



International Civil Aviation Organization

**Fifth Meeting of Aeronautical Telecommunication Network (ATN)
Transition Task Force of APANPIRG**

Phuket, Thailand, 9 – 13 June 2003.

Agenda Item 7: Review the development of guidance material for the use of Public Internet Technology to support AFTN.

**ESTABLISHMENT OF THE AVIATION USE OF
THE PUBLIC INTERNET STUDY GROUP (AUPISG)**

SUMMARY

The attached paper provides information on the action taken by ICAO regarding the establishment of the Aviation Use of the Public Internet Study Group (AUPISG) to assist the Secretariat in the development of relevant provisions for use by States.

(Presented by the Secretariat)

1. Introduction

1.1 The Air Navigation Commission reviewed the attached AN-WP/7809 on 4 April 2003 and agreed to establish AUPISG. The size of the Group is expected to consist of six members. Australia, Brazil, Canada, Switzerland, United Kingdom and the United States have been invited to nominate members for participation in the work of the Study Group and notify ICAO Headquarters by 27 June 2003.

2. Discussion

2. It is expected that the work of the Study Group can be completed within one and half years. Primarily, the task for the Group is expect to progress through correspondence. However, it is expected that two meetings will be held during the course of the work.

3. Action by the Meeting

3. The meeting is expected to note the action taken by ICAO.

APPENDIX A

DRAFT EXECUTIVE SUMMARY FOR A NEW ANC TASK

ANC Task No. CNS-0301: Aviation use of the public Internet

Priority: A

1. Problem statement

The widespread availability, speed, ease of use and relatively low cost of the public Internet has been appealing to the aviation community. Several States are already using the Internet for collection, dissemination or exchange of aeronautical data and/or message. There is a need for appropriate ICAO provisions governing the use of the public Internet to harmonize operating procedures employed in different States.

2. Source of requirement and date

MET Divisional Meeting (2002)

3. Objective of task

Study the subject of the use of the public Internet for aeronautical applications (including safety-critical applications) and develop guidelines and other provisions as appropriate.

4. Effort required to complete the outstanding work of the task

- a) ICAO: 2003 — Fourteen professional work-weeks
2004 — Fourteen professional work-weeks
2005 — Six professional work-weeks
Beyond — Nil
- b) States: Support work of AUPISG

5. Coordination

AIS/MAP, ATM, MET

6. Progress and expected output

New task.

7. Estimated date and final action by ANC

2004 — Approval of guidelines.

8. References

MET Divisional Meeting (2002) Recs 4/5 and 4/6

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AIR NAVIGATION COMMISSION

**ANC Task No. CNS- Aviation use of the public Internet
0301:**

APPROVAL OF AN EXECUTIVE SUMMARY FOR A NEW TASK AND OF THE ESTABLISHMENT OF A NEW STUDY GROUP

(Presented by the Director of the Air Navigation Bureau)

SUMMARY

This paper proposes the initiation of studies on the aviation use of the public Internet and the establishment of a new study group to assist the Secretariat in the development of relevant provisions for use by States.

Action by the Air Navigation Commission is at paragraph 4.

COORDINATION

AIS/MAP, ATM, MET

REFERENCES

[AN-WP/7778](#)

*Report of the MET Divisional

AN Min. 161-12

Meeting (2002) (Yellow Cover)

Memorandum C19-16/02-01

*Principal references

1. Introduction

1.1 The Air Navigation Commission (161-12), in its review of the report of the MET Divisional Meeting (2002) ([AN-WP/7778](#) refers), agreed that the subject of the use of the public Internet should be considered in a wider context taking into account all aeronautical data (Recommendation 4/6 of the MET Divisional Meeting (2002) refers). The Commission further agreed that the issue should be progressed by a new CNS study group, in coordination with the AIS/MAP and MET Sections.

1.2 In light of the above, this paper presents a proposal for the initiation of the work on the development of guidelines and possibly other provisions relating to the use of the public Internet for collection, organization, dissemination and exchange of various categories of aeronautical data and/or messages. Such guidelines should address issues such as reliability, accessibility, integrity and security (mainly the authenticity) that are associated with the use of public facilities for aeronautical applications (including safety-critical ones).

1.3 The development of guidelines is considered the first step in the process of dealing with the Internet. After reviewing the guidelines, the Commission may decide to undertake further work on the subject which may include the development of a policy or other ICAO provisions.

2. Background

2.1 The Internet, which can be described as a loosely organized international collaboration of autonomous interconnected networks (using the Transmission Control Protocol/Internet Protocol (TCP/IP)), has had an explosive growth in recent years. Although the Internet is not under any governmental or centralized control and is used by the public for a variety of applications, its speed, ease of use, widespread availability and low cost have been appealing to the aviation community. Several States have already started using the Internet for provision of aeronautical information (mainly for MET and in some cases for AIS). Also, in some parts of the world, where dedicated aeronautical communication systems are inadequate or cannot be economically justified due to low traffic levels, the Internet is being used as a means of ground-ground communications.

2.2 ICAO has also been using the Internet but only for administrative communications and dissemination of information and/or documents. The Organization has, however, developed the aeronautical telecommunication network (ATN) as the "Aeronautical Internet" that meets strict operational and performance requirements of aeronautical safety communications. More detailed information on the Internet and the ATN has been provided to the Commission in Memorandum C19-16/02-01 dated 25 April 2002.

2.3 The notion of using the Internet to support some aeronautical operations has been treated by ICAO with great care, mainly for the following reasons:

- a) the international civil aviation community has traditionally been using dedicated communication systems and is, in general, reluctant to share communication media with the public because of reliability, integrity, accessibility and security concerns;
- b) the expectation has been for States to implement systems that have been standardized by ICAO and reflected in regional air navigation plans (e.g. aeronautical fixed telecommunication network (AFTN) or air traffic services message handling system (AMHS) which is the ground-ground element of the ATN) rather than to use other commercial systems; and
- c) the public Internet has been and will continue to evolve without any influence or involvement from the international civil aviation community or ICAO.

2.4 Notwithstanding the above, the use of the Internet by the aviation community has been growing. This is evident from the fact that most regional meetings have been discussing the subject and from discussion at the MET Divisional Meeting (2002), which led to two recommendations (Recommendations 4/5 and 4/6 refer).

3. Guidelines on the operational use of the internet

3.1 In light of the foregoing, it is proposed that a new study group, designated as the "Aviation Use of the Public Internet (AUPISG)" be established to assist the Secretariat in conducting the necessary studies and to develop guidelines for use by States. The subject studies are to be conducted under a new ANC task for which a draft executive summary is provided in the appendix to this paper. Subject to approval by the Commission, effort requirement of few other CNS tasks will be adjusted so that the new task can be progressed without the need for additional resources.

3.2 It is further proposed that the subject guidelines be developed based on the following premises:

- a) consideration of the use of the public Internet would be only in the context of ground-ground communications and for non-time critical applications. In this regard, the term "non-time critical" implies that the data/message being transferred over the Internet has no immediate effect on an active flight;
- b) the use of the public Internet would not be considered as an alternative to the facilities and services that should be implemented in accordance with regional air navigation plans, although such use may be considered as backup to, or pending the implementation of, such facilities;
- c) aeronautical communication services that are offered in accordance with ICAO provisions (e.g. AFTN or the new AMHS) are primarily for use by aeronautical entities involved in the safety, regularity and efficiency of flight. The extension of such services to the general public (e.g. access to data banks or filing flight plans from home) has not been envisaged and, therefore, will not be provided by the standardized systems. In this regard, the use of the Internet as a medium for public accessibility may prove to be useful and will be examined;
- d) as a general rule, no operational requirements can be imposed on the Internet. However, some limited local performance measures (e.g. speed and grade-of-service) can be negotiated between the user and the Internet service provider. Such local measures may have insignificant effects on the overall performance as a typical international data transfer may involve many different networks of varying speeds and performances;
- e) TCP/IP protocol suite used in the Internet provides reliable end-to-end communications. The probability of undetected errors in communications over the Internet in normal circumstances is therefore extremely low. However, being a public medium, the Internet is susceptible to information security attacks. Commercial off-the-shelf security solutions are available to protect sensitive communications from such attacks. The use of such solutions will be examined, mainly to ensure the authenticity and integrity of communications, when appropriate;
- f) other performance-related issues relevant to the use of the public Internet include reliability (or availability) of the service (s) and accessibility (time/effort spent by a client to access the Web site containing the information). Measures to monitor and improve those performance indicators will be reviewed; and

g) there is a need for an agreed set of criteria for accreditation/qualification of entities which provide aeronautical information over the public Internet. This should include guidelines concerning the accuracy and reliability of the data at source. In this regard, the possibility of using specific domain names for designating accredited entities should be investigated.

3.3 Several States have already developed some guidelines on the subject for their internal use. The proposed study group will draw upon the work already done and thus should be able to complete the development of the subject guidelines in about one year's time.

3.4 Professional officers of the Secretariat with expertise in aeronautical information service (AIS), air traffic management (ATM), information and communication technology (ICT) and meteorology (MET) would participate in the studies. Furthermore, the work of the study group would be coordinated with the World Meteorological Organization (WMO) as and when required.

4. Action by the Air Navigation Commission

4.1 The Air Navigation Commission is invited to:

- a) approve the executive summary for the new ANC Task No. CNS-0301 shown in the appendix; and
- b) agree to the establishment of the "Aviation Use of the Public Internet Study Group (AUPISG)" to assist the Secretariat in undertaking the necessary studies and developing guidelines based on premises shown in paragraph 3.2.

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