



**Fifth GREPECAS–RASG-PA Joint Meeting (GREPECAS-RASG-PA/5) and
 Twenty-Third Meeting of the CAR/SAM Regional Planning and Implementation Group
 (GREPECAS/23)**

Virtual Phase (Asynchronous, 19 January to 17 February 2026)

In-Person Phase (Mexico City, Mexico, 4 to 6 March 2026)

Agenda Item 8: CAR/SAM Air Navigation Implementation

**THE IMPLEMENTATION OF FF-ICE/R1 SERVICES WORLDWIDE AND CHALLENGES
 FOR THE SAM REGION**

(Presented by Brazil)

EXECUTIVE SUMMARY	
<p>This paper provides an overview of the global implementation of Flight and Flow Information for a Collaborative Environment (FF-ICE/R1) services. Brazil, through DECEA, is also advancing in FF-ICE implementation by initiating development of the FF-ICE/R1 Operational Concept and developing a dedicated portal to disseminate related information. In November 2025, DECEA organized a workshop bringing together experts from the AIM and ATM domains, as well as ATM system developers, to promote knowledge exchange and advance progress. These initiatives may serve as a reference to support coordinated and harmonized implementation efforts within the SAM Region.</p>	
Action:	<ul style="list-style-type: none"> a) Support the work of GESEA's SG4 to address the implementation of the FICE elements provided by GANP in the SAM Region, in order to strengthen governance and foster the participation of relevant civil aviation stakeholders; b) Engage in close cooperation with Brazil to address mutual priorities concerning FF-ICE studies and implementation.
<i>Strategic Objectives 2026-2050:</i>	<ul style="list-style-type: none"> • Every flight is safe and secure • Aviation is environmentally sustainable • Aviation delivers seamless, accessible, and reliable mobility for all • No country left behind • The International Civil Aviation Convention and Other Treaties, Laws and Regulations Address All Challenges • The Economic Development of Air Transport Assures the Delivery of Economic Prosperity and Societal Well-Being for All
<i>References:</i>	<ul style="list-style-type: none"> • Doc 9750 • Doc 9854 • Doc 9882 • Doc 10039

1. Introduction

1.1 International civil aviation is undergoing a significant transition, during which the introduction of new concepts requires the adoption of advanced technologies and adjustments to established operational paradigms. One of these concepts is Flight and Flow – Information for a Collaborative Environment (FF-ICE), which aims to replace the current flight planning system with one that enables the exchange of globally standardized flight and flow information, addressing the limitations and constraints of the ICAO FPL 2012 format.

1.2 The exchange of large volumes of data with globally standardized elements, carried out by new flight planning systems and with greater advance notice than current systems and standards, will enable early sharing of operational intent, which in turn will support a higher level of automation in collaborative decision-making (CDM). For this transition to occur in a proper, harmonized, and standardized manner, States and Regions must act cooperatively.

1.3 In Europe, EUROCONTROL Network Manager (NM) is already implementing pre-take-off FF-ICE services (FF-ICE/R1), conducting tests and certifications with a view to scaling these services from 2026 onwards, coexisting with the FPL 2012 format, and in accordance with the implementation schedules of the States' ANSPs, planned between 2025 and 2030. Other States, such as Canada, Japan, the Republic of Korea, and others in the APAC Region, have also begun implementing FF-ICE/R1 services with estimated implementation between 2028 and 2032.

1.4 The South American (SAM) Region has progressed with the establishment of a group responsible for supporting the coordination, standardization, and interoperability of key ASBU FICE elements under the GANP, such as AIDC, FF-ICE/R1 and R2 services, and the modernization of flight management systems. Brazil is also taking steps to enable the implementation of the FF-ICE concept in the near future, as described in the next section.

2. Analysis

2.1 Currently, the implementation of FF-ICE/R1 services worldwide presents several challenges. These include the definition of a globally harmonized API for data exchange to avoid multiple bilateral interfaces between ANSPs, aligning FIXM file updates with ICAO technical documents, harmonizing SWIM architectures for metadata and routing issues, addressing cybersecurity, developing ATFM services integrated into FF-ICE, and the adaptation of ICAO Annexes and associated guidance material, among others.

2.2 GESEA Subgroup 4 (SG4) - FICE implementation (FICE IMPL) was established within the SAM Region during the Eighth Plenary Meeting of GESEA, held in Lima on March 2025. This subgroup was formed by integrating specialists from the SG ATM AIDC and SG ATM FPL subgroups to coordinate activities related to the GANP FICE module, including AIDC implementation, the transition from the ICAO FPL 2012 format (scheduled to end in 2034), and other information management responsibilities.

2.3 Regarding the post-implementation operationalization of the AIDC, the initial expectation of achieving full implementation among the Area Control Centers within the SAM Flight Information Regions by 2016 was not met, and the implementation remains ongoing, requiring minor adjustments, as well as the establishment of Letters of Operational Agreement.

2.4 The implementation of FF-ICE services in Brazil is being carried out within the scope of the FF-ICE BR Project, alongside other initiatives in the "Evolution of Air Traffic Management" project undertaken by DECEA's SIRIUS Program. Current activities include the development of an electronic portal providing information about the FF-ICE concept, services, and other relevant related information, the formulation of the national FF-ICE Operational Concept, as well as the work of expert groups to analyze the systems currently in use for flight plan processing and Air Traffic Management.

2.5 In addition to that, DECEA held an FF-ICE workshop in November 2025, with participation from experts from the Brazilian ATM community, during which topics such as the perspectives for SWIM implementation, the capabilities and functionalities of current ATM systems, and the requirements to enable FF-ICE/R1 services in the future were discussed.

3. Conclusion

3.1 Several States and Regions around the world are currently working to replace existing flight plan systems and implement FF-ICE/R1 services. These changes will require an operational paradigm shift and a globally coordinated effort to ensure a harmonized and standardized transition.

3.2 In the context of the SAM Region, the creation of GESEA's SG4 was extremely important for States in the region to improve flight plan systems and implement FF-ICE services in a harmonized manner, while adhering to a schedule that adequately address national needs and meet the deadline for the global cessation of the FPL 2012 format in 2034.

3.3 The work carried out by various States worldwide in implementing the FF-ICE concept, including that developed within the framework of the DECEA's SIRIUS Program and by other States in the SAM Region, will serve as a reference in terms of lessons learned and best practices for achieving a safe, harmonized and efficient implementation of FF-ICE services across the SAM Region.

4. Suggested actions

4.1 The Meeting is invited to:

- a) Support the work of GESEA's SG4 to address the implementation of the FICE elements provided by GANP in the SAM Region, in order to strengthen governance and foster the participation of relevant civil aviation stakeholders; and
- b) Engage in close cooperation with Brazil to address mutual priorities concerning FF-ICE studies and implementation.