FACTSHEET
FF-ICE: Flight and Flow Information for a Collaborative Environment

ICN INFO-CENTRIC NATIONAL AIRSPACE SYSTEM

The cornerstone of future air traffic management is the interaction through the dynamic and collaborative exchange of information. The Flight and Flow Information for a Collaborative Environment (FF-ICE) provides a collaborative decision-making environment that enables the sharing of appropriate data across a wider set of participants resulting in greater coordination of the ATM community, situational awareness and the achievement of global performance targets, enabling ICAO's Global Air Traffic Management Operational Concept.

FF-ICE Enabling TBO:

- Increases collaborative planning amongst ATM actors
- Enables dynamic trajectory management
- Decreases system delays through strategic coordination
- Allow for more direct routings aligned to business needs

- Supports better use of airspace with known constraints information
- Provides for real-time information exchange
- Reduces reliance on voice radio communications

Enhanced Flight Planning with Key Services:

Preliminary Flight Planning Service
Allows operators to submit flight plans for early Air Traffic Flow Management (ATFM) planning and to obtain feedback regarding restrictions/constraints affecting the flight.

Flight Plan Filing Service
Provides a means to submit flight plans through a modernized SWIM-based interface using FIXM and allows for more information to be provided.

Trial Request Service
Allows operators to test the effect of a potential change in a flight plan prior to committing to the change.

Flight Data Request Service
Allows an operator to request the current status of a flight plan, or an ASP can request an operator to submit the latest version of their flight plan.
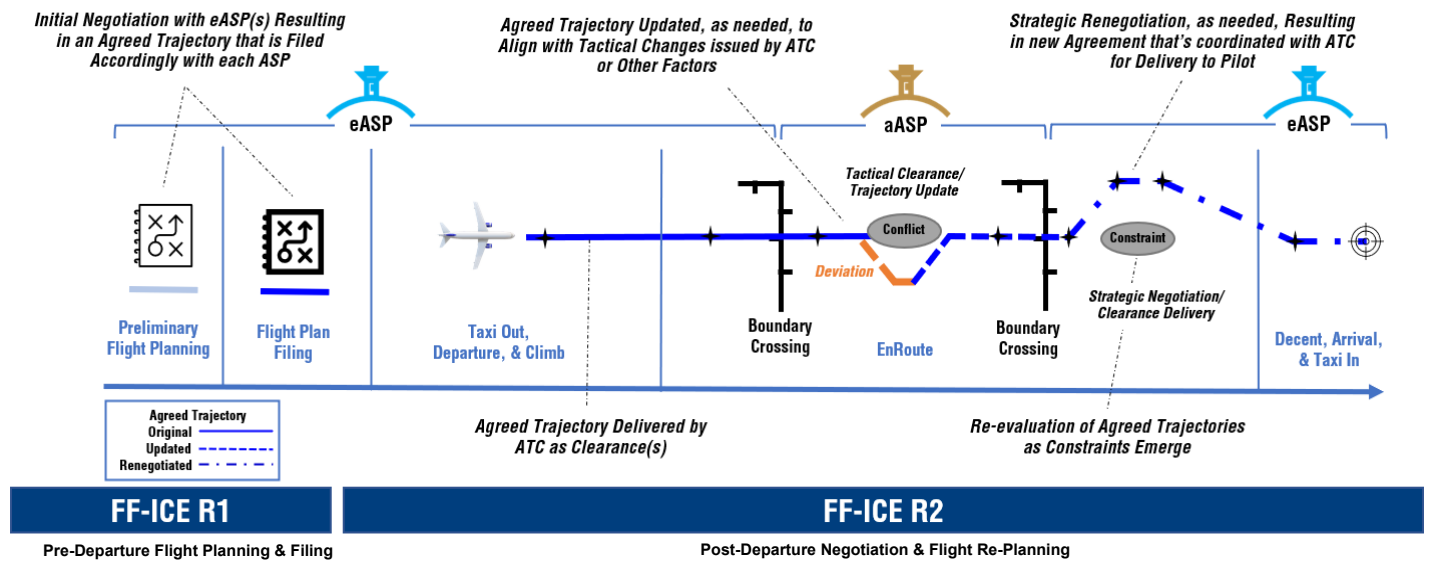
Publication Service
Provides harmonized sharing of flight information in a global standard supporting common situation awareness.

Notification Service
Provides notification of a change in flight state, such as provided in legacy Departure (DEP) and Arrival (ARR) Air Traffic Service (ATS) messages.

FF-ICE End-to-End:

Initial Negotiation with eASP(s) Resulting in an Agreed Trajectory that is Filed Accordingly with each ASP

Agreed Trajectory Updated, as needed, to Align with Tactical Changes issued by ATC or Other Factors

Strategic Renegotiation, as needed, Resulting in new Agreement that's coordinated with ATC for Delivery to Pilot

eASP

aASP

eASP

Tactical Clearance/ Trajectory Update

Conflict

Deviation

Constraint

Strategic Negotiation/ Clearance Delivery

Preliminary Flight Planning

Flight Plan Filing

Taxi Out, Departure, & Climb

Boundary Crossing

EnRoute

Boundary Crossing

Decent, Arrival, & Taxi In

Agreed Trajectory
Original ——————
Updated – – – – –
Renegotiated – · – · –

Agreed Trajectory Delivered by ATC as Clearance(s)

Re-evaluation of Agreed Trajectories as Constraints Emerge

FF-ICE R1	FF-ICE R2
Pre-Departure Flight Planning & Filing	Post-Departure Negotiation & Flight Re-Planning

FAA FF-ICE Supporting Activities:

PCAN.
Maturing FF-ICE/R2 concepts via a systematic design approach validating through guided discussions and tabletop exercises.

FIXM.
Develop and maintain FIXM model, support to the international FIXM CCB, assist FIXM users, and evaluate new FIXM data requirements.

FLIGHT OBJECT CONCEPT ENGINEERING.
Concept development activities, including ConOps, use cases, identification of business rules, and software development for proof of concept (POC) demonstrations.

CSS-FD.
Provides a standards-based flight planning and filing environment and a single common reference for legacy and FF-ICE capable user.

ICN