

**Government/Industry Operational Concept  
for the Evolution of Free Flight**

**Addendum 1:**

**FREE FLIGHT PHASE 1**

**Limited Deployment of Select Capabilities  
(URET, TMA (SC), pFAST, CPDLC, CDM, SMA)**

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## **Foreword**

This report was approved by the RTCA Free Flight Steering Committee on August 19, 1998.

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- 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.

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## Section 1

# Introduction

This document supplements the government and industry consensus on the operational concept for National Airspace System (NAS) modernization reflected in *Government/Industry Operational Concept for the Evolution of Free Flight* by focusing on Free Flight Phase 1 (FFP1) capabilities. It reflects the perspectives of NAS users and service providers. This supplement to the operational concept covers the near-term period 1998 to 2002, during which the FFP1 capabilities will be implemented at specified locations. While focusing on FFP1 capabilities, this document also covers related concepts and capabilities of other NAS modernization efforts occurring during this time period. This document is the basis for both the Federal Aviation Administration (FAA) and the user community plans for procedural, investment and architectural decisions that will make FFP1 a reality.

## 1.1 Background

The goal of FFP1 is to provide near-term air traffic management (ATM) capabilities that can provide early benefits to service providers and NAS users, leveraging proven technologies with needed procedural enhancements and appropriate standards. From the outset, RTCA Task Force 3 recognized the need to evolve to a mature Free Flight concept<sup>1</sup> through safe, benefits-driven incremental steps. RTCA Task Force 3 also recognized the notion of implementation risk: “Significant benefit to airspace users and service providers is achievable from near-term actions. Emphasis needs to be placed on what can be done now that will provide significant benefits at low cost and low implementation risk.”

In this context, recent events associated with NAS modernization activities and decisions are a reaffirmation of the guiding principles and the foundation initially set by the RTCA Task Force 3 in 1995. The RTCA Task Force 3 report, *The Final Report of RTCA Task Force 3: Free Flight Implementation* defined the Free Flight concept, evaluated the Free Flight architecture and technology needs, and identified an incremental transition to Free Flight. The Free Flight Steering Committee was established in 1996 to oversee the implementation of the recommendations of Task Force 3. During the same year, the RTCA Select Committee on Free Flight Implementation was established as the working arm and a

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<sup>1</sup> Free flight is “...a safe and efficient flight operating capability under instrument flight rules (IFR) in which the operators have the freedom to select their path and speed in real time. Air traffic restrictions are only imposed to ensure separation, to preclude exceeding airport capacity, to prevent unauthorized flight through Special Use Airspace (SUA), and to ensure safety of flight. Restrictions are limited in extent and duration to correct the identified problem. Any activity which removes restrictions represents a move toward free flight.”