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# **Guidelines for Approval of the Provision and Use of Air Traffic Services Supported by Data Communications**

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## FOREWORD

This guidance document was jointly prepared by Special Committee 189 (SC-189) and the European Organization for Civil Aviation Equipment (EUROCAE) Working Group 53 (WG-53) and approved by the RTCA Program Management Committee (PMC) on December 14, 2000.

RTCA, Incorporated is a not-for-profit corporation formed to advance the art and science of aviation and aviation electronic systems for the benefit of the public. The organization functions as a Federal Advisory Committee and develops consensus based on recommendations on contemporary aviation issues. RTCA's objectives include, but are not limited to:

- coalescing aviation system user and provider technical requirements in a manner that helps government and industry meet their mutual objectives and responsibilities;
- analyzing and recommending solutions to the system technical issues that aviation faces as it continues to pursue increased safety, system capacity and efficiency;
- developing consensus on the application of pertinent technology to fulfill user and provider requirements, including development of minimum operational performance standards for electronic systems and equipment that support aviation; and
- assisting in developing the appropriate technical material upon which positions for the International Civil Aviation Organization and the International Telecommunications Union and other appropriate international organizations can be based.

The organization's recommendations are often used as the basis for government and private sector decisions as well as the foundation for many Federal Aviation Administration Technical Standard Orders.

Since RTCA is not an official agency of the United States Government, its recommendations may not be regarded as statements of official government policy unless so enunciated by the U. S. government organization or agency having statutory jurisdiction over any matters to which the recommendations relate.

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## 1 INTRODUCTION

The International Civil Aviation Organization (ICAO) has introduced the concept of the communication, navigation, and surveillance/air traffic management system (CNS/ATM). This concept will enable improvements in ATM worldwide through the application of modern technologies to provide air traffic services (ATS). These ATS include the use of data communications between the operators and the ATS providers and will require an allocation of operational, functional, technical, and performance requirements to the different elements that comprise the CNS/ATM system. The CNS/ATM system elements will need to be qualified, separately and when integrated, for approval to ensure that the system performs as intended and is acceptably safe. [Figure 1-1](#) at the end of this sub-section shows the CNS/ATM system in its operating environment.

For classical technologies, ICAO has standards in order to ensure worldwide interoperability between any aircraft and any ATS provider under the responsibility of the contracting States. The use of data communications between ATS providers and aircraft increases system complexity. Because of this increased complexity, ATS supported by data communications require a high degree of coordination among the stakeholders and approval authorities to ensure compatibility between operator use and ATS provision. There is a need for State/industry-accepted guidance material on the processes for coordinating implementation requirements and qualifying for different types of approvals.

This guidance material was developed considering the provision and use of ATS supported by data communications. The term “ATS” is used throughout this document to refer to “ATS supported by data communications.” These include communication services such as communication management and clearances, navigation services such as flight planning, required navigation performance (RNP) monitoring and gross navigation error (GNE) prevention and detection, surveillance services such as position and intent reporting, and services that support ATM automation.

This guidance material is intended for stakeholders and approval authorities involved in the operational implementation of the provision and use of ATS supported by data communications. Stakeholders are those organizations that have a financial investment in the provision and use of ATS. Stakeholders include ATS providers, ATS equipment manufacturers, supporting service providers, such as those that provide communication and weather services, aircraft and equipment manufacturers, and operators. These stakeholders may be identified as applicants in the context of this document. Approval authorities are those organizations in control of or responsible for issuing approvals to any element of the CNS/ATM system.

This guidance material comprises criteria in clear and concise format to enable consistent results in its application throughout the world. The guidance material was developed jointly by RTCA, Inc. and the European Organization for Civil Aviation Equipment (EUROCAE) in consideration of the International Civil Aviation Organization (ICAO) activities and in cooperation with States worldwide.