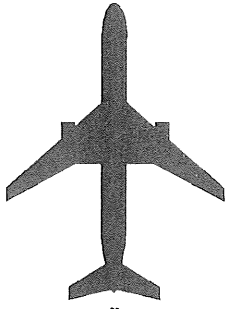


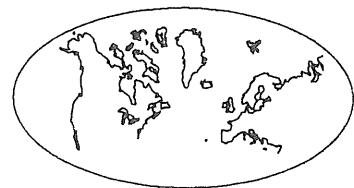
NAT SPG/HLM



NORTH ATLANTIC SYSTEMS PLANNING GROUP

*Report of the
North Atlantic Systems Planning Group
Meeting of High Level Managers*

Paris, 20 - 21 January 1994



REPORT OF THE
NORTH ATLANTIC SYSTEMS PLANNING GROUP (NAT SPG)
MEETING OF HIGH LEVEL MANAGERS

(Paris, 20 to 21 January 1994)

1. Introduction

1.1 The Meeting of high level managers from North Atlantic Systems Planning Group (NAT SPG) member States was convened in follow up to NAT SPG Conclusion 29/36. The main focus of the meeting was to discuss issues related to institutional, financial and policy aspects of the implementation of the ICAO Air Navigation Plan concerning the ICAO Communications Navigation Surveillance/Air Traffic Management (CNS/ATM) systems in the NAT Region.

1.2 The Meeting was moderated by Mr Christian Eigl, the ICAO Representative of the European and North Atlantic (EUR/NAT) Office who also acted as Secretary. All States which are members of the NAT SPG were present. A list of participants is at the **Appendix** to this report.

2. Opening of the meeting

2.1 In his opening remarks, the ICAO Representative recalled the history and purpose of the NAT SPG which had been created by the Special NAT Regional Air Navigation (RAN) Meeting (1965) to establish a continuous systems planning machinery for the NAT Region which would take account of the technical developments as they occurred and which had relevance to that Region. Amongst the many achievements of this highly efficient and successful regional body were, notably, the introduction of Minimum Navigation Performance Specifications (MNPS) airspace in the NAT Region which had allowed for a safe reduction in lateral and longitudinal separation and thus a considerable increase in capacity and other operational advantages. In all its past work, the NAT SPG had succeeded in achieving a seamless transition which had been transparent to the user community.

2.2 The Meeting also recalled the then ongoing ICAO world-wide developments in regard to CNS/ATM systems. The Council Committee on Future Air Navigation Systems (FANS) had been created in 1983 to assess new concepts and technology, to make recommendations to overcome present shortcomings and to suggest the necessary innovation to take international civil aviation well into the 21st century. As a result, the largely (but not exclusively) satellite based CNS/ATM systems was endorsed by the 10th Air Navigation Conference in 1991 and approved by 29th Session of the ICAO Assembly in 1992. In a second phase, FANS continued its work to develop the ICAO Global CNS/ATM Plan and to provide guidance for cost/benefit analyses for States.

2.3 It was expected that the ICAO Council would consider (in February 1994) the establishment of a Special CNS/ATM Task Force intended to identify implementation priorities, to provide advice on an ultimate coordination mechanism and to raise the awareness of State authorities to the need for early implementation of CNS/ATM systems.

2.4 The transition from the present air navigation systems to the ICAO CNS/ATM systems was considered to be one of the major activities ever undertaken by ICAO and it had clear and far reaching world-wide implications. ICAO was fully committed to this and some eight Panels were working on the various issues involved to enable standardization. The Meeting was conscious,

however, that implementation of the new systems was to happen in the various Air Navigation Regions within their particular operational and economical environments.

2.5 It was recalled that the NAT SPG had started its work on implementation planning in the NAT Region already before FANS had completed its work and had proven to be a pioneer to the extent that some of its ideas and results had been input to the work of the FANS Committee from the start. Closest coordination between the Regional work and the world wide activities was assured at all times.

2.6 The Meeting was conscious of the fact that the North Atlantic Region was now the first region in the world to proceed actively and rapidly towards the implementation of the CNS/ATM systems. As such, the Region was the proving ground for the concept and would serve in many respects as an example for developments to come in many other parts of the world.

2.7 In recent years, the NAT SPG had created the CNS/ATM concept for the NAT Region which (after the LIM NAT (COM/MET/RAC) RAN Meeting (1992), and pending Council approval) was henceforth to be contained in the NAT Regional Air Navigation Plan (ANP). An accompanying Implementation Planning Document (IPD) was designed by the NAT SPG to constitute the framework for phased and orderly implementation of the NAT ANP. Amongst the important decisions of the LIM NAT (COM/MET/RAC) RAN Meeting (1992) was the agreement and commitment to proceed with the CNS/ATM implementation, to introduce reduced vertical separation and to establish a manageable and flexible new ANP and an associated Facilities and Services Implementation Document (Council approval on the latter was then still awaited).

2.8 From all this action, significant improvements were expected (and necessary) to cope with the constantly increasing traffic demands and it appeared that the time had come to endorse the implementation methods and ideas and to commit the means thereto, both for States and for ICAO. It was confirmed that the Organization and the support by its secretariat constituted a most important element on the way towards success. Failing this support, orderly progress could not reasonably be expected with the desired and required speed. The role of ICAO in the interface between the NAT, the NAM and the EUR Regions, as well as with the ICAO global plan and its coordination machinery was confirmed and considered most important.

2.9 Clearly, the NAT Region was now at the threshold of a new era requiring a major and complex transition (which had to be equally seamless as the transitions managed by the NAT SPG in the past). However, the nature of decisions which were now necessary had changed to a certain extent from the past. It now involved institutional matters, financing and policy decisions concerning the implementation strategy of the ICAO CNS/ATM systems. These decisions now implicated, to an increasing extent, the higher levels in State administrations. From this point of view, the present meeting of NAT high level managers was considered timely and necessary.

2.10 The Meeting also noted the importance of the NAT air traffic forecasts prepared annually by the North Atlantic Air Traffic Forecasting Group (NAT TFG) which had established a remarkable track record of reliable forecasts therefore making its product a major planning tool for the NAT Region. This was also confirmed by the LIM NAT (COM/MET/RAC) RAN Meeting (1992). The forecasts had firmly indicated a continuing growth trend for air traffic in the NAT Region. This further illustrated the urgent need to progress with system modernization if traffic congestion and other problems were to be avoided in the future.

2.11 A brief system overview presented by the NAT SPG Chairman (Mr. Karsten Theil) provided an insight into the functioning of the NAT SPG and rounded off the picture against which the meeting entered into a detailed discussion which is reflected below.

3. Discussions and Decisions

3.1 INTRODUCTION

3.1.1 Under this item, the Meeting discussed and came to decisions on the following:

- a) Management structure for NAT development and implementation of the ICAO CNS/ATM systems business environment
- b) Harmonization of States' individual NAT IPD programmes, commitments and requirements
- c) Cost/benefit estimations
- d) Cost sharing and recovery
- e) Results of the Special NAT SPG Meeting
- f) Global Navigation Satellite Systems

3.2 MANAGEMENT STRUCTURE FOR NAT DEVELOPMENT AND IMPLEMENTATION OF THE ICAO CNS/ATM SYSTEMS BUSINESS ENVIRONMENT

3.2.1 Considering that the tasks now necessary for the NAT Region increasingly required harmonious and integrated implementation action, the Meeting reviewed the capabilities of the NAT SPG to carry out this function. It was confirmed that its present composition, terms of reference and working methods were broad and flexible enough to encompass these goals. It was noted that the need for close coordination and consultation between various specialist sub-groups had been realized and had been addressed by an Implementation Programme Coordination Team (IPCT). That Team had been able to programme the many ongoing activities under the auspices of the NAT SPG, had managed to avoid overlap and had ensured that the results from one body were ready for input to the others in good time.

3.2.2 While this function was most important, the meeting felt that something more tangible was required, namely a machinery that would secure the commitment of States to apply the required resources towards concrete implementation action (ranging from Research and Development, to standardization to procurement to installation and operation) in a harmonized and critically timed agreed schedule. This schedule must be met by all States involved to ensure rapid progress and to avoid waste of time and resources. Clearly, the commitment stipulated in the Convention on International Civil Aviation (Chicago, 1944) and established in the ICAO Regional ANPs needed to include the commitments by States to actually meet critical target dates and to allocate resources accordingly. The implementation of the various required projects would be essential to meet the intent of the ANP in a timely manner.

3.2.3 After a detailed discussion, the NAT high level managers agreed that a mechanism should be established within the NAT SPG which would fulfil this role. It should be composed of officials from Canada, Iceland, Portugal, United Kingdom/Ireland, the United States of America and of a suitable user representation. The Chairman of that mechanism (the NAT Implementation Management Group) would be the Chairman of the NAT SPG itself.

3.2.4 While the NAT SPG would continue mainly with its systems monitoring and planning work, together with its supporting groups of system scrutiny experts and mathematicians, the NAT Implementation Management Group would oversee, on its behalf, the activities of its various implementation working groups: at the time, the Air Traffic Management Group (ATMG), the Communications and ATM Automation Group (COMAG), the Automatic Dependent Surveillance Development Group (ADSDG) and the Reduced Separation Standards Implementation Group (RSSIG). It would manage the programmes of these bodies and ensure, through its own composition, that State commitment to these programmes and their progress was forthcoming. As necessary, the mathematicians would serve all implementation working groups.

3.2.5 The NAT SPG Members, all present during the high level managers meeting, agreed that an exploratory gathering of designated officials from those administrations nominated for NAT Implementation Management Group membership (paragraph 3.2.3 refers) should be convened as soon as possible to provide suitable suggestions on terms of reference, tasks, user participation and other matters of detail for consideration and decision by the NAT SPG at its next meeting scheduled for June 1994.

3.2.6 In this connection, the high level managers emphasized the need for ICAO to provide the necessary secretariat support services, both from Headquarters and from the EUR/NAT Regional Office, to ensure successful progress towards the timely implementation of the ICAO CNS/ATM systems in the NAT Region. Without this support, the efforts of States would lose effectiveness, would encounter delays and may possibly lead to failure of the programmes.

DECISION 1/1 - ESTABLISHMENT OF A NAT IMPLEMENTATION MANAGEMENT GROUP OF THE NAT SPG

That:

- a) the NAT SPG create a NAT Implementation Management Group composed of designated officials from Canada, Iceland, Portugal, the United Kingdom/Ireland, the United States of America as well as of a suitable user representation in order to coordinate and manage the activities of the various implementation working groups of the NAT SPG and to achieve the necessary commitment from States for the required resources to meet agreed target dates for the implementation of projects in a timely manner;
- b) the NAT Implementation Management Group be chaired by the Chairman of the NAT SPG;
- c) ICAO be requested to provide the secretariat services required to assist the NAT SPG and its working structure in achieving the ambitious goals related to the implementation of the ICAO CNS/ATM systems in the North Atlantic Region; and
- d) the NAT SPG members concerned arrange for an exploratory gathering of designated officials to develop proposals for specific terms of reference of the NAT Implementation Management Group, the tasks to be performed, adequate user representation in that group and other relevant subjects for consideration and decision by the forthcoming NAT SPG/30 meeting (June 1994).

3.2.7 Finally, considering the usefulness of this NAT high level managers meeting, it was expected that the NAT SPG would convene similar meetings in the future as required.

3.3 HARMONISATION OF STATES' INDIVIDUAL NAT IPD PROGRAMMES, COMMITMENTS AND REQUIREMENTS

3.3.1 The Meeting was presented with a proposal concerning the need to harmonize State's individual NAT implementation programmes, commitments and requirements as well as the need to ensure a cooperative approach to developing CNS/ATM systems for the NAT Region. In this context, it was pointed out that incremental benefits to the users may be necessary in order to encourage them to equip their aircraft at an early date and that cooperation between States was a prerequisite to such action.

3.3.2 Furthermore, with the intent of keeping costs down, it was mentioned that, where spare simulation capacity was available, such availability should be made known to other States and that administrations should publish and distribute results of their trials and simulations so that work already carried out would not be duplicated unnecessarily.

DECISION 1/2 - HARMONIZATION OF STATES' INDIVIDUAL NORTH ATLANTIC (NAT) IMPLEMENTATION PROGRAMMES

That NAT provider States:

- a) **establish common processes to evaluate priorities for the implementation of major changes and the future integration of systems;**
- b) **identify and agree on those operational and functional requirements which are considered to be essential for their Oceanic Area Control Centres (OAC) to have in common and agree on the required level of commonality;**
- c) **participate in joint procurement on those occasions when they perceive this to be beneficial;**
- d) **establish common technical interface protocols for Air Traffic Management (ATM) equipment to meet common operational and functional requirements;**
- e) **where possible, introduce all changes in separation standards in the NAT Region on a common date following coordination amongst the administrations concerned; and**

Note: Where this is not possible, partial introduction could be undertaken based on agreement by the administrations concerned and with common introduction dates in adjoining Oceanic Control Areas (OCA).

- f) **take a cooperative approach to developing CNS/ATM issues in the NAT Region.**

3.4 COST/BENEFIT ESTIMATIONS

3.4.1 The Meeting was presented with information on cost benefit estimations for the implementation of reduced vertical separation minimum (RVSM) and automatic dependent surveillance (ADS) in the NAT Region. It was noted that the material on RVSM had been taken into account by the NAT SPG when it had developed the implementation plan for RVSM. As regards the data on ADS, it was pointed out that the information was dated and that it would be necessary to carry out

another study before proceeding with detailed implementation planning. The information was noted as well as the need for the NAT SPG to request a State to carry out the study on behalf of all NAT providers in accordance with the NAT SPG's terms of reference.

3.5 COST SHARING AND RECOVERY

3.5.1 The Meeting was informed that the possibilities for co-operation in the form of cost sharing may increase in the future. Continued advances in technology, including CNS/ATM implementation, combined with increased difficulties in raising capital to finance new projects and growing emphasis on cost-effectiveness, may be expected to encourage States to consider the possibility of introducing cost sharing arrangements. It was noted that ICAO was willing to provide assistance in developing such arrangements and, if necessary administer them, as has been demonstrated in the development of the proposed joint financing arrangement for the NAT height monitoring system.

3.5.2 Cost sharing arrangements could also provide for the recovery of capital and operational and maintenance costs through the existing user charge arrangements of the States concerned or through a NAT user charge which could represent a cost-effective approach that could be used for other NAT projects in the future. The Meeting noted that ICAO was also willing to assist in establishing and administering such arrangements, if requested, provided that ICAO's costs were recovered.

3.5.3 The Meeting was presented a synopsis of the cost recovery mechanism used by the United States which, to a great extent, differed from the methodology used by other States. In order to ensure the participation of the United States in future cost sharing/recovery schemes, it was noted that the NAT SPG should consider alternative funding solutions to accommodate the United States approach when contemplating improvements and/or implementing future CNS/ATM system elements.

3.6 RESULTS OF THE SPECIAL NAT SPG MEETING

3.6.1 The Meeting was informed that the NAT SPG had met in a special session on 17 and 18 January 1994 to address matters related to the type of height monitoring system to be used to support the implementation of reduced vertical separation in the NAT Region as well as issues related to cost sharing and recovery. The Meeting was also informed that the Special NAT SPG had identified three issues which should be brought to the attention of the NAT high level managers. The first related to the need for all States to commit the necessary resources to the project in order to ensure that the planning milestones were met (Decision 1/1 above also refers).

3.6.2 The second issue related to the need for all the States participating in the cost sharing/recovery to commit, by May 1994, the availability of funds required to proceed with the implementation programme in order to begin payments in April 1995. In this context, the Representative from Iceland expressed some concern about the ability of his State to meet the above deadline as it would be necessary to coordinate this matter with several ministries within his administration.

3.6.3 The last issue which had been addressed by the NAT SPG related to the requirement to establish joint financing arrangements in the most flexible manner possible. In particular, it was stressed that arrangements should be as informal as possible (section 3.5 above also refers).

3.7 GLOBAL NAVIGATION SATELLITE SYSTEMS (GNSS)

3.7.1 The Meeting was presented with information on the potential benefits of using GNSS in the NAT Region and, in particular, the Global Positioning System (GPS). The Meeting decided that the NAT SPG should develop a work programme aimed at deriving benefits from GPS in its present form, as well as looking into augmentation, as necessary, to maximize user benefits regionally. When deciding on the foregoing, the Meeting was of the opinion that the first task should be to develop operational requirements so as to justify the possible need for GPS in the NAT Region keeping in mind that current inertial systems already provided good enroute navigation performance.

LIST OF PARTICIPANTS

CANADA

Gilles RODRIGUE
Don MacKEIGAN

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Svend Erik ANDRESEN
Karsten THEIL (Chairman)

FRANCE

Philippe JAQUARD
André BERMAN
Jacques DOPAGNE
Jean-Marc FAYÏSSE

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Are LIEN
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UNITED STATES OF AMERICA

Billy F. JEFFERS
Frank PRICE

ICAO

Christian EIGL (*Secretary*)
Rod HEITMEYER
Norman OSTIGUY
Daniel OUDIN
Jacques VANIER

- END -

