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Aeronautical Information System Security Framework Guidance

RTCA DO-391
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FOREWORD

This document was prepared by Special Committee 216 (SC-216) Aeronautical Information Systems Security jointly with EUROCAE Working Group 72 (WG-72) and approved by the RTCA Program Management Committee (PMC) and the EUROCAE Council on December 16, 2021.

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 Standards Development Organization 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 advisory circulars.

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1 INTRODUCTION

This document is the joint product of two industry committees: the EUROCAE Working Group WG-72, titled "Aeronautical Information Systems Security" and the RTCA Special Committee SC-216, also titled "Aeronautical Information Systems Security". WG-72 was formed to address information security for the overall Aeronautical Information System Security (AISS) of airborne systems with related ground systems and environment, while SC-216 was formed more specifically to address information security for certification of aircraft and its systems. Both committees agreed that the guidance provided by this document and its companion documents constitute aviation best practices to address the increasing potential for Intentional Unauthorized Electronic Interaction (IUEI) with aeronautical information systems. Both committees agree that the guidance is suitable for use as acceptable means of compliance in relevant jurisdictions. For a discussion of the usage of ED-201A/DO-391 and its relation with other EUROCAE/RTCA documents please see Appendix G. Appendix H provides a revision guide of the major changes to the ED-201 document, which was a sole publication of EUROCAE.

1.1 Purpose

This document is concerned with the overarching context of the shared responsibility for AISS through the identification and description of topics which have to be addressed. It deals with shared responsibility of all relevant stakeholders who are part of civil aviation. The purpose of security in this context should be understood as ensuring safety of flight and maintaining the operation of the civil aviation infrastructure without significant disruption.

1.2 Scope

The AISS guidance in this document may be used to address relevant aviation areas including:

- Aircraft design and production and aircraft components,
- Aircraft operations, maintenance repair and overhaul operations (MRO) and airports,
- Air Traffic Management (ATM) which includes but is not limited to the assets, resources that are used in the operations and delivery of Performance Based Navigation (PBN) and Performance Based Communication and Surveillance (PBCS) and Aviation Service Providers (ASP),
- Unmanned Aerial Systems (UAS) and Unmanned Aircraft System Traffic Management (UTM) operations and organizations that provide or exchange information that have an impact to ATM (Air Traffic Management) automation systems or human resources and the decision making processes for ATM or aircraft operations (such as NOTAMS (Notices to Airmen), weather, obstacles, routes & restrictions, manuals & charts, etc.),
- This guidance extends as appropriate to the supply chains of all the above, which use or are involved in the delivery of hardware, software and information exchange; and
- Where appropriate, requirements relating to military aviation might also be in the scope of this document.

The military and its special role and position in the aviation system, its motivations, constraints and capabilities are fundamentally different when compared with the economic and safety focused approach of civil aviation because the primary objective for military aviation is to ensure security and defense of national airspace. Aside from this objective,

