European and North
Atlantic Office

SUMMARY OF DISCUSSIONS OF

THE TRANS-REGIONAL AIRSPACE
AND SUPPORTING ATM SYSTEMS STEERING GROUP

FIRST MEETING

(Paris, 2-3 May 2007)

1.   Introduction

1.1   The first meeting of the Trans-Regional Airspace and Supporting ATM Systems Steering Group (TRASAS/1) was held in the ICAO European and North Atlantic Office from 2 to 3 May 2007.

1.2   Mr Karsten Theil, Regional Director, ICAO European and North Atlantic Office, Mr. Lalit Shah, Regional Director, ICAO Asia and Pacific Office and Ms Loretta Martin, Regional Director, ICAO North American, Central American and Caribbean Office co-chaired the meeting. Mr George Firican, Regional Officer, ICAO European and North Atlantic Office, served as Secretary. He was assisted by Mr Robert Kruger, Mr Jacques Vanier, Mr Victor Kourenkov, Mr Elkhan Nahmadov, Ms Carole Stewart, Mrs Patricia Cuff and Ms Leyla Suleymanova also from the EUR/NAT Office and Mr Kyotaro Harano from the ASIA/PAC Office.

1.3   The meeting was conducted in English.

1.4   22 participants attended the meeting from seven States and three international organizations.

1.5   A list of participants is at **Appendix A**.

2.   Adoption of the Agenda

2.1   The following Agenda was adopted:

Agenda Item 1:   Terms of Reference of the Trans-Regional Airspace and Supporting ATM Systems Steering Group (TRASAS)

Agenda Item 2:   Review of the requirements of the airspace user community for a rational, modern, and economically viable airspace structure and ATM services

Agenda Item 3:   Review of work currently underway to enhance the ATS route network, using current and future technologies, and plan for a transition towards a performance based navigation system

Agenda Item 4:   Determination of short term, medium term and long term goals of TRASAS and establishment of its Work Programme, including time frames, working methods and deliverables

Agenda Item 5:   Arrangements for the next meeting of TRASAS

Agenda Item 6:   Any other business

3.   Terms of Reference of the Trans-Regional Airspace and Supporting ATM Systems Steering Group (TRASAS)

3.1   The Meeting was presented with a paper on the background to the establishment of the Trans-Regional Airspace and Supporting ATM Systems Steering Group (TRASAS), its proposed Terms of Reference and the main expected benefits of its work.

3.2   The Meeting took note that one of the outcomes of the NAT SPG/41 meeting (Paris, 21-23 June 2005) was 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 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.

3.3   Given that RACGAT by and large had exhausted its work programme and considering the significant changes taking place in both the Russian Federation and United States, the parties decided to dissolve RACGAT.

3.4   A continuation of the "historical" RACGAT meetings was considered highly improbable, bearing in mind the need to discuss a wider scope of issues with the involvement of other stakeholders. It was therefore decided to support TRASAS, which would be a multilateral group.

3.5   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.

3.6   In this respect, a Special ATS Coordination Cross-Polar and Russian Far East ATS Routes Meeting 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.

3.7   Secondly, a series of three Cross Polar Trans East Air Traffic Management Providers' Work Group meetings had been held since March 2006. 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 2006 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 Russian Federation (section 5 refers).

3.8   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) was recalled. 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.

3.9 At the NAT SPG/42 and EANPG/48 meetings, 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 and supported by TRASAS members as requiring continued attention, as follows:

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

b) implementation of RVSM in Russian Federation, China and other States;

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

d) ACC consolidation;

e) development of improved ATFM tools that can be shared amongst States until target capacity is matched;

f) communications and surveillance in the Northern Airspace;

g) airport availability for ETOPS aircraft; and

h) improved access to China and Russian Federation airspace.

3.10 To continue the work already done and respond to the new requirements for increased efficiency and further developments, the United States and the Russian Federation participated in the Cross Polar Trans East Air Traffic Management Providers' Work Group. This group accepted the above tasks.

3.11 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 supported by both NAT SPG and EANPG. At the EANPG/48, the officials from the United States and the Russian Federation agreed that cooperation on airspace issues was still critical; therefore, agreed to support the Cross Polar Trans East Air Traffic Management Providers' Work Group and instructed their provider organizations to participate in its meetings. Furthermore, the Russian Federation and the United States 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.

3.12 The Meeting reviewed the proposed Terms of Reference and agreed on the version attached at **Appendix B.**

4. Review of the requirements of the airspace user community for a rational, modern, and economically viable airspace structure and ATM services

4.1 The ICAO North American, Central American and Caribbean Office (ICAO NACC Office) provided information regarding the implementation of the Second Amendment to the *Global Air Navigation Plan for CNS/ATM Systems* (Doc 9750), or Global Plan, within their regional planning processes. The Group noted the ICAO NACC Office's progress in advancing the development of a seamless, interoperable global air traffic management system within the North American, Central American and Caribbean Regions in conformance with the global planning initiatives (GPIs) of the Global Plan.

4.2 The Group noted the information provided regarding the current status of RVSM implementation within the Asia and Pacific Region. The Group then reviewed the outcome of the Thirtieth Meeting of the ICAO RVSM Implementation Task Force (RVSM/TF/30) that had been held in the ICAO Asia and Pacific Office, from 12 to 16 March 2007, involving 106 participants. The Group noted that RVSM would be implemented within the Chinese FIRs on 22 November 2007, utilizing a metric flight level

allocation scheme (FLAS) that was not compliant with the Tables of Cruising Levels specified in Annex 2 - Rules of the Air, Appendix 3.

4.3   The Group noted the concerns expressed by Kazakhstan at several occasions with regard to the difficulties already encountered in transitioning between four different level systems. Concern regarding the proliferation of various metric level conversion tables was expressed by the International Federation of Airline Pilots Associations (IFALPA), along with a strong preference that there be a single conversion scheme that was globally applicable.

4.4   The Group noted the Russian Federation's support of the planned Chinese RVSM implementation and their intent to join with China in submitting an Annex 2 amendment proposal to incorporate the proposed Chinese RVSM metric FLAS. Finally, the Group was advised that outstanding issues, including transition concerns, would be addressed at a subsequent meeting, a Special Coordination Meeting to be held from 16 to 18 May 2007 in Beijing and that the ICAO EUR/NAT Office would be informed about the outcome.

4.5   The Group reviewed the outcome of the Sixth Meeting of the Air Traffic Management Group - Eastern Part of the ICAO European Region (ATMGE/6). The Group noted that RNP-5 had been implemented within the airspace of Armenia, Azerbaijan and Georgia on 12 April 2007. The Group also noted the concern expressed by ATMGE/6 regarding the proliferation of different flight level systems in regard to its review of the planned RVSM implementation by China. The Group also noted that the EANPG Coordination Group (COG) would review this matter and determine whether its work programme should be amended to include consideration of possible interface and transition issues arising from these developments.

4.6   Finally, the Group noted the current status of RVSM implementation within the European Region.

5.   Review of work currently underway to enhance the ATS route network, using current and future technologies, and the need to plan for a transition towards a performance based navigation system

Activities of the Cross Polar Trans East Air Traffic Management Work Group (CPWG)

5.1   The Steering Group was provided with information on the activities performed by the Cross Polar Trans East Air Traffic Management Work Group (CPWG) since their first meeting in October 2006.

5.2   While the FAA and FANA agreed that RACGAT was a very beneficial forum, they also noted that due to various governmental changes, there was a need for a forum to discuss and address operational issues. For this purpose, the Trans-East and Cross Polar Technical and ATS Providers Group was formed to ensure international cooperation on airspace issues in the subject area. The FAA and FANA officials found that cooperation on airspace issues was still critical. Therefore they agreed to support the CPWG and instruct their provider organizations to participate in its meetings.

5.3   CPWG held the following three meetings:

CPWG/1: 14 – 15 March 2006, Anchorage, Alaska

5.4   The meeting was held between Canada, Russian Federation and the United States Air Traffic Services organizations and addressed daily operational issues between the parties involved. Representatives from the various aircraft operators involved in the area also attended the last session of the meeting. The meeting focussed on identifying and resolving air traffic management problems.

CPWG/2: 25 – 27 September 2006, ICAO HQ, Montreal, Canada

5.5   The second meeting of this operational working group included participation from Canada, Iceland, Russian Federation and the United States Air Traffic Services organizations and several aircraft operators. The group addressed daily operational issues between the parties involved and continued improvement in coordination and capacity building. 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 Federation.

CPWG/3: 24 – 26 April 2007, Washington D.C., USA

5.6   The third meeting of the operational working group included participation from Canada, Iceland, Russian Federation and the United States Air Traffic Services organizations, several aircraft operators, International Air Transport Association (IATA), and the Japan Civil Aviation Bureau, as an invited guest.

5.7   CPWG/3 discussed daily operational issues and continued improvement in coordination and capacity building, including the alignment of ATS Route B932 and an RVSM trial along this route. Discussions also included the Russian Federation proposals for several Polar routes with entry/exit points in Anchorage FIR, implementation of technologies such as Controller-Pilot Data Link Communications (CPDLC), Automatic Dependent Surveillance – Contract (ADS-C).

5.8   Implementation of Reduced Vertical Separation Minimum (RVSM) in China was also discussed. It was reported that work on RVSM implementation in the Russian Federation was progressing but not sufficiently mature to announce a firm implementation date.

5.9   The group agreed on its Terms of Reference (**Appendix D** refers).

ATS Routes development in the airspace of Russian Federation

5.10   The Meeting was provided with a report regarding the ATS route network improvement activities taking place in the Russian Federation meant to make the airspace of the Russian Federation more attractive to users and enhance the quality of air navigation services.

5.11   Traffic analysis showed a steady increase in air traffic over the past five years that amounted to an 11.8% annual average increase for 2006. Thus, on the major ATS route systems the increase was:

- Crosspolar – 42.3%;
- Transpolar – 9.8%;
- Trans-Eastern – 19.4%;
- Trans-Asian – 16.7%;
- Asian – 12.9%; and
- Trans-Siberian – decrease of 11.2%.

5.12   The Meeting noted that the Russian Federation expected the traffic along the Cross Polar Routes to increase at the same level (e.g. 40% annually) for the near future.

5.13   A further increase in traffic levels was anticipated, particularly in connection with the forthcoming 2008 Summer Olympic Games to be hosted by the People's Republic of China. Therefore continuous efforts to address the capacity and routes optimization issues would be necessary.

5.14   The Meeting noted that work underway to develop new ATS trunk-routes and feeder-routes to meet traffic growth and aircraft operators' requirements. During the first four-month period of 2007, twenty-two new international ATS routes were implemented which allowed aircraft operators to achieve better flight trajectories, especially in Moscow FIR. Starting from 7 June 2007, several new ATS routes would be implemented: one Cross-Polar route and three Trans-East routes. During the year 2007, the following additional ATS routes would be implemented: one Trans-Polar, four Cross-Polar, seven Trans-East, two Trans-Asian and two Asian routes. It should be noted that this activity would require coordinated efforts of aviation authorities of the adjacent States in cooperation with ANS providers.

5.15   The Meeting was informed about air traffic flow management problems related to the flights over the Arctic Ocean. Russian Federation stated that it would be open for a constructive dialogue with its colleagues from Canada and the United States in order to reduce the existing slot-time procedures from 20 to 10 minutes; the proposed revised procedures would allow the optimization of the air traffic flows and increase the capacity of ATC system.

5.16   The Meeting noted that establishment of the new ATS routes would improve considerably the route network in the Russian Federation and increase the capacity and flexibility of the air traffic management system. Therefore, the aircraft operators would be provided with better routes, leading eventually to an increase in traffic figures within the airspace of the Russian Federation and to the enhancement of the quality of the air navigation services.

5.17   The Meeting was provided with a presentation depicting bar charts containing results of traffic density analysis for Polar routes with monthly and annual traffic distribution. The statistical data proved the significant increase in traffic along Cross Polar routes. It was noted that Polar Routes 3 and 4 were the most popular amongst aircraft operators, although a substantial growth in demand for Polar 1 had also been noted.

5.18   For a better understanding of the traffic flows and designations used for various ATS route systems in the area, the Group was presented with a chart and an excerpt from the third meeting of the ICAO Informal Trans-Asia/Trans-Siberia/Cross Polar Routes High Level Steering Group (ITASPS/3) defining the classification of those routes (**Appendix E** refers).

5.19   The Meeting expressed its gratitude to the Russian Federation for their hard work and active involvement in the development of the ATS route network in their airspace and for the valuable information presented to the meeting.

CNS issues

5.20   The Meeting was presented with a review of the data link services implementation status in the oceanic airspace of the NAT and ASIA/PAC regions, where data link applications had been increasingly and widely applied since the beginning of the 1990s. It was also noted that the same technology was successfully introduced and utilized in the Magadan UIR.

5.21   The ICAO Secretariat informed the Meeting on the data link harmonisation activities and on the agreement to stop any further divergence and to ensure a harmonised and coherent data link implementation plan across the regions. The Meeting noted the continuous increase in the data link equipage and usage by the international civil aviation community.

5.22   The Meeting agreed that further expansion of data link systems, covering all parts of the Polar routes, would increase the level of safety and would be beneficial for both airspace users and air traffic services providers in the region. It would also foster further consolidation of air traffic service centres and reduce the general operating costs by decreasing the deployment and maintenance of the conventional ground systems.

5.23   The meeting recognised that the operational experience gained in the ICAO NAT and ASIA/PAC Regions could be applied in the context of the Polar Routes' area of interest and invited the Russian Federation to participate in the existing working arrangements of the various implementation groups acting in the EUR/NAT and ASIA/PAC Regions.

5.24   However, the Meeting concurred with the need that as regards the data link implementation end-to-end system interoperability, network reliability and redundancy issues should be addressed prior to commencement of any further activities in the Polar Routes context.

5.25   The Meeting examined the perspectives for ADS-B applications along the continental parts of the Cross Polar Routes and noted the general agreement among airspace users and service providers on the potential benefits that ADS-B implementation might provide to the operations in the area.

Adoption of the ASIA/PAC Route Catalogue

5.26   The Meeting was provided with information that the ASIA/PAC Air Navigation Planning and Implementation Regional Group (APANPIRG) adopted the *Asia and Pacific ATS Route Catalogue* as a regional planning tool at its 16th meeting (August 2005, Bangkok). The ICAO Asia and Pacific Office updates the Catalogue at suitable intervals.

5.27   The latest version of the Catalogue, Version 4, was available from the ICAO Asia/Pacific web site (http://www.icao.int/apac/) under the menu "eDocuments".

Activities of the Route Development Group - Eastern Part of the ICAO EUR Region (RDGE)

5.28   The Meeting was provided with a presentation on the outcome of the Sixth Meeting of the Route Development Group – Eastern Part of the ICAO EUR Region (RDGE/6), which was held in the ICAO European and North Atlantic Office from 2 to 5 April 2007.

5.29   It was noted that the RDGE worked on matters related to ATS route planning in the Eastern part of the ICAO EUR Region within the terms of references of the European Air Navigation Planning Group (EANPG). The Group was informed that route planning for the Western part of the ICAO EUR Region was carried out by Eurocontrol within the framework of the European ATM Enhancement activities (EATM), the Route Network Development Sub-Group (RNDSG) of the Eurocontrol EATM Airspace and Navigation Team (ANT) on behalf of States of the European Civil Aviation Conference (ECAC). It was noted that the ICAO Secretariat and Eurocontrol were working closely together to ensure liaison and coordination between all States concerned.

5.30   The Meeting noted that the latest version of the RDGE ATS Route Catalogue, a live document recording the proposals discussed by the RDGE, would be available for its regular participants on the ICAO EUR/NAT website (http://www.paris.icao.int/) under the menu "EANPG & Subgroups - RDGE" by 15 May 2007.

5.31   The Meeting recognised the advantages provided by a common format of the ATS route catalogues developed by the different regions and recommended the ICAO Secretariat investigate possible harmonisation solutions.

6.   Determination of short term, medium term and long term goals of TRASAS and establishment of its Work Programme, including time frames, working methods and deliverables

6.1   The Group reviewed the list of issues identified by aircraft operators at NAT SPG/42 and EANPG/48 regarding the need for improvement of the route structure and supporting infrastructure within

the area (paragraph 3.9 also refers). Accordingly, it was agreed that requirements of the aircraft operators should form the basis of the TRASAS Action Plan, which is detailed in **Appendix C**.

7.   Arrangements for the next meeting of TRASAS

7.1   The Group agreed to plan, tentatively, the second meeting of the Trans-Regional Airspace and Supporting ATM Systems Steering Group (TRASAS/2) from 18 to 19 March 2008, to take place in Bangkok, at the kind invitation of the Asia and Pacific Office of ICAO. The proposed dates in March 2008 should provide the Group with the lead-in time necessary to evaluate the progress of the preparations for the 2008 Summer Olympic Games in Beijing and propose corrective actions, if deemed necessary. The Group will receive confirmation of the meeting dates early December 2007 (after EANPG/49).

8.   Any other business

8.1   It was agreed that by the end of the 2007 the TRASAS members will be provided with a report on the progress on the issues on the task list.

———————————————

APPENDIX A - LIST OF PARTICIPANTS

(Paragraph 1.3 refers)

CANADA
  Mr Randy SPEIRAN

DENMARK
  Mr Flemming Schnipper CHRISTENSEN

FINLAND
  Mr Kari SIEKKINEN

ICELAND
  Mr Asgeir PALSSON (NATSPG Chairman)

JAPAN
  Mr Hiroshi INOGUCHI

RUSSIAN FEDERATION
  Mr Dmitry SAVITSKIY
  Mr Vasiliy TOPCHIEV
  Mrs Natalia KIRILLOVA
  Mr Sergey VASILIEV
  Mr Sergey POGREBNOV
  Mr Alexey BUEVICH

USA
  Ms Carey FAGAN
  Mr Luis RAMIREZ

IACA
  Mr Erik MOYSON

IATA
  Mr Gene CAMERON
  Mr Len HEARNDEN
  Mr Patrick GARRETT
  Mr Jean-Yves MAITRE
  Mr Günter MARTIS
  Mr Curtis TAYLOR
  Mr Edgar VAYNSHTEYN

IFALPA
  Capt Greg WOLFSHEIMER

ICAO
  Mr Karsten THEIL
  Mrs Loretta MARTIN (NACC)
  Mr Lalit SHAH (APAC)
  Mr Kyotaro HARANO (APAC)
  Mr Robert KRUGER
  Mr George FIRICAN
  Mr Jacques VANIER
  Mr Victor KOURENKOV
  Mr Elkhan NAHMADOV
  Ms Carole STEWART
  Mrs Patricia CUFF
  Ms Leyla SULEYMANOVA

APPENDIX B

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

(Paragraph 3.12 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 five of the ICAO Regions: EUR, ASIA, NAM, 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

a)   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.

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

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

d)   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.

e)   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.

f)   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).

g)   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 will closely cooperate with existing bodies working on relevant tasks and may also 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, Kazakhstan, Mongolia, Norway, Republic of Korea, Russian Federation, United States, Uzbekistan and from international organisations representing aircraft operators' (e.g. IACA, IATA, IBAC) and pilot associations (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 Asia/Pacific Air Navigation Planning and Implementation Regional Group (APANPIRG), the European Air Navigation Planning Group (EANPG) 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 C

ACTION LIST OF THE
TRANS-REGIONAL AIRSPACE AND SUPPORTING ATM SYSTEMS STEERING GROUP
(TRASAS)

(Paragraph 6.1 refers)

Task No.	Task Description	Action by	Target Date	Progress / Remarks
1/1	Opening of new routes and improved efficiency of the current routes	PIRGs, CPWG, CMRI, States, IOs	2007-2010 onwards	On-going
1/2	Improvement of the air navigation services coverage and hours of operations	States	2007-2010	
1/3	ACC consolidation	States	RF – 2007-2015	On-going
1/4	Implementation of RVSM in China, Russian Federation (RF) and other States	China, RF, States, PIRGs, ICAO	22 Nov 2007 (China) RF (TBD)	On-going
1/5	Develop improved ATFM tools to be shared amongst States concerned until target capacity is met	PIRGs, States, ANSPs, CPWG, TRASAS	2007-2010	On-going
1/6	Ensure improved surveillance and communications in the Northern Airspace	PIRGs, States, ANSPs, TRASAS	2007-2015	ADS, VHF, HF, Datalink, SATCOM
1/7	Ensure airport availability for ETOPS aircraft/operations	States, IOs, Manufacturers, TRASAS	2007-2012	
1/8	Ensure suitable airport availability for new very large aircraft/operations	States, IOs, Manufacturers, TRASAS	2007-2012	
1/9	Ensure improved access to China and Russian Federation airspace	China, RF, TRASAS	2007-2010	On-going

APPENDIX D

CROSS POLAR TRANS-EAST ATM WORKING GROUP
(CROSS POLAR WG)

Terms of Reference

(Paragraph 5.9 refers)

Introduction

The Cross Polar Trans-East Air Traffic Management (ATM) Working Group (Cross Polar WG) provides a forum to improve the provision of air traffic services (ATS) to aircraft which operate between North America and Asia via Cross Polar and Russian Trans East routes. The Cross Polar WG shall be composed of Air Navigation Service (ANS) provider representatives from Russia, Canada, Iceland and the United States (US) and representatives from international organizations representing airspace operator groups (e.g., the International Air Transport Association (IATA) and International Business Aviation Council (IBAC)) who operate in the subject airspace.

Although the Cross Polar WG will focus primarily on Cross Polar and Trans-East airspace issues, in order to promote seamless, efficient and safe ATS, representatives from other organizations and ANS providers, including, but not limited to China, Mongolia, and Japan, may also be invited to participate in Cross Polar WG activities, as appropriate.

The Cross Polar WG is cognizant of other international bodies, both long standing as well as newly formed, which share many of its concerns and goals. The Cross Polar WG is committed to working cooperatively with these groups and is prepared to share its expertise as, and when, requested. Correspondence between the groups will include the dissemination of Cross Polar WG meeting minutes to ensure thorough coordination of efforts.

Purpose and Scope of Work

The Cross Polar WG addresses Cross Polar and Russian Trans East aviation issues focusing on continued improvements to operational efficiency through enhanced coordination, harmonized procedures and implementation of new technologies. Members work cooperatively to accomplish the WG activities, which may include:

1. Promotion of ATM and/or communications, navigation, surveillance (CNS) initiatives and associated technologies designed to improve safety, increase operational and economic efficiency and/or capacity, and harmonize ANS;
2. Harmonized implementation of Reduced Vertical Separation Minimum (RVSM);
3. Pursuit of new Polar ATS routes and/or tracks with entry/exit points on Flight Information Region (FIR) boundaries;
4. Development of air traffic flow management (ATFM) procedures designed to improve capacity/efficiency and overcome existing limitations;
5. Sharing information on plans for enhancing compatibility of air traffic operations and systems; and
6. Supporting the goals and objectives of associated International Civil Aviation Organization (ICAO) groups such as the European Air Navigation Planning Group (EANPG), the Asia/Pacific Air Navigation Planning and Implementation Regional Group (APANPIRG), the North Atlantic Systems Planning Group (NAT SPG), the Trans-Regional Airspace and Supporting ATM Systems Steering (TRASAS) Group, and the Informal Pacific ATS Coordination Group (IPACG).

Meeting Schedule

The Cross Polar WG meetings will normally be scheduled for approximately three days and will take place bi-annually or as needed. Locations of the meetings will vary. The length and timing of each meeting may be adjusted to accommodate the work program. Work may also be conducted via other methods such as conference calls and/or electronic mail.

Management of Meetings

The US will be responsible to facilitate each Cross Polar WG meeting. ANS providers from Russia, Canada, Iceland and other States will provide points of contact to coordinate issues on behalf of each ANS provider. The facilitator will ensure that the outcomes of each meeting, including follow-up action items, are documented and distributed to participants in a summary. Notes, briefings and action items will be made available electronically to the greatest extent possible. Russia, Canada, Iceland and the US will share joint responsibilities for collaboratively developing and maintaining a comprehensive work program including target dates and milestones to be achieved.

Hosting responsibilities will be shared amongst the ANS Providers i.e., U.S., Russia, Canada and Iceland. The Host will be responsible for organizing and funding logistical arrangements for the meeting.   Meeting attendees will be responsible for the cost of travel, meals and related personal expenses incurred by meeting attendance.

The working language of the meeting will be English and meeting documentation will be provided in English.   If needed, interpretation services will be provided by the parties requiring interpretation.

APPENDIX E

TRANSIT ATS ROUTE CLASSIFICATION
(Excerpt from ITASPS/3 Summary of Discussions)

(Paragraph 5.18 refers)

1. **Trans-Polar Transit ATS routes**: ATS route A333 and all routes north of it;
    A.   Contributing States to Trans-Polar Transit ATS routes
         Norway
         Finland
         Russia
         Japan
    B.   Contributing States to Asian destinations
         1. Japan (Tokyo, Osaka)

2. **Trans-Siberian Transit ATS Routes**: ATS routes south of A333 (excluding), up to and including the ATS route R211;

    A.   Contributing States to Trans-Siberian Transit ATS Routes
         Russia
         Japan
         Finland
         Baltic Republics
         Poland
    B.   Contributing States to Asian destinations
         1. Japan (Tokyo, Osaka)

3. **Cross-Polar Transit ATS Routes**: ATS routes linking North America with Eastern Europe and Asia through the airspace of the Russian Federation east of the ATS routes G476 and A74 up to the ATS route A218 (excluding);
    A.   Contributing States to Cross-Polar 1-4
         USA
         Canada
         Denmark (Greenland)
         Iceland
         Russia
         Mongolia
         China
    B.   Contributing States to Asian destinations
         1. China (Beijing, Hong Kong, Shanghai)
         2. China, Republic of Korea (Seoul)
         3. China, Pakistan, India (Delhi, Islamabad, Karachi)
         4. China, Myanmar, Thailand (Bangkok)
         5. China, Myanmar, Thailand, Malaysia (Kuala Lumpur)
         6. China, Myanmar, Thailand, Malaysia, Singapore (Singapore)

4. **Trans-Eastern Transit ATS Routes**: ATS routes linking North America with Southeast Asia through the airspace of the Russian Federation including ATS route A218 and all routes east of it;
    A.   Contributing States to Trans-Eastern Transit ATS Routes
         USA
         Canada
         Russia
         China

       B.   Contributing States to Asian destinations
           1. China, Democratic Peoples' Republic of Korea, Republic of Korea (Beijing, Hong Kong, Seoul, Shanghai)
           2. Japan (Tokyo, Osaka)

5.   **Trans-Asian Transit ATS Routes**: ATS routes linking European States with States of Central and Southeast Asia aligned south of ATS routes B159, A222, B200 and A310, including ATS route G3; and

       A.   Contributing States to Trans-Asian Transit ATS Routes
           Russia
           China
           Mongolia
           Kazakhstan
           Baltic States
           Finland
       B.   Contributing States to Asian destinations
           1. China (Beijing, Hong Kong, Shanghai)
           2. China, Republic of Korea (Seoul)
           3. China, Republic of Korea, Japan (Osaka)
           4. China, Myanmar, Thailand (Bangkok)
           5. China, Myanmar, Thailand, Malaysia (Kuala Lumpur)
           6. China, Myanmar, Thailand, Malaysia, Singapore (Singapore)

6.   **Asian Transit ATS Routes**: ATS routes linking European States with Middle Asia, south of ATS route G3.

       A.   Contributing States to Asian Transit ATS Routes
           Ukraine
           Turkmenistan
           Iran
           Kazakhstan
           Turkey
           Afghanistan
           Uzbekistan
           Russia
           Armenia
           Georgia
           Azerbajan
       B.   Contributing States to Asian destinations
           1. Pakistan (Karachi, Islamabad)
           2. Pakistan, India (Delhi, Mumbai, Calcutta)
           3. Pakistan, India, Bangladesh (Dakar)
           4. Pakistan, India, Bangladesh, Myanmar, Thailand (Bangkok)
           5. Pakistan, India, Myanmar, Thailand, Malaysia (Kuala Lumpur)
           6. Pakistan, India, Myanmar, Thailand, Malaysia, Singapore (Singapore)
           7. Pakistan, India, Sri Lanka (Colombo)
           8. Pakistan, Emirates, Oman (Gulf destinations)

Main Flows of Traffic in the Russian Airspace