

Plans for FF-ICE/R1 Services

27 June 2023

Agenda

- Past Validation Activities
 - Table Top Exercises
 - Technical Trials
- Implementation Plans

Overview of Past and Present Activities for FF-ICE/R1 Services


	2018	2019	2020 - 2022	Beyond 2022
Activity 	Table Top Exercise	Table Top Exercise	Technical trials using prototypes Requirements gathering	Implementation
Stakeholders 	CAAS <ul style="list-style-type: none"> • ATM Planners • Flight planning specialists 	CAAS AEROTHAI Singapore Airlines Thai Airways	CAAS AEROTHAI FAA JCAB NAVCANADA MITRE ASIA PACIFIC	CAAS <ul style="list-style-type: none"> • ATM Planners • Flight Planning Specialist • Engineers System Vendors

Table Top Exercises – 2018 and 2019

Key Objectives

- Verify operational interactions between ATM service providers and airspace users and identify potential operational feasibility challenges especially in a mixed mode environment
- Identify functional capabilities required to support FF-ICE
- Feedback to ICAO for further development of FF-ICE materials
- Provide operational participants an opportunity to familiarise with FF-ICE concept

Scenarios

- Full FF-ICE Mode (origin eASP, destination eASP, overflight eASP)
- Mixed Mode (origin eASP, destination eASP, overflight aASP)



Table Top Exercises – 2018 and 2019

- Scenarios were acted out using email exchanges
- Walking through the process allowed participant to understand the FF-ICE environment better and discovered considerations that would otherwise not be possible through reading concept document.

Sample Event Flow

1. SIA submits Preliminary Flight Plan SIA 970 (to CAAS and AEROTHAI)
2. CAAS and AEROTHAI provide submission responses (ACK / REJ / MANUAL)
3. CAAS and AEROTHAI provide Planning Status (CONCUR / NEGOTIATE / NON-CONCUR) (note: planning status should not be provided later than 3 hours before EOBT)
4. SIA submits Trial Request for a different route (submission of trial request should only be to the affected eASPs)
5. CAAS / AEROTHAI provides submission responses (ACK / REJ)
6. CAAS / AEROTHAI provide Trial Status (CONCUR / NEGOTIATE / NON-CONCUR)
7. SIA continues to file flight plan based on latest PFP
8. CAAS and AEROTHAI provide submission responses (ACK / REJ / MANUAL)
9. CAAS and AEROTHAI provide Filing Status (ACCEPTABLE / NOT ACCEPTABLE) (note: filing status should not be provided later than 3 hours before EOBT)
10. SIA submits a request for a copy of the flight plan submitted and a request on flight status
11. Weather event at SIN FIR. Re-evaluation service triggered. No change to Filing status. (in scenario 2, FPL becomes not acceptable. Filing Status changed. CAAS feedbacks constraints to SIA)
12. SIA flight departs (in scenario 2, SIA revises FPL and submits Flight plan update to all ASPs)

Technical Trials Using Prototypes – 2020 to 2022

Key Objectives

- Improve understanding of FF-ICE integration and system needs
- Better understanding of SWIM implementation requirements for internal and external exchanges
- Test out exchange of messages in standardised data formats (FIXM, AIXM, IWXXM)

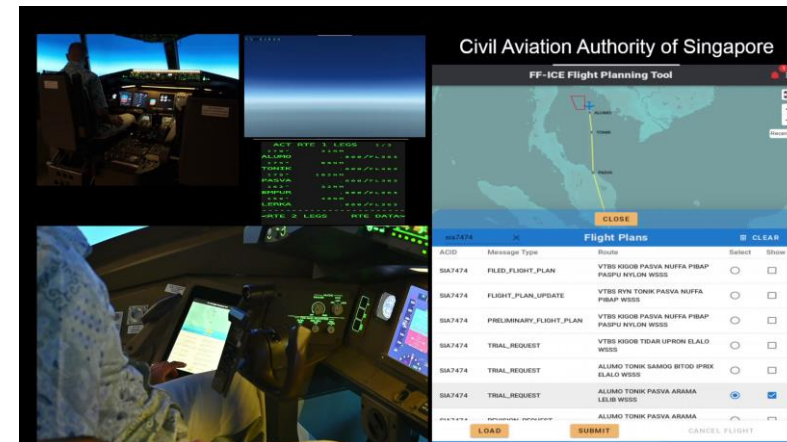
Trials Conducted

- Bilateral FF-ICE/R1 message exchanges with AEROTHAI
- FF-ICE/R1 message exchanges under the Multi-Regional TBO lab demonstration led by FAA



Multi-Regional TBO Lab Demonstration

- Scenarios designed to identify, mature, and demonstrate key TBO capabilities with international and industry partners
- FF-ICE/R1 services was one of the key technical capabilities developed for the MR TBO demonstration
- Participating partners linked up their prototypes to perform the message exchanges



FF-ICE/R1 Implementation Plans

- 2020 – 2022 (in partnership with MITRE Asia Pacific Singapore)
 - Requirements gathering through technical trials
 - Develop system behaviour models
- 2022 to date
 - In discussion with vendor on FF-ICE operational and system requirements
- Early 2026
 - Target operationalising FF-ICE/R1 filing service and flight data request service
 - Phased approach to gain experience before implementing the rest of R1 services

Thank You