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Guidance for Certification of Installed Automatic Flight Guidance and Control Systems (AFGCS) for Part 27/29 Rotorcraft

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FOREWORD

This report was prepared by Special Committee 220 (SC-220) and approved by the RTCA Program Management Committee (PMC) on March 21, 2012.

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 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 Telecommunication 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 and several advisory circulars.

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.

EXECUTIVE SUMMARY

In response to a request by Mr. Nicholas A. Sabatini, FAA Associate Administrator for Aviation Safety, RTCA, Inc. SC-220 was formed to create an installation guidance document for Automatic Flight Guidance and Control Systems (AFGCS) for Part 27/29 rotorcraft. This guidance is designed to support operators with AFGCS to operate safely and efficiently in the National Air Space (NAS). The committee's proposed installation guidance for AFGCS will support the use of these systems in current and future NAS operations. This guidance will standardize and streamline the installation and compliance demonstration process. SC-220 includes representatives from avionics manufacturers, rotorcraft manufacturers, rotorcraft operators, regulatory agencies, and related industry associations.

This AFGCS installation guidance document will be used to support equipage of a wide variety of rotorcraft. This installation guidance document should be useful for designers, equipment manufacturers, aircraft manufacturers, aircraft operators, installers, and aviation authorities.
This AFGCS installation guidance addresses but is not limited to: installed performance of functions, characteristics of specific modes, AFGCS integrations, safety assessment, compliance demonstration and rotorcraft flight manual requirements. Relevant definitions and acronyms are included in the appendices. Recently published RTCA DO-325 document addresses the items intentionally excluded from this document.

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