



ICAO

International Civil Aviation Organization

INFORMATION PAPER

Twenty-fifth Meeting of the Meteorology Sub-group
(MET SG/25)

Online, 18 – 22 October 2021

Agenda Item 5: Research, development and other initiatives**CHARTING AVIATION'S FUTURE: OPERATIONS IN AN INFO-CENTRIC NATIONAL AIRSPACE SYSTEM**

(Presented by United States of America)

SUMMARY

“*Charting Aviation’s Future: Operations in an Info-Centric National Airspace System*” is the Federal Aviation Administration’s (FAA) plan and vision for implementing the conceptual roadmap presented in the sixth edition of the ICAO Global Air Navigation Plan (GANP). This paper provides a very brief introduction of the FAA’s vision, which will be published soon.

1. INTRODUCTION

1.1 The United States (U.S.) Federal Aviation Administration (FAA) has been improving its national airspace system since its inception in the 1950s. As new technology has been introduced, the national airspace system has evolved from procedure-based operations to radar-based operations, to the present satellite-based operations and digital data communications.

1.2 In the early 2000s the FAA began the implementation of the Next Generation Air Transportation System (NextGen), which transformed and improved both national and international air operations. As the FAA nears the apex of NextGen (2025), the FAA is planning to transition to an information (info) centric vision for its national airspace system through the 2035 timeframe (Figure 1).

Transition to Info-centric Vision

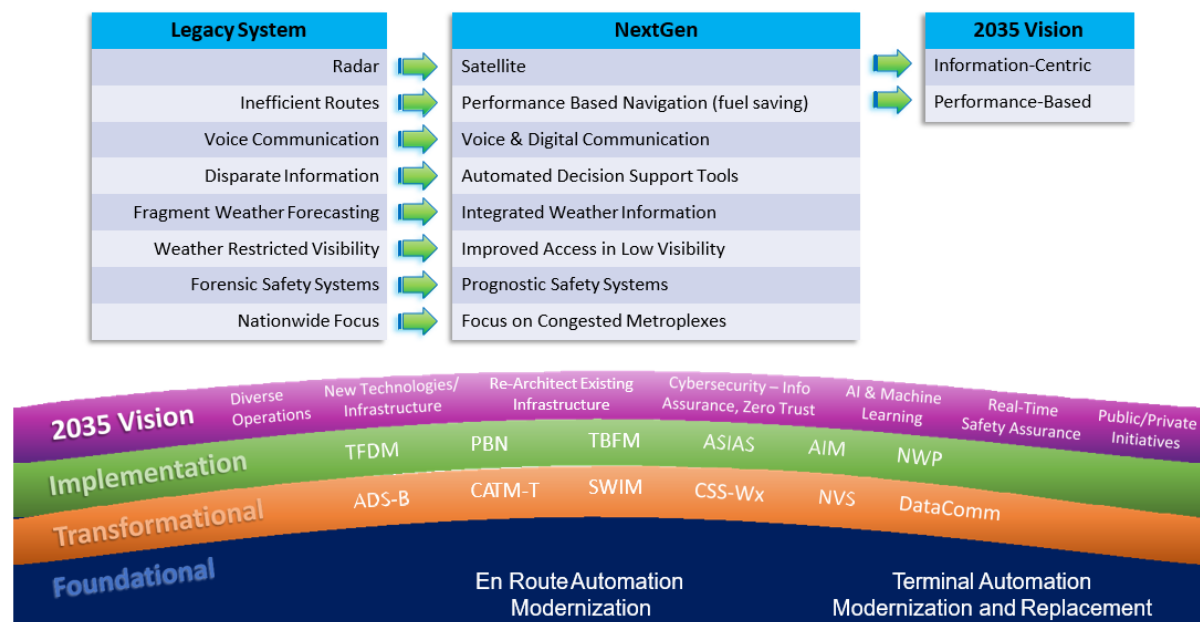


Figure 1. FAA’s transition to an information (info)-centric vision.

2. DISCUSSION

2.1 The sixth edition (2019) of the ICAO Global Air Navigation Plan (GANP) introduced a conceptual roadmap. The GANP’s conceptual roadmap consists of four evolutionary steps: flight operations in a digital rich environment; time-based operations enabled by an information revolution; trajectory-based operations enabled by full connectivity through the internet of aviation; and a total performance management system focused on business/mission needs. Improved digital data quality, enhanced processing capability and sharing of information for better decision making based on agreed performance levels are the key components of this roadmap.

2.2 “*Charting Aviation’s Future: Operations in an Info-Centric National Airspace System*” is the FAA’s plan and vision for implementing the GANP’s conceptual roadmap. This document lays out FAA’s high-level vision for how new vehicle types and services (Figure 2) can be cost-effectively and sustainably integrated into the national airspace system through the use of modern software applications and infrastructure. The vision outlines how the FAA and user communities can work together to further define how new operations can work in a manner that continues to provide safe and more efficient services to aircraft while enabling new environmentally sustainable vehicle types to perform operations that meet their desired objectives. Central to the future is an integrated information environment that provides the data that drives future information services required for delivering interoperability and advanced predictive algorithms.

2.3 The FAA’s vision provides a framework to develop service-level concept and implementation plans. It helps to identify challenge areas that need to be examined to define the specific operational methods and technical requirements to build systems and services that make the vision a reality. The expectation is that initial services that are built to deliver this vision will be operational in all segments starting now and continuing through no later than 2035.

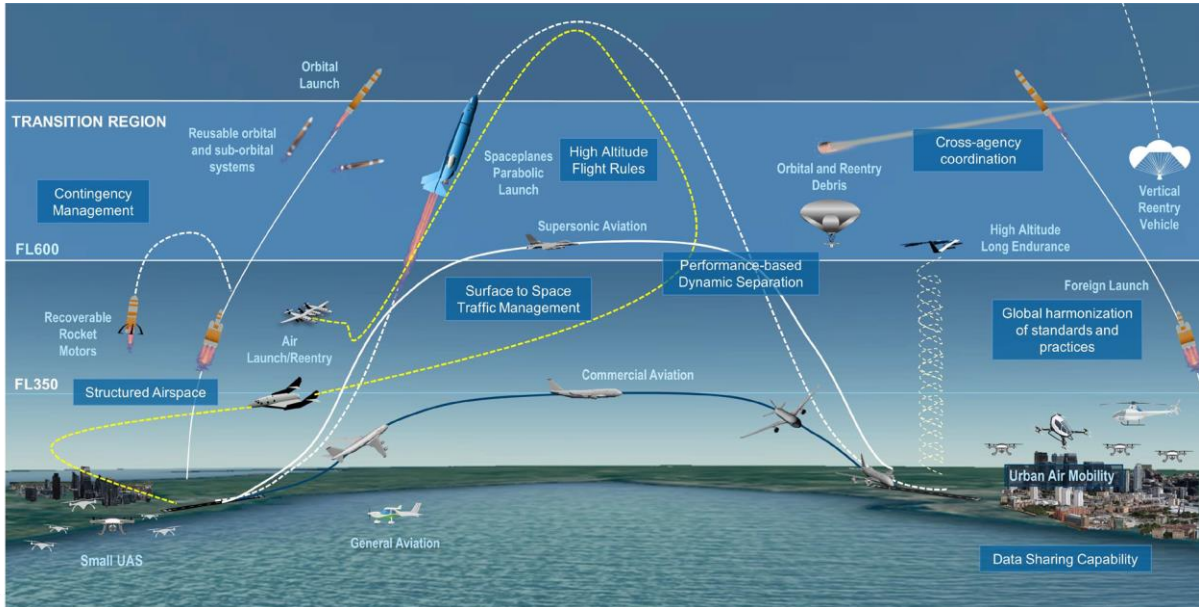


Figure 2. The FAA’s vision is driven by diverse vehicles, mission, and business models.

3. CONCLUSION

3.1 FAA’s strategic vision for 2035, “*Charting Aviation’s Future: Operations in an Info-Centric National Airspace System*”, will drive aviation research and development in the U.S. over the next 15+ years. It is the FAA’s plan and vision for implementing the conceptual roadmap presented in the GANP.

3.2 “*Charting Aviation’s Future: Operations in an Info-Centric National Airspace System*” will be released soon. Once it is released, a copy will be provided to the Secretariat to share as deemed appropriate.

4. ACTION BY THE MEETING

4.1 Note the information contained in this paper.
