintenance programmes				
22	Has a language training package to maintain language proficiency at level 4 or above been developed?	Yes No	Documented evidence	Satisfactory Not satisfactory Not applicable	
	Any other comments				
23					

Note: Items highlighted (2, 4, 10, 18 and 19) should be considered as priority in order to assess the real problem of proficient aviation personnel by March 5th 2008.

APPENDIX M -

Proposal of the FASID Table MET 3

(Paragraph 4.131 refers)

Appendix 2 (Expected state of FASID Table 3)

VAAC	AREA OF RESPONSIBILITY	ICAO region	State	MWO CCCC	MWO	ACC/FIC CCCC	ACC/FIC TO WHICH ADVISORY INFO. IS TO BE SENT
TOULOUSE (FRANCE) LFPW	Santa Maria Oceanic, AFI Region to S60, EUR Region west of E90 (except for London, Scottish and Shannon FIRs) and MID Region: south of N71, west of E90	EUR	France	LFBD	Bordeaux	LFBB	Bordeaux FIR/UIR
				LFML	Aix	LFMM	Marseille FIR/UIR
				LFPS	Paris	LFFF	Paris FIR/UIR
				LFRN	Rennes	LFRR	Brest FIR/UIR
				LFST	Strasbourg	LFEE	Reims FIR/UIR
		EUR	Albania	LATI	Name MWO	LAAA	Name FIR

The table has been sorted by CCCC of ACC/FIC & MWOs, grouped by State

APPENDIX N -

CALCULATION OF FIRST-GUESS RUNWAY VISUAL RANGE VALUE

(Paragraph 4.141 refers)

Introduction:

1.1 Real-time RVR is assessed by means of the Koschmieder's and Allard's laws. In these laws one makes use of the MOR, the background luminance and the light intensity.

1.2 Based on the same principle, a first-guess RVR value for an aerodrome can be calculated based on the forecast MOR and a background luminance corresponding with the time of the day and the forecast weather; the light intensity can be chosen as the same light intensity which is used for the assessment of real-time RVR values (e.g. the maximum light intensity).

Discussion:

2.1 **Theoretical background**:

2.1.1 In the introduction it is stated that only the MOR and the background luminance have to be forecasted to be able to calculate a first-guess RVR value for an aerodrome. The background of this statement is explained in the following paragraphs.

2.1.2 Based on Koschmieder's law the formula is MOR ≡ $3/\sigma$ is derived, whereby MOR is the Meteorological Optical Range and σ is the extinction coefficient.

2.1.3 Allard's law has the following form:

$$E_T = \frac{I\, e^{-\sigma R}}{R^2};$$

whereby E_T is the visual threshold of illumination, I is the luminous intensity, σ is the extinction coefficient and R is the visual range of light. With aid of Koschmieder's law, the law of Allard can be rewritten as:

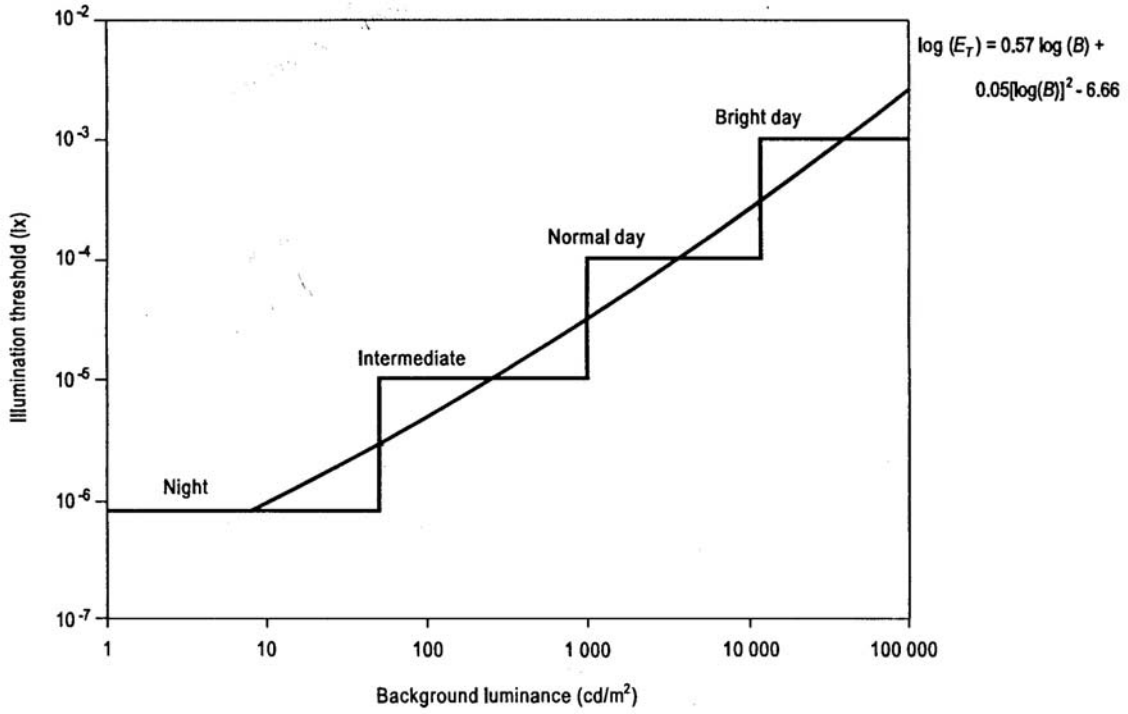
$$E_T = \frac{I\, e^{-3R/MOR}}{R^2}.$$

2.1.4 The greater of the value MOR from Koschmieder's law and R from Allard's law is taken to be the assessed RVR.

2.1.5 Based on the three paragraphs above it is clear that the only parameters that play a role in the calculation of RVR values are I, E_T, MOR and R. Note hereby that the visual range of light R can always be calculated from the other three parameters, so that the only parameters that are needed as an input for a RVR assessment are I, E_T and MOR.

The visual threshold of illumination E_T is related to the background luminance B as follows:

$$\log (E_T) = 0.57 \log (B) + 0.05 [\log (B)]^2 - 6.66.$$



2.1.7 Taking the above relation between E_T and B into account, the only parameters that are needed as an input for the calculation of a first-guess RVR value for an aerodrome are the luminous intensity I, the background luminance B and the MOR.

2.2 **Practical considerations and work to be done**:

2.2.1 The luminous intensity I can be chosen as follows:

2.2.1.1 For the real-time assessment of RVR, the intensity of the runway edge and runway centre line lights is used. This can be 100% light setting or light intensity actually in use at the aerodrome (or runway) or the optimum light intensity in case the lights are switched off; all values taking into account the contamination and aging.

2.2.1.2 for the calculation of a first-guess RVR value for an aerodrome, each aerodrome can make use of the same intensit(y)(ies) that is (are) used for real-time assessment, but for harmonization, it would be better to use 100% light setting, and off-course by taking into account ageing and contamination of the lamps.

2.2.2 Based on the theoretical background and on the consideration concerning the luminous intensity, it is clear that only the MOR and the background luminance have to be forecast in order to calculate a first-guess RVR value for an aerodrome.

2.2.3 MOR can be considered as the synoptical horizontal visibility; the latter can thus be used as input in the calculation for the first-guess RVR value.

2.2.4 For the background luminance, (simple) correlations with the type of weather phenomena and time of the day (day, night, twilight) have to be set up, eventually based on a statistical study. The result of these correlations is that based on the forecast weather and the time of the day, a background luminance can be determined.

2.2.5 For practical use, two actions are possible: the first one is the development of a calculator which determines the first-guess RVR based on some input values; the second one is the development of some tables which can be used by the forecaster.

2.3 **Additional remarks**:

2.3.1 Note that the calculation described above concerns the calculation of a *first-guess* value. This value is not exact and gives only an idea of the RVR that can be expected at an aerodrome. The accuracy of this first-guess value depends highly on the accuracy of the different correlations and in particular on the accuracy of the forecast visibility and weather phenomena.

2.3.2 The first-guess value is only one value for the entire aerodrome, which would be already a great improvement for ATC. Specific first-guess values for each runway and/or section of the runway may be determined later on after a thorough statistical study of the relation between the first-guess value and the specific RVR values for each runway and/or section of the runway. These relations have of course to be investigated for each aerodrome specifically.

2.3.3 The idea discussed above can also be used to calculate the aeronautical visibility based on forecast MOR and background luminance.

RVR forecast using the forecast visibility values.

This method is based on the definitions themselves of the different concepts of visibility.

1. Some notions about visibility

1.1 *The Meteorological Optical Range (MOR)*

"The Meteorological Optical Range is the length of the way which in the atmosphere a beam of parallel luminous rays must carry out, emanating from an incandescent lamp, at a temperature of color of 2700° K, so that the intensity of luminous flow is reduced to 0,05 times its original value".

Behind this complicated definition, the MOR is actually the basic parameter characterizing the optical state of the atmosphere, because it:

- does not depend by definition on the variations between day and night,
- can easily be deduced from any measurement by transmissometer or diffusometer,
- is unambiguously defined by a simple equation based on Koschmieder's law,
- is very close to the visibility by contrast, which is the one that a human observer sees by day. The contrast threshold depends on the objects observed and the visual acuity of the observer, but in the definition, a mean contrast threshold (of 0.05) is adopted,
- is directly related to the "transparency" of the air,

It can be noticed that the use of the MOR is recommended by WMO since 1953!

1.2 *The aeronautical visibility*

Especially at night, perception of light sources is increased and adds to visibility by contrast, particularly at low values. The visibility of light sources depends on the intensity of the sources, the background luminance and the "transparency" of the air (Allard's law). Hence, what an observer sees is linked to these 3 parameters, 2 of which (intensity and luminance) are independent of the state of the atmosphere. This means that for the same air "transparency", visibility by night is often greater than visibility by day. The ratio is even higher when visibility is low, luminance low or the intensity of the sources is increased. This ratio can exceed 3 by night for MORs of 200 m.

So, in 2001, ICAO defined the aeronautical visibility. It is the greater of the two values: visibility by contrast (MOR) and perception of 1000 Cd light sources. This definition is fairly close (which explains it) to what an observer would see on a lit airfield. Nevertheless, in France, until now and for reasons not set out here, an observer is expected to convert the observation to a MOR.

1.3 *The Runway Visual Range (RVR)*

The RVR is a particular application of these concepts, taking into account intense light sources directed along the axis of the runway to guide the pilot: runway lighting. RVR is calculated from air transparency measurements (transmissometer or diffusometer), background luminance (luminance meter) and from knowing the intensity of the runway lighting.

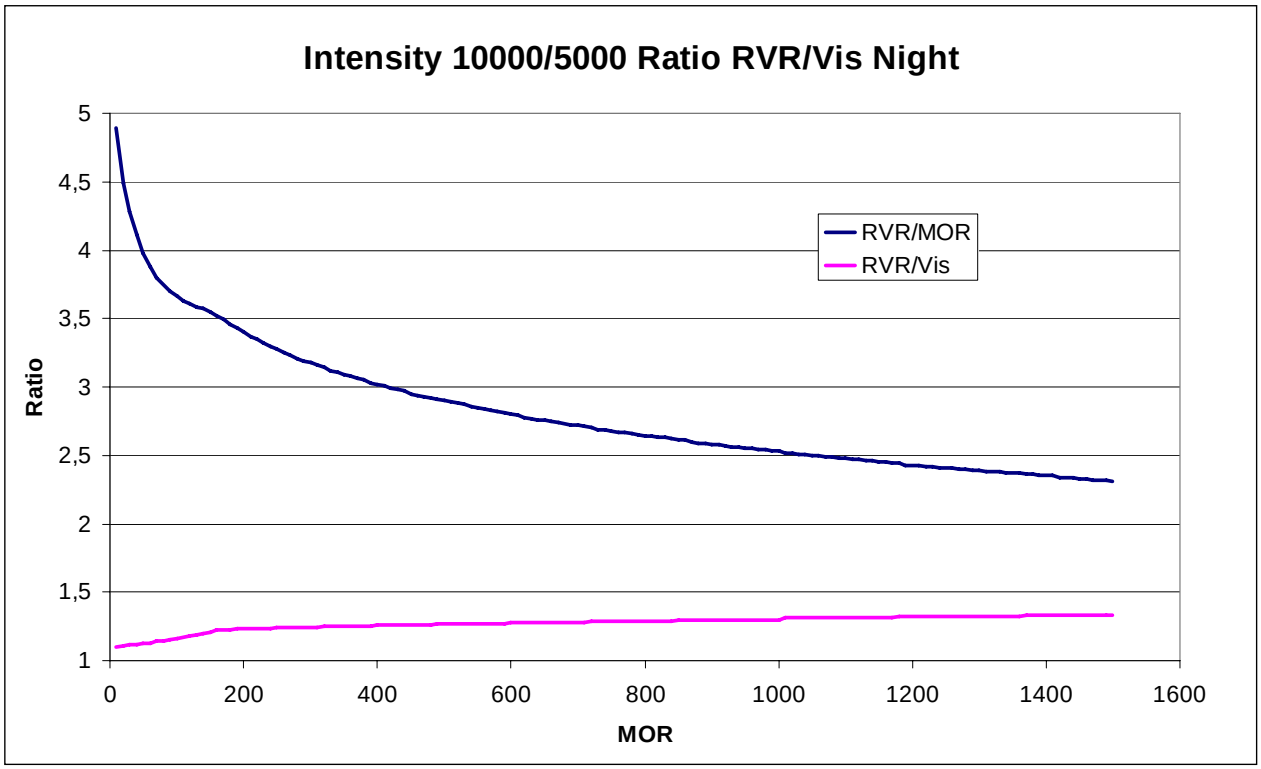
2. Connection between RVR and visibility

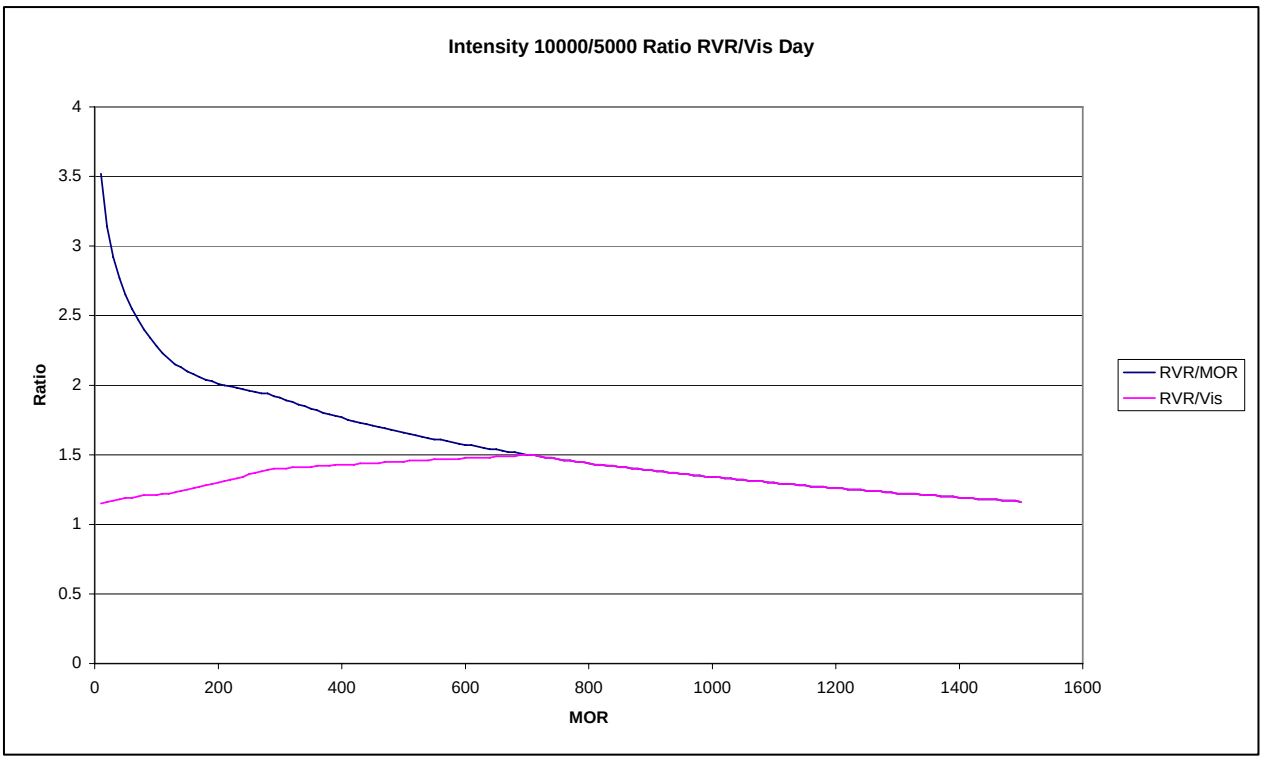
- The MOR represents the transparency of the air,
- The aeronautical visibility defined by ICAO, depends on: the transparency of the air + the background luminance + the light sources of 1000 Cd,
- The RVR depends on: the transparency of the air + the background luminance + the runway lighting of about 10000 Cd.

If the MOR is known, it is enough to know the background luminance in order to calculate the RVR and the aeronautical visibility.

The background luminance depends on the position of the sun (place, date, time) and on the cloud amount and type.

The graphs which follow were established for the conditions of night and day. It was considered an intensity of 10000 Cd for side runway lighting and of 5000 Cd for axial runway lighting.





The table in Annex to this Appendix, based on the same principles as the graphs, give the corresponding conversion between the MOR, the aeronautical visibility and the RVR for three typical luminance conditions (night, day, twilight). They can be used by the forecaster for the calculation of the aeronautical visibility and of the RVR from the MOR issued by the numerical models or any forecasting method.

One can see from these graphs and tables that the theoretical ratio between RVR and (aeronautical) visibility is close to 1.3 whereas the ratio between RVR and MOR may vary between 4.9 and 1.2, depending on visibility and luminance conditions.

These graphs and tables could surely be improved by using more precise assessments of the luminance conditions, based on the sun position and a forecast of the cloud amount and type (with a specific software for instance: a know-how exists in this domain at Météo-France but was not adapted until now to this aeronautical field).

This method can be improved to get more precise tables of conversion than using 3 or 4 background luminance levels as presented in this paper.

MOR	Vis night	RVR night	RVR/MOR night	Vis/MOR night	RVR/Vis night		Vis twiligt	RVR twilight	RVR/MOR twilight	Vis/MOR twilight	RVR/Vis twilight		Vis day	RVR day	RVR/MOR day	Vis/MOR day	RVR/Vis day
10	44	49	4,9	4,4	1,1		37	42	4,2	3,7	1,1		31	35	3,5	3,1	1,2
50	177	199	4,0	3,5	1,1		142	163	3,3	2,8	1,2		111	132	2,7	2,2	1,2
100	315	366	3,7	3,2	1,2		247	291	2,9	2,5	1,2		188	228	2,3	1,9	1,2
150	439	533	3,6	2,9	1,2		338	416	2,8	2,3	1,2		253	315	2,1	1,7	1,3
200	554	680	3,4	2,8	1,2		422	541	2,7	2,1	1,3		310	402	2,0	1,6	1,3
300	766	953	3,2	2,6	1,2		572	749	2,5	1,9	1,3		409	572	1,9	1,4	1,4
400	961	1207	3,0	2,4	1,3		707	938	2,3	1,8	1,3		495	707	1,8	1,2	1,4
500	1144	1449	2,9	2,3	1,3		830	1115	2,2	1,7	1,3		571	830	1,7	1,1	1,5
600	1316	1679	2,8	2,2	1,3		944	1282	2,1	1,6	1,4		639	944	1,6	1,1	1,5
700	1481	1901	2,7	2,1	1,3		1051	1441	2,1	1,5	1,4		702	1051	1,5	1,0	1,5
800	1638	2116	2,6	2,0	1,3		1152	1593	2,0	1,4	1,4		800	1152	1,4	1,0	1,4
900	1790	2324	2,6	2,0	1,3		1248	1740	1,9	1,4	1,4		900	1248	1,4	1,0	1,4
1000	1936	2526	2,5	1,9	1,3		1340	1881	1,9	1,3	1,4		1000	1340	1,3	1,0	1,3
1100	2078	2724	2,5	1,9	1,3		1428	2018	1,8	1,3	1,4		1100	1428	1,3	1,0	1,3
1200	2216	2917	2,4	1,8	1,3		1512	2150	1,8	1,3	1,4		1200	1512	1,3	1,0	1,3
1300	2350	3105	2,4	1,8	1,3		1592	2279	1,8	1,2	1,4		1300	1592	1,2	1,0	1,2
1400	2480	3290	2,4	1,8	1,3		1670	2405	1,7	1,2	1,4		1400	1670	1,2	1,0	1,2
1500	2607	3472	2,3	1,7	1,3		1746	2527	1,7	1,2	1,5		1500	1746	1,2	1,0	1,2

APPENDIX O -
REPORTING FORM ON AIR NAVIGATION DEFICIENCIES IN THE EUROPEAN REGION

(Paragraph 6.2 refers)

Identification		Deficiencies			Corrective action			
Requirements	States/facilities	Description	Date first reported	Remarks	Description	Executing body	Date of completion	Priority for action*
Annex 10 airborne VHF transmitter performance requirements	certain A 320 operators	Radiated interference from certain A 320 a/c blocks the use of VHF com frequency 135.985 MHz	Dec 2004 EANPG/46 paragraph 6.14.2	It had been difficult to identify an entity that could address the issue. IATA undertook at EANPG/47 to encourage any member airlines involved to assist.	Dec 2005 EANPG/47 Con 47/47 - to raise awareness and solicit ideas for corrective action.	None identified		B
Appropriate Spectrum Planning	Whole ICAO EUR Region	The radio spectrum situation is of critical nature. There is a need to take more effective planning action to avoid a crisis situation	Dec 2005 EANPG/47 Conclusion 47/48	Lack of adequate future aviation communications, navigation and surveillance systems planning makes effective spectrum planning impossible	Dec 2005 EANPG/47 Con 47/48 - Aviation spectrum planning deficiencies	a) ICAO b) ICAO EUR/NAT	a) 2006 b) 2006	B
	Cyprus, Turkey	Communication difficulties and confusing coordination experienced by flights operating in the northern part of the Nicosia FIR.		Long lasting issue. Any envisaged solution requires the intervention of the two involved States in order to find a suitable solution.		a)States	a)ASAP	A

Identification		Deficiencies			Corrective action			
Requirements	States/facilities	Description	Date first reported	Remarks	Description	Executing body	Date of completion	Priority for action*
Implementation of WGS-84	Georgia, Kazakhstan, Kyrgyzstan, Russian Federation, Tajikistan, Turkmenistan, Uzbekistan	Lack of WGS-84 implementation in States in the Eastern part of the ICAO EUR Region,	Dec 2004 EANPG/46 Conclusion 46/42	The difficulties which impede CIS States to speed up and complete the implementation of WGS-84 are systematic and have legal and financial aspects.	Dec 2005 EANPG/47 Con 47/49 – Implementation of WG-S84 EANPG/47 Report paragraphs 7.9-7.14 refer	a) States Concerned b) Interstate Aviation Committee c) ICAO	a) ASAP b)ASAP c)2006	A
Harmonization of flight levels	Kazakhstan, Kyrgyzstan, Russian Federation, Tajikistan, Turkmenistan, Uzbekistan	Non-ICAO SARPS compliant flight level system	Dec 2003 EANPG/45	The lack of harmonization of flight levels in accordance with ICAO SARPS imposes safety risks and creates obstacles for the implementation of ICAO strategic objectives and global initiatives		a)States concerned	a)ASAP	A

* Priority for action to remedy a deficiency is based on the following safety assessments:

"U" priority = Urgent requirements having a direct impact on safety and requiring immediate corrective actions.
Urgent requirement consisting of any physical, configuration, material, performance, personnel or procedures specification, the application of which is urgently required for air navigation safety.

"A" priority = Top priority requirements necessary for air navigation safety.
Top priority requirement consisting of any physical, configuration, material, performance, personnel or procedures specification, the application of which is considered necessary for air navigation safety.

"B" priority = Intermediate requirements necessary for air navigation regularity and efficiency.
Intermediate priority requirement consisting of any physical, configuration, material, performance, personnel or procedures specification, the application of which is considered necessary for air navigation regularity and efficiency.

APPENDIX P -

EANPG WORK PROGRAMME FOR 2007

(Paragraph 7.6 refers)

N°	Action by	Deliverable	Target
1		**AIR NAVIGATION ISSUES – ATM**	
1-01	COG (ATMGE)	ATM Safety Management Programme Implementation – progress report. [*to be conducted in coordination with associated action in task -1*] : - Implementation of Safety Management Systems in ATM – activity performed by the "*Safety Management Systems in ATM Task Force – Eastern Part of the ICAO EUR Region*" (ATMGE/SMSA) Task Force; regular meetings in March and September of each year); - Implementation of ATM Safety Occurrences Reporting Systems ATM – activity performed by the "*ATM Safety Occurrences System Task Force - Eastern Part of the ICAO EUR Region*" (ATMGE/SORS) Task Force - regular meetings in March and September of each year). Note: Regional ANSP's Development Association (RADA) is invited to participate in the work of Task Force groups.	COG Oct. 2007
1-02	COG (ATMGE)	Proposed updates to relevant sections of the CNS/ATM Transition Plan.	Ongoing
1-03	COG (RDGE)	A list of follow-up actions to be undertaken in the field of ATM by States in the Eastern part of the ICAO European Region.	Ongoing
1-04	COG (RDGE)	For the Eastern part of the Region maintain: - working procedures and - an ATS Route Catalogue reflecting new routes for easy reference and coordination between States as well as with other International organisations and ICAO regions.	Ongoing
1-05	COG (RDGE)	For the Eastern part of the Region develop and maintain efficient ATS Route network to accommodate major traffic flows through the entire ICAO EUR Region.	Ongoing
1-06	COG (RDGE)	For the Eastern part of the Region provide a coordination mechanism to enable States to develop and refine their proposals for amendment to the Table ATS1 of ANP. (Doc 7754) without the need for approval by the EANPG. New working procedures put in place (task no. 1-06 refers).	Ongoing

N°	Action by	Deliverable	Target
1-07	COG (TF)	Update of language proficiency action plan and progress report Assistance to States for implementation of new language proficiency requirements	By 2008
2		**AIR NAVIGATION ISSUES – CNS**	
2-01	COG (AFSG)	Overview of network operations and resolution of problems; overview of ATS Messaging Management Centre (CMC/AMC) operations; monitoring and resolution of AMHS transition issues; Maintenance of relevant documentation;Co-ordination with adjacent Regions, SITA , EUROCONTROL and other bodies, as necessary.	Ongoing
2-02	COG (AFSG)	Completion of draft Regional manual of guidelines for minimum network security standards for access (physical & system) to the AFTN/CIDIN/AMHS network.	October 2007
2-03	COG(AFSG)	Support the implementation of the ATSMHS off-line management functions	October 2007
2-04	COG (AFSG)	a) Draft update/amendment material for the Regional ANP and other relevant ICAO documentation, including that necessary for AMHS implementation. b) [Draft Regional Transition Strategy for ATN] (*action suspended because there are no agreed operational requirements to guide implementation planning*)	Ongoing
2-05	COG (FMG)	Monitor and report to the EANPG the status of available capacity in the various aviation bands	Ongoing
2-06	COG (FMG)	Ensure the effective operation of the coordination process for the necessary agreement to make new frequency assignments and coordinate activities for the conduct of the 'block planning' process to provide for new frequency requirements which can only be satisfied the relocation of existing assignments	Ongoing
2-07	COG (FMG)	In coordination with Eurocontrol implement the SAFIRE tool for electronic exchange of coordination data for updating of COM tables	October 2007
2-08	COG	Determine the region wide requirements for VDL/4 COM frequency allocations	October 2007

N°	Action by	Deliverable	Target
3		**AIR NAVIGATION ISSUES – MET**	
3-01	COG (METG)	EUR OPMET Update procedure and data monitoring, reporting and development, progress report. EUR OPMET Data Management Handbook.	COG - October 2007
3-02	COG (METG)	Conduct the biannual tests on volcanic ash Contingency Plan and analyse the results for any necessary action.	ongoing
3-03	COG (METG)	Airport Capacity MET Forecast development, progress report	COG - October 2007
3-04	COG (METG)	Implementation of MET services in the Eastern part of the EUR Region, analysis of deficiencies	COG - October 2007
3-05	COG (METG)	Operations of MET requirements for airport operations and ATM	COG October 2007
4		**AIR NAVIGATION ISSUES – AOP**	
4-01	Eurocontrol	a) Identify feasible capacity-enhancing ATM procedures –progress report b) Implementation planning for procedures that are possible in the near term.	ongoing
5		**AIR NAVIGATION ISSUES – AWOP**	
5-1	COG (AWOG)	Amendment to the EUR Doc 013 in respect to i) Clarification of the ICAO and JAA/EASA on LVP requirements from the pilot and ATCO perspectives ii) 200ft cloud ceiling requirements for LVP iii) and Effects of equipment failure on aircraft operations	August 2007
5-2	COG (AWOG)	Assess the results of MLS operational trials at Heathrow, and the outcome of the ITU World Radio Conference (in conjunction with FMG)	August 2007
5-3	COG (AWOG)	Investigate the management of the ILS CAT I critical and sensitive areas	Progress report 2007
5-4	COG (AWOG)	Investigate wind farm influence on NavAids signal propagation	Progress report 2007

N°	Action by	Deliverable	Target
6		**AIR NAVIGATION ISSUES – AIS**	
6-01	COG (AIS/MAP)	Implementation of AIS/MAP services in the Eastern part of the EUR Region, progress report	COG - October 2007
7		**IMPLEMENTATION ISSUES**	
7-01	COG (FMG)	Take the necessary steps and report on the progress for the implementation of the VDL frequency plan,	Ongoing, October 2007
7-02	COG	Identify, at a very basic level, the ICAO documentation issues associated with EGNOS implementation, to determine if a more comprehensive work item is warranted.	Ongoing. October 2007
7-03	COG (AFSG/METG)	develop plans to accommodate BUFR OPMET transmission within the constraints of the EUR AFS network	Pending decision for BUFR in WMO
7-04	COG	monitor progress and make any necessary CCAMS decisions on behalf of EANPG	ongoing
7-05	COG	monitor progress and make any necessary 8.33 decisions on behalf of EANPG. Follow-up the 8.33 implementation above FL195 and planning for introduction below FL195	ongoing
8		**SAFETY MANAGEMENT**	
8-01	COG	Coordinate and promote regional air navigation safety activities	COG - October 2007

– END –