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Recommendations Regarding the Concept of Equipage and Mandated versus Voluntary Considerations

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Foreword

This report was approved by the RTCA Free Flight Steering Committee on August 21, 2002.

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 system technical issues that face aviation 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 (ICAO) 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 (FAA) 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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Table of Contents

APPENDICES

TABLE OF FIGURES

EXECUTIVE SUMMARY

The Federal Aviation Administration's (FAA) Operational Evolution Plan (OEP) is intended to provide a framework for a milestone driven implementation of capabilities, which increase the capacity and efficiency of the National Airspace System (NAS). The OEP focuses on four major problem areas including en route severe weather, en route congestion, arrival/departure rate, and airport weather conditions. It is a living plan with a goal to achieve an estimated 30% NAS capacity improvement by 2010 and is intended to adjust to new priorities and new technologies as they emerge and mature.

The RTCA Free Flight Steering Committee has accepted the role of facilitator and coordinator of industry commitment to the OEP. This committee at the request of the FAA Director, OEP, formed the Concept of Equipage (CoE) and the Mandated vs. Voluntary Equipage (MvV) Recommendations working groups to promote community participation.

Concept of Equipage Working Group (CoE)

The CoE objective was to develop a recommended process and milestones for preparing a Concept of Equipage. The Select Committee's recommendations(s) were to consider industry's on-going equipage related initiatives and include time lines as well as other issues including those attendant with all segments of the fleet. As the CoE Working Group proceeded in it's tasking, it conducted a detailed analysis of the OEP initiatives that had aircraft equipage implications. It was found that there were essentially four broad categorizations of capabilities that may require aircraft equipage: DRVSM, RNAV, CPDLC (ATN) and FANS-1/A. As the group's work continued, it was realized that a "Concept of Equipage" was not able to be completely defined at this time. This is due to the need for additional detail of capabilities requiring aircraft equipage in the current version of the OEP. The recommendations identified reflect the need for further work and information to satisfy the original objectives.

Concept of Equipage Recommendations

The following recommendations were developed by the Concept of Equipage group and, if adopted, will provide the needed information to develop more specific future Concept of Equipage guidelines for users.

1. Clearly define and provide more detail for those OEP capabilities that result in aircraft equipage requirements. This is necessary to refine avionics equipage to determine specific costing and installation timelines.
2. Determine the costs and benefits associated with various levels of incremental equipage (e.g., can 80% of the airspace capacity enhancement be realized from 20% equipage? or can significant benefits be realized from regional or hub implementations?).
3. Identify user ground infrastructure required by some OEP solutions (e.g., flight planning software, simulators, surface management systems, etc.).