

**AERONAUTICAL TELECOMMUNICATION NETWORK PANEL
WORKING GROUP 2
(ATN INTERNET)**

**Langen, Germany
23-26 June 1997**

Quality of Service Provisioning in the ATN

(Presented by Steve Van Trees (USA))

Summary
Further detailed work on quality of service provisioning in the ATN is proposed.

1. Introduction

SARPs 1. specify the association of the ATSC Class with the desired end-to-end transit delay. Each of the application SARPs has provisions to map such a specification from its user to the ATSC Class parameter. The upper layer and internet SARPs specify the mapping of the ATSC Class into the CLNP NPDU security label. Finally, SARPs 5.3.2.2.3.2.2 specifies the provisions for the Air/Ground Router to forward CLNP PDUs with ATSC Class specified in the Security Parameter in the CLNP NPDU header. However, nothing in these provisions guarantees the association of an ATSC class with an end-to-end transit delay.

2. Discussion

SARPs 5.3.2.2.3.2.2 specifies the provisions for the Air/Ground Router to forward CLNP PDUs with ATSC Class specified in the Security Parameter in the CLNP NPDU header. However, this provision dictates strong QOS on traffic type and weak QOS on ATSC class. Thus, the NPDU receives only best-effort treatment through the ATN internet. If the required ATSC Class is not available, a higher class (less delay) is chosen. There is no indication to the user of a) failures to meet expected QOS at a given router, b) QOS high-water marks, or c) achieved QOS vs. desired QOS.

QOS provisioning is an important action for CNS/ATM-2, as application users seek real-time guarantees.

Three stages of provisioning are proposed:

First, current guidance material could be updated to recommend that routers be instrumented to record when the traps in SARPs 5.3.2.2.3.2.2 are actually encountered. This would give administrations a view of when routers actually downgraded (or upgraded) expected QOS. This could be done with no new SARPs.

Second, when CNS/ATM-2 system management is specified, router Managed Objects could then be interrogated to determine router sizing and performance. This would require new system management and router SARPs (again in the CLNP forwarding provisions).

Third, enhancements to IDRP could be considered. These enhancements would consider current work such as the IETF QOS Routing Mechanisms and OSPF extensions (draft-guerin-qos-routing-ospf-01.txt). The goal of the document is to identify a framework and possible approaches to allow deployment of QOS routing capabilities with the minimum possible impact to the routing

infrastructure. The document specifies the encoding of bandwidth limitations and delay within the routing protocol and building routes based on that information.

3. Conclusion

WG2 is invited to consider the first stage above for immediate inclusion in its Guidance Material v2.1. WG2 is invited to consider the latter stages in its work plan as appropriate.