Taking TBO Global:
SDM/EUROCONTROL & FAA Collaboration On FF-ICE Implementation

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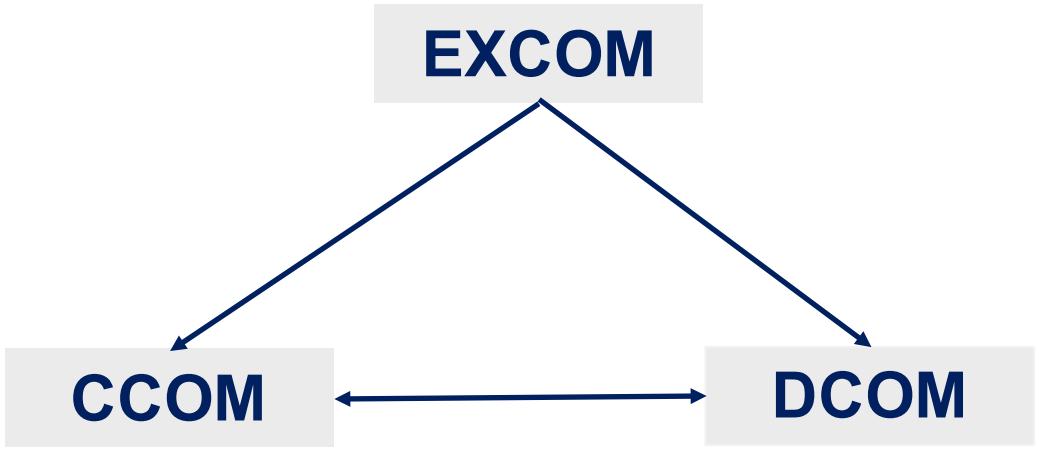
Introduction- Why are US & EU coordinating this?



- ✓**Support** global **harmonization** between the **FAA's** and **EU's** implementation of ICAO concepts / technologies
- ✓**Assist** with the **coordination** of **deployment**
- ✓**Planning** and **implementation** activities.
- ✓ Promote **harmonization** and **interoperability**

MoC

SWIM

Data Link

FF-ICE

FF-ICE Enabling TBO – it is about trajectories

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Preliminary Flight Plan Filing

Flight Plan Filing

eASP

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

Desired Trajectory | **Agreed Trajectory** | **Re-evaluation of Agreed Trajectories as Constraints Emerge**

Initial Negotiation with eASP(s)) Resulting in an Agreed Trajectory

Post-Departure Negotiation & Flight Re-Planning

Pre-Departure Flight Planning & Filing

Predeparture → **Execution** → **Post Flight**

FF-ICE R1 → **FF-ICE R2**

System Wide Information Management (SWIM)

FF-ICE mandate in Europe

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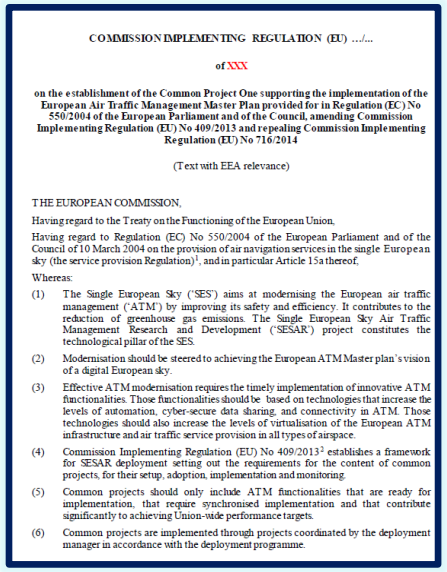
COMMON PROJECT ONE REG. (EU) N.116/2021



COMMISSION IMPLEMENTING REGULATION (EU) …/...

of XXX

on the establishment of the Common Project One supporting the implementation of the European Air Traffic Management Master Plan provided for in Regulation (EC) No 550/2004 of the European Parliament and of the Council, amending Commission Implementing Regulation (EU) No 409/2013 and repealing Commission Implementing Regulation (EU) No 716/2014

(Text with EEA relevance)

THE EUROPEAN COMMISSION,

Having regard to the Treaty on the Functioning of the European Union,

Having regard to Regulation (EC) No 550/2004 of the European Parliament and of the Council of 10 March 2004 on the provision of air navigation services in the single European sky (the service provision Regulation)[1], and in particular Article 15a thereof,

Whereas:

(1) The Single European Sky ('SES') aims at modernising the European air traffic management ('ATM') by improving its safety and efficiency. It contributes to the reduction of greenhouse gas emissions. The Single European Sky Air Traffic Management Research and Development ('SESAR') project constitutes the technological pillar of the SES.

(2) Modernisation should be steered to achieving the European ATM Master plan's vision of a digital European sky.

(3) Effective ATM modernisation requires the timely implementation of innovative ATM functionalities. Those functionalities should be based on technologies that increase the levels of automation, cyber-secure data sharing, and connectivity in ATM. Those technologies should also increase the levels of virtualisation of the European ATM infrastructure and air traffic service provision in all types of airspace.

(4) Commission Implementing Regulation (EU) No 409/2013[2] establishes a framework for SESAR deployment setting out the requirements for the content of common projects, for their setup, adoption, implementation and monitoring.

(5) Common projects should only include ATM functionalities that are ready for implementation, that require synchronised implementation and that contribute significantly to achieving Union-wide performance targets.

(6) Common projects are implemented through projects coordinated by the deployment manager in accordance with the deployment programme.

SESAR DEPLOYMENT PROGRAMME

Geographical Scope

All **IFR GAT** AUs **operating** in the **EATMN Airspace** are **mandated** by the **CP1** regulation

Ground mandate

"ANSPs must **upgrade** their **ground systems** to process and receive the eFPL, but also to make **operational use** of it.

EATMN in CP1 = EU+ Switzerland & Norway

European mandate with Global impact

Why FF-ICE? - Benefits

Airspace Users

- Fewer rejected flight plans
- Better trajectories
- Fly closer to optimal desired trajectory
- More efficient flow planning
- Improved planning services

✓ ***Improved predictability***
✓ ***Improved efficiency***
✓ ***Flexibility***
✓ ***Cost efficiency***

Ground

- More efficient surface movements
- More informed decision making
- Improved predictability for sector-sector and ANSP-ANSP coordination
- Increased data accuracy
- Improved Flow Management

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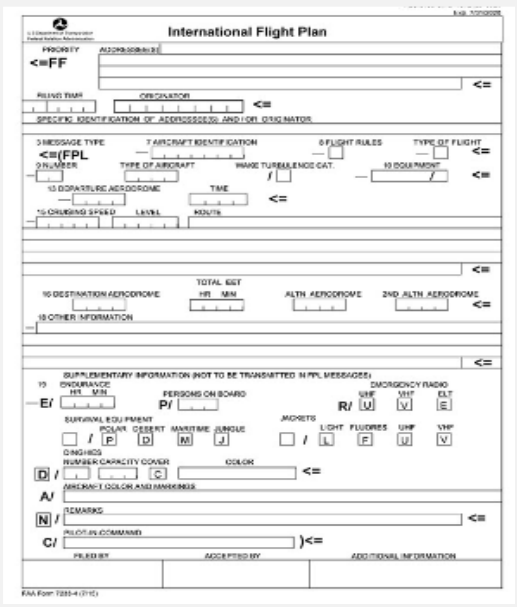
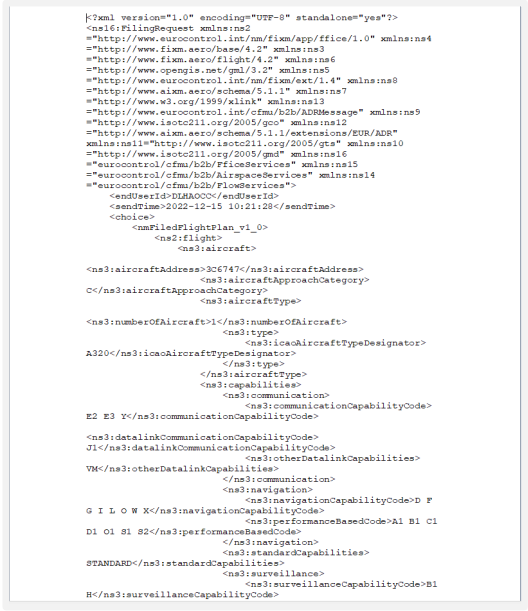
Additional information driving TBO through the eFPL

FPL2012


International Flight Plan

eFPL



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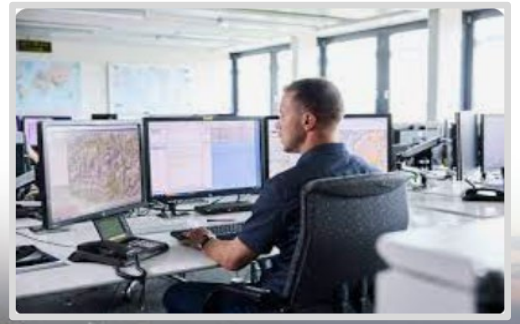
- *Limited information*
- *51 FPL2012 information elements*
- *Manual process*
- *Anticipated sunset date 2032/3034*

- *Richer and digital information*
- *30 New eFPL information elements*
- *4DT for improved Flow Management*

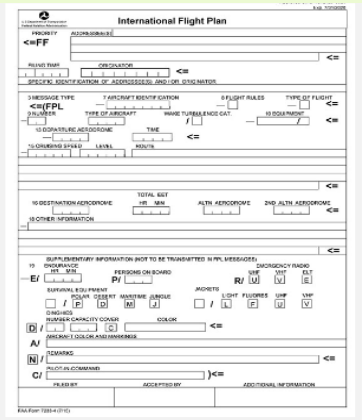
The change - towards one flight plan shared by all!

Computer flight plan service Providers (CFSP)

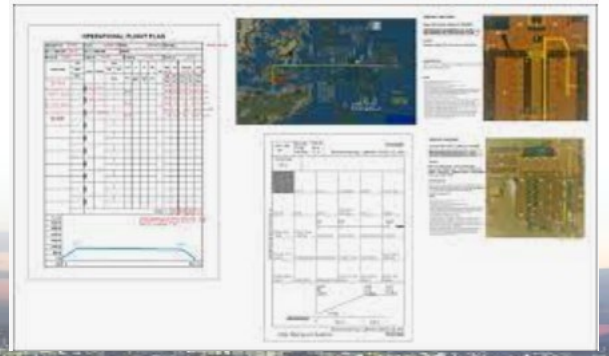
ATS Reporting Office (ARO)



ATC Flight Plan



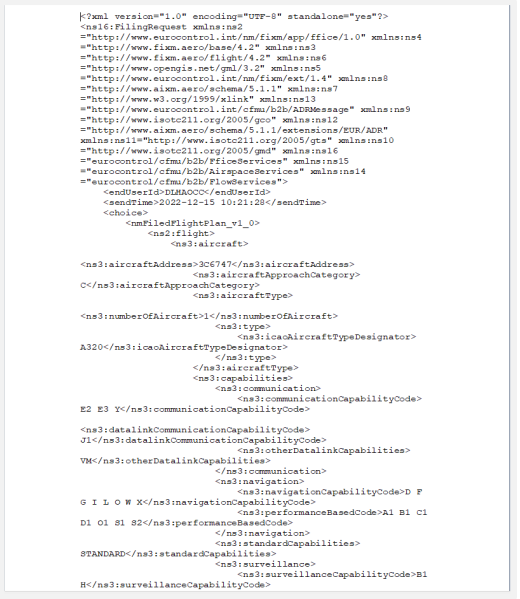
Operational Flight Plan



Used by ATC

Used by Pilot

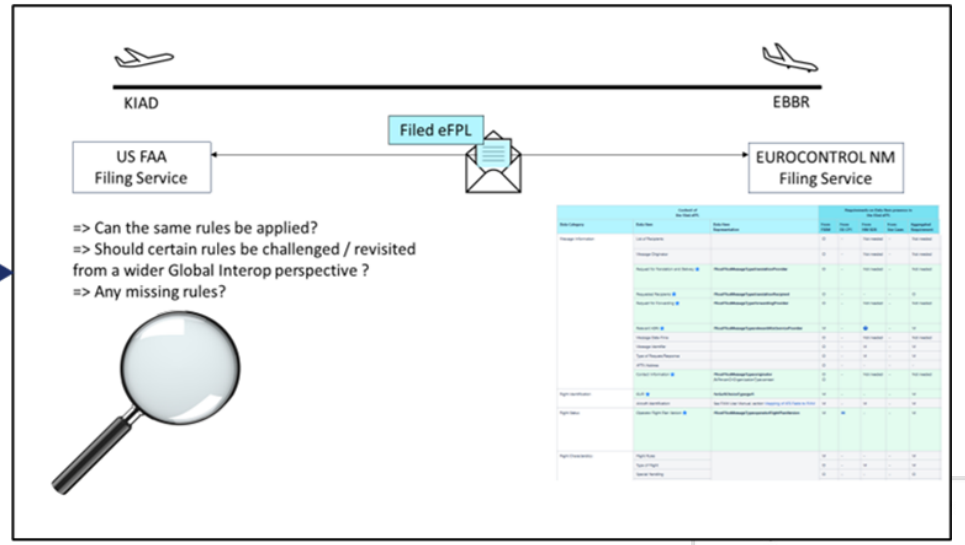
eFPL



Will ensure that Ground and Air have same information

Collaboration & Stakeholder Engagement

Continued information sharing with other forums, to share progress and receive feedback from AUs



(draft) DCOM FF-ICE Workplan

Planned Activities and Objectives

[…]

Understand differences between implementations in the United States and Europe.

Facilitate harmonization and interoperability between the United States and Europe.

Establish a global outreach strategy to engage with other ANSPs and AUs on FF-ICE R1 implementation

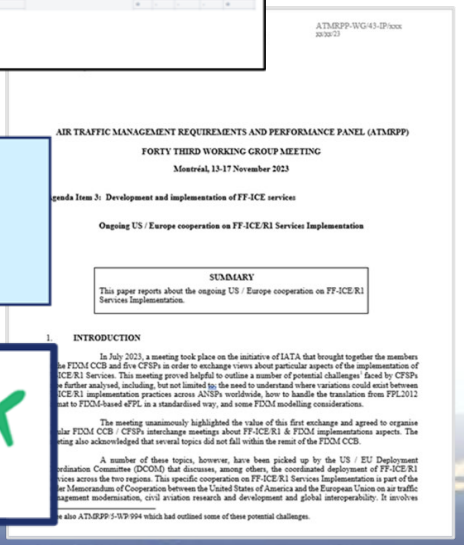
Deliverables

[…]

Documentation recommending best practices for FF-ICE R1 implementation

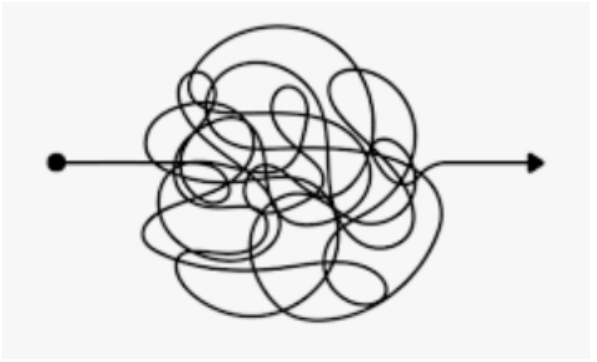
FPFDE TF

SWIFT

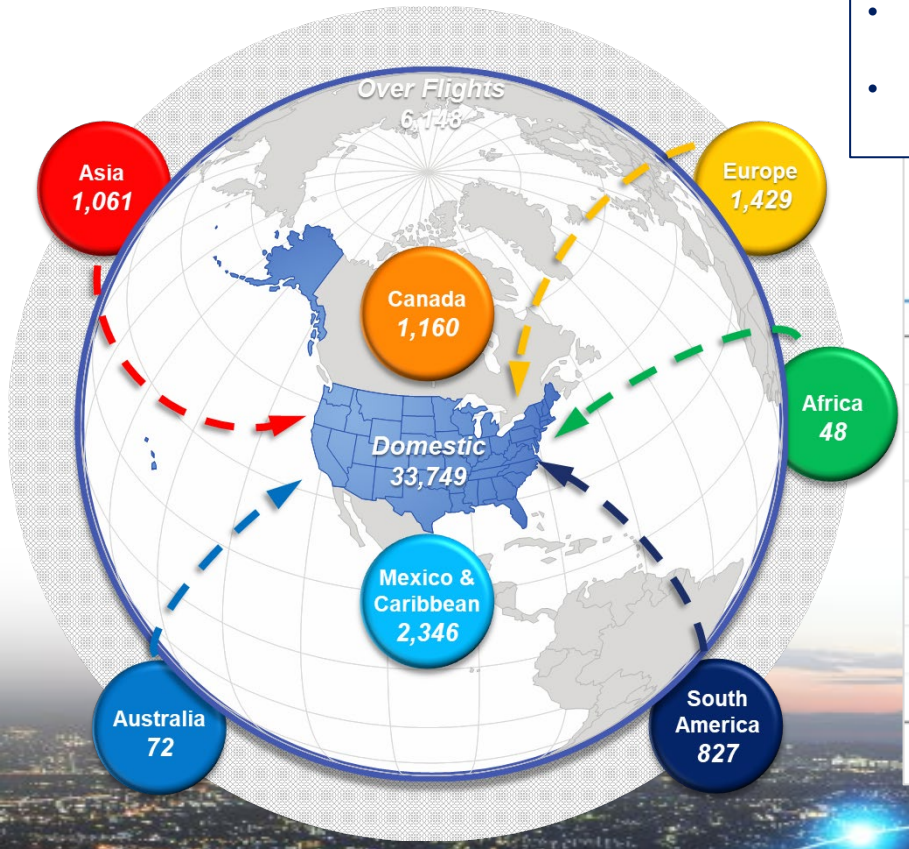

AIR TRAFFIC MANAGEMENT REQUIREMENTS AND PERFORMANCE PANEL (ATMRPP)
FORTY THIRD WORKING GROUP MEETING
Montréal, 13-17 November 2023
Ongoing US / Europe cooperation on FF-ICE/R1 Services Implementation
SUMMARY
INTRODUCTION

The need for an aligned approach globally to FF-ICE

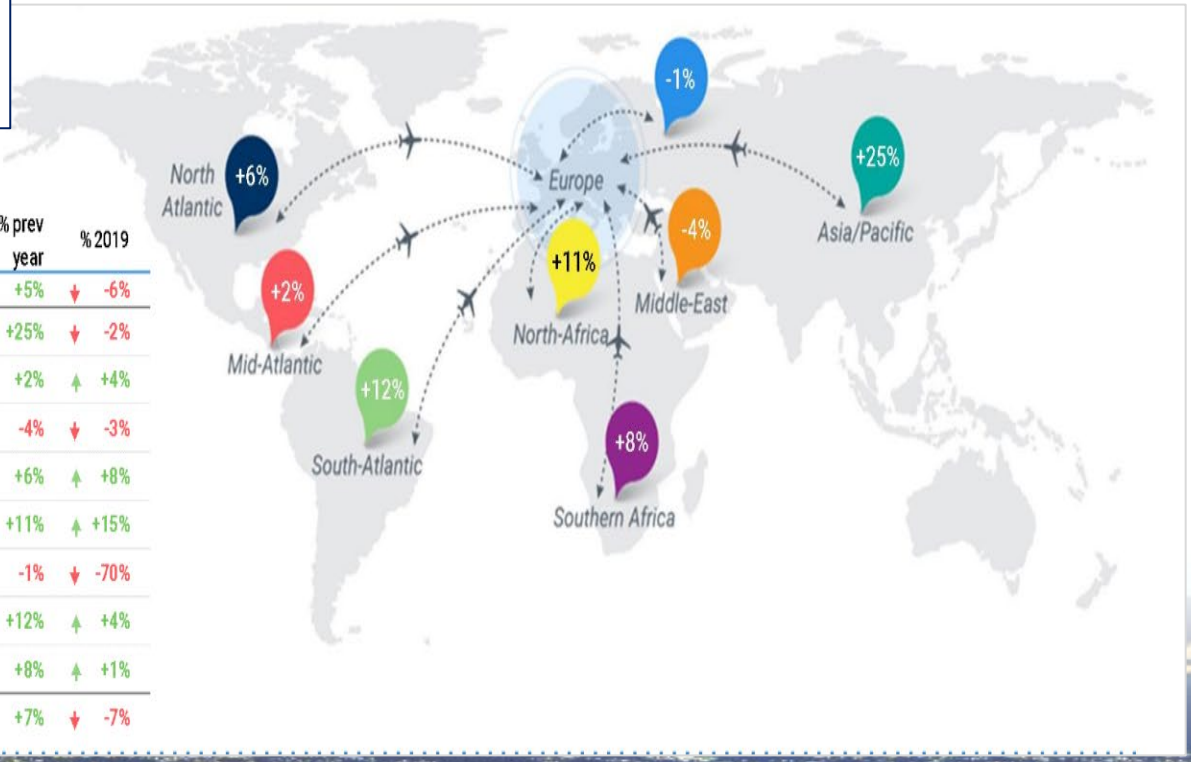
- Flight plans received in Europe filed from more than 50 different countries
- Different processes from country to country and AU to AU
- More than 900 operationally active Airspace users worldwide



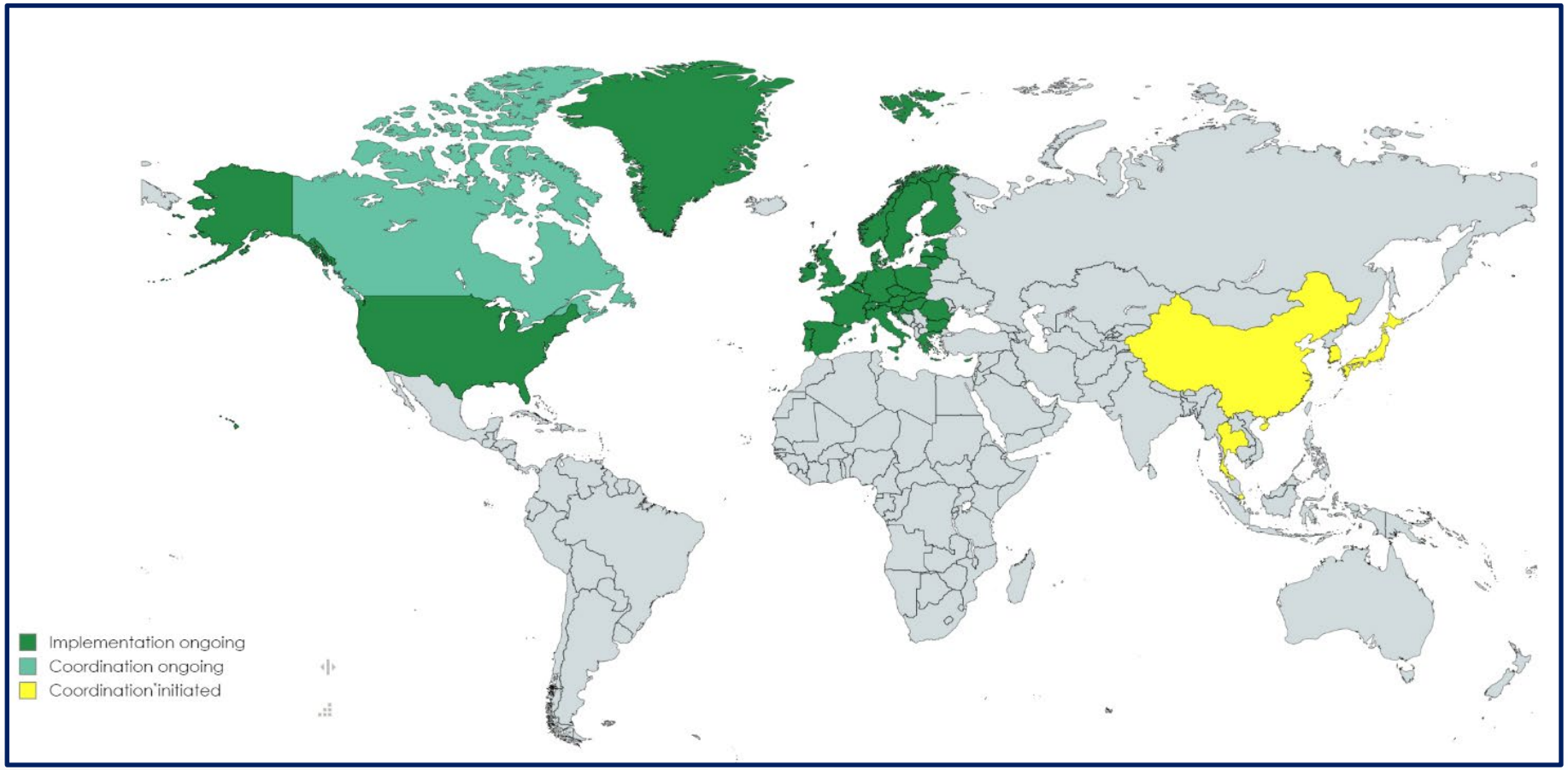
Monthly Scheduled carrier traffic:
- ~190 Commercial Carriers filing in the US
- ~385 Commercial Carriers filing in Europe



Region	Average daily flights	% prev week	% prev year	% 2019
Intra-Europe	18,877	+5%	+5%	-6%
Europe ↔ Asia/Pacific	735	-3%	+25%	-2%
Europe ↔ Mid-Atlantic	199	-1%	+2%	+4%
Europe ↔ Middle-East	1,228	+1%	-4%	-3%
Europe ↔ North Atlantic	963	+4%	+6%	+8%
Europe ↔ North-Africa	1,034	+8%	+11%	+15%
Europe ↔ Other Europe	219	-0%	-1%	-70%
Europe ↔ South-Atlantic	181	-1%	+12%	+4%
Europe ↔ Southern Africa	318	+1%	+8%	+1%
Non Intra-Europe	4,878	+2%	+7%	-7%



General FF-ICE Global Harmonization Needs



- **Not** only a flight plan **format change**
- **Various** exchange **mechanisms** in place **now** (AFTN, AMHS, SWIM)
- **FF-ICE** introduces **enhanced** information
- **Alignment** between **US** and **Europe** not enough
- **Benefits** only **achieved** if implemented **globally**
- **How** do we push forward the rest of the **global FF-ICE implementation?**

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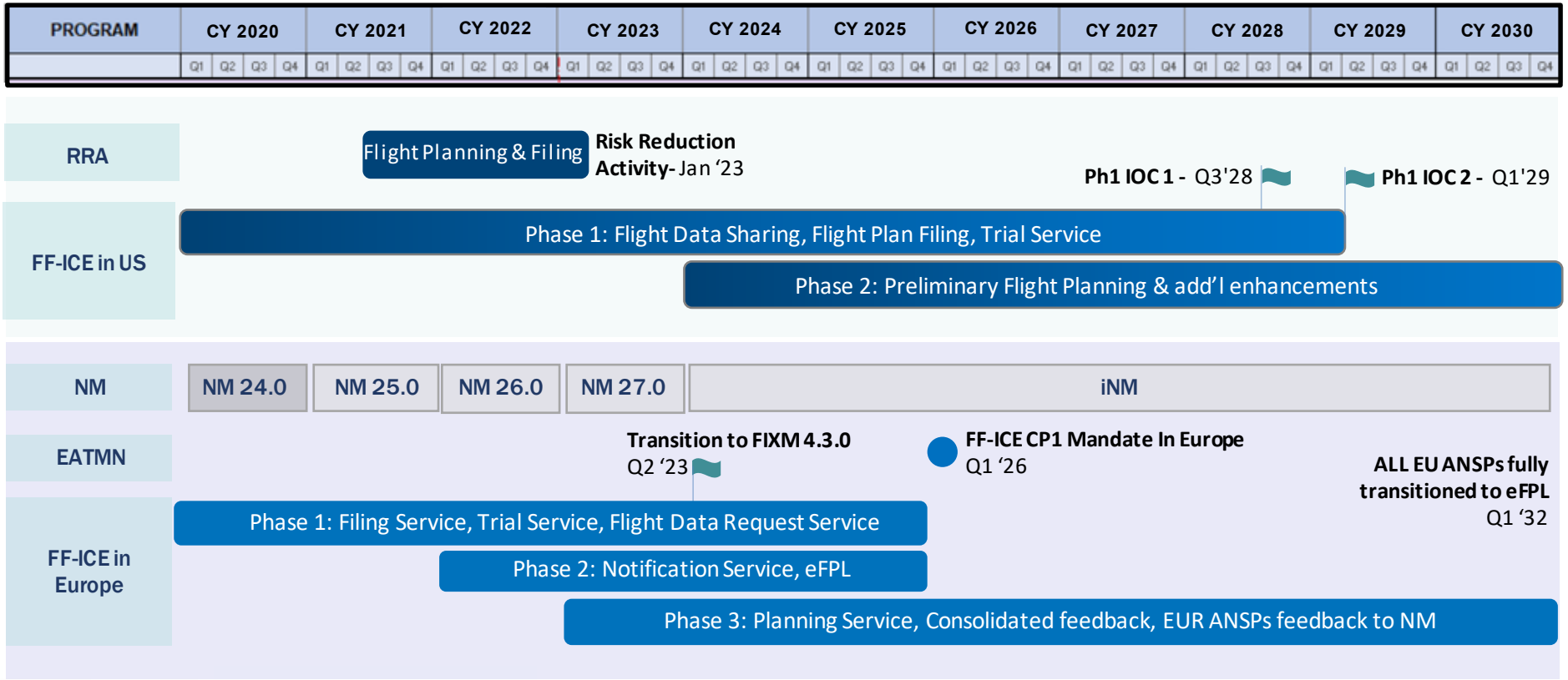
Joint Timeline and Common Approach to FF-ICE



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Summary

- ✓Pre-departure trajectory negotiations via a SWIM environment, using FF-ICE/R1 and supporting data sharing services drives us closer to the ICAO TBO vision where **the flown flight path is as close as possible to the user-preferred flight path.** Resolving demand/capacity imbalances earlier and more efficiently.
- ✓Goal for Harmonization of eFPLs, to have a single format of eFPL that AUs can send to any eASP with respective extensions (extensions can be ignored to avoid FP rejections)
- ✓Globalisation in terms of ATC system collaborations underlines the need for global coordination both on filing and distribution point of view of FF-ICE Flight plans.

Richer flight Information

Improved Planning

Improved decision-Making

Improved flow management

Towards trajectory exchanges