



Schweizerische Eidgenossenschaft  
Confédération suisse  
Confederazione Svizzera  
Confederaziun svizra

Federal Department of the Environment, Transport,  
Energy and Communications DETEC  
**Federal Office of Civil Aviation FOCA**

# **ICAO EURNAT Environment Task Force Meeting**

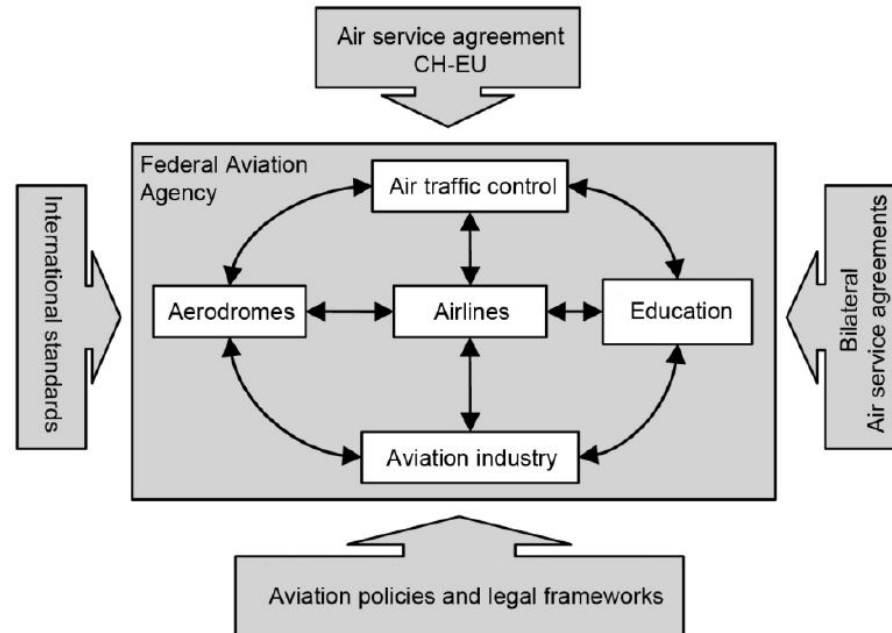
Initiatives to address CO<sub>2</sub> emissions from international aviation

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21st March 2023



# Swiss Aviation Policy



- Framework for the development of civil aviation in Switzerland.
- Taking into account the 3 dimensions of sustainability.
- Ensure that Switzerland has optimal connections to all major European and global centers.
- Sectors considered as a whole system and are strongly linked.
- The state has the role of the regulator.

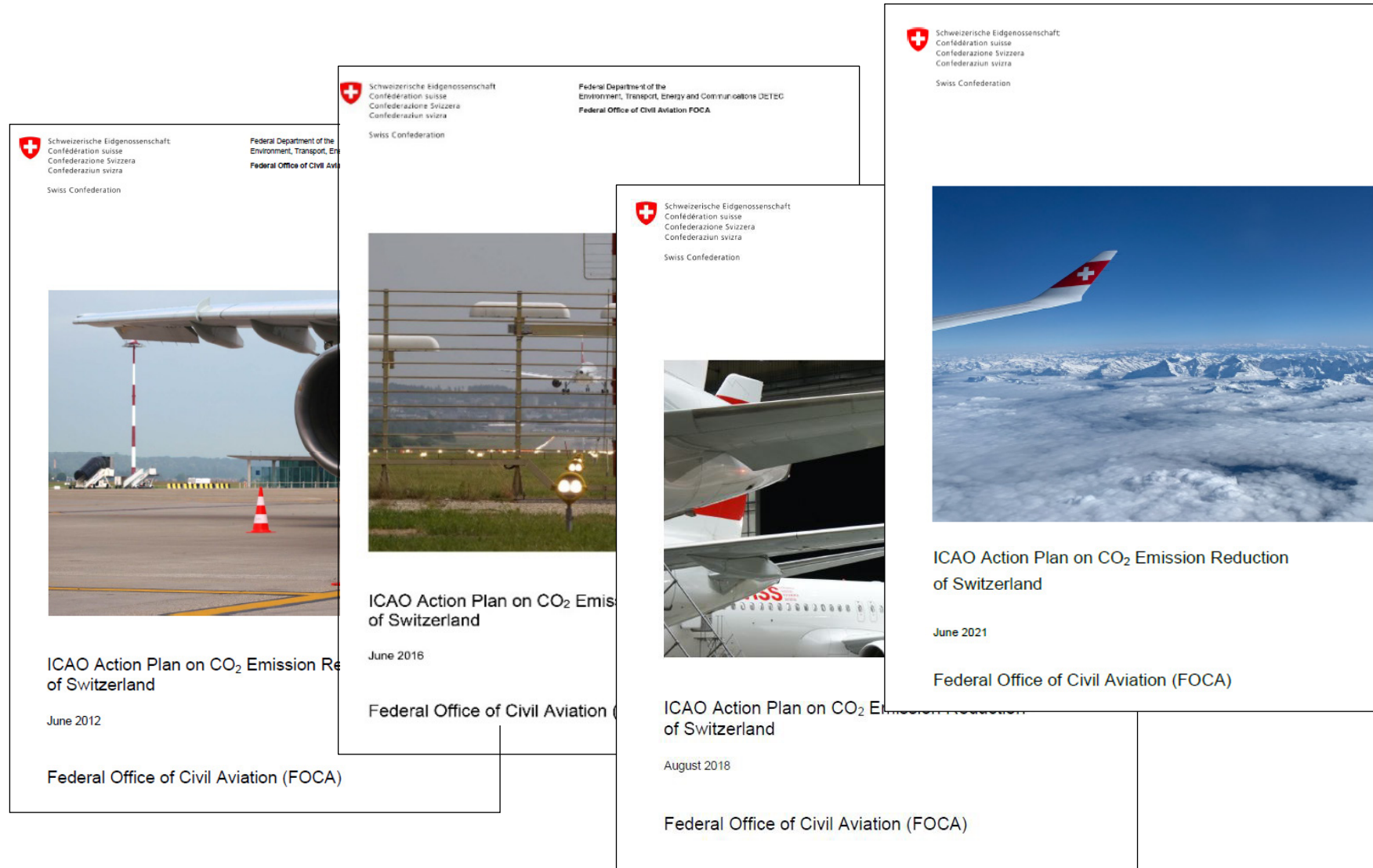


# European Civil Aviation Conference (ECAC)





# ICAO State Action Plan of Switzerland



Fifth Edition  
June 2024




# ICAO State Action Plan of Switzerland

## National measures taken by Swiss Stakeholders

- FOCA organised in February 2012 an event for aerodromes, air traffic control and aviation industry stakeholders as well as other public administrations.
- The aim of this event was to inform all relevant parties in the Swiss aviation system about the ICAO State Action Plan and to evaluate possible measures to reduce CO<sub>2</sub> emissions undertaken by these stakeholders.
- Since then FOCA contacted the relevant stakeholder directly for each update, as the State Action Plan was already known as an important instrument to show the effort Swiss stakeholder are undertaking.



# ICAO State Action Plan of Switzerland Template

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Confederaziun svizra  
Swiss Confederation

Federal Department of the  
Environment, Transport, Energy and Communications DETEC  
Federal Office of Civil Aviation FOCA  
Division Aviation Policy and Strategy

Action Plan on Aviation and Climate Change: The Swiss Action Plan  
Description of Actions

Name of Stakeholder

Title of Action

Description of Action

Estimated reduction of CO<sub>2</sub> in tonnes due to action (if possible per year)

Duration of Action (beginning and ending date)

Kind of Action (according to categories of basket of measures, see document basket of measures)

Contact

Further Information/documents

- To facilitate the feedback in a harmonised manner, FOCA developed an simple template for the measures taken by Stakeholders.
- Estimated reduction of CO<sub>2</sub> due to action (if possible per year).



# Operational Improvements: xStream (1/3)



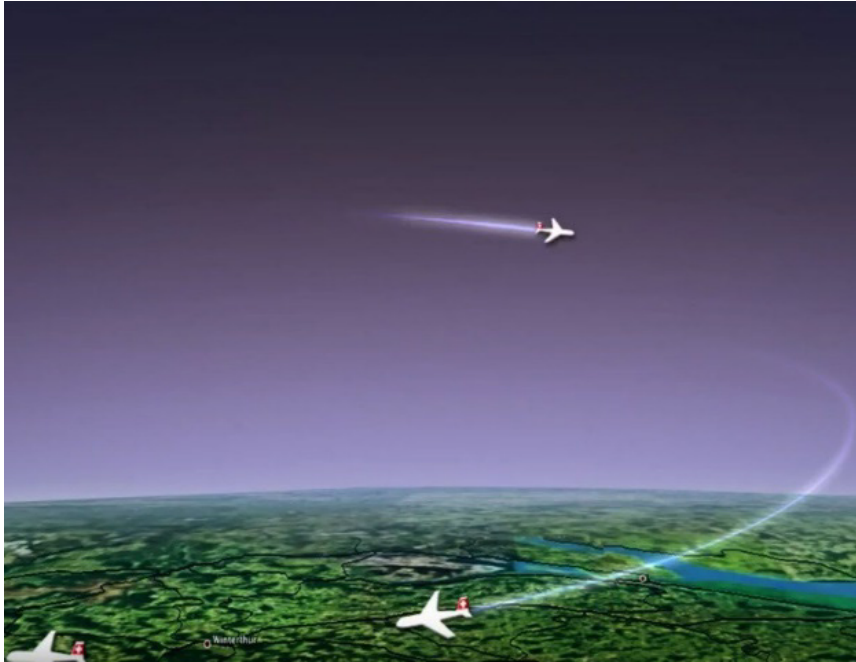
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- SWISS Int. Air Lines, Skyguide and Zurich Airport defined an alternative approach system.
- First started under the name “Greener Wave”, and continued as “iStream”, the Very Large Scale Demonstration Project xStream.
- Zurich Airport has a night curfew (2330-0600 LT).
- The long-haul flights on approach to Zurich have historically done so on a ‘first come, first served’ basis.
- The result was often a backlog of flights in the early morning sky over Zurich – which entails unnecessary noise and CO<sub>2</sub> emissions.





# Operational Improvements: xStream (2/3)



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- New Tactical Time of Arrival (TTA) between 6.10 and 6.30 am in the form of a three-minute arrival time window.
- Allows to modify the flight accordingly.
- Thanks to the new processes, arrival routes during the specific wave are reduced by 30 percent, holdings minimized by 95 percent. xStream reduces approximately 1'800 t of CO<sub>2</sub> per year for the SWISS arrivals in the first wave.





# Operational Improvements: xStream (3/3)

- xStream is a SESAR project (Cross Border SESAR Trials for Enhanced Arrival Management) and is considered as a regional measure.
- Nonetheless Switzerland chose to highlight the importance of the project for Swiss Stakeholders and showed this measure in the national part of the State Action Plan.



# Enhanced Ground Support Equipment (GSE) management

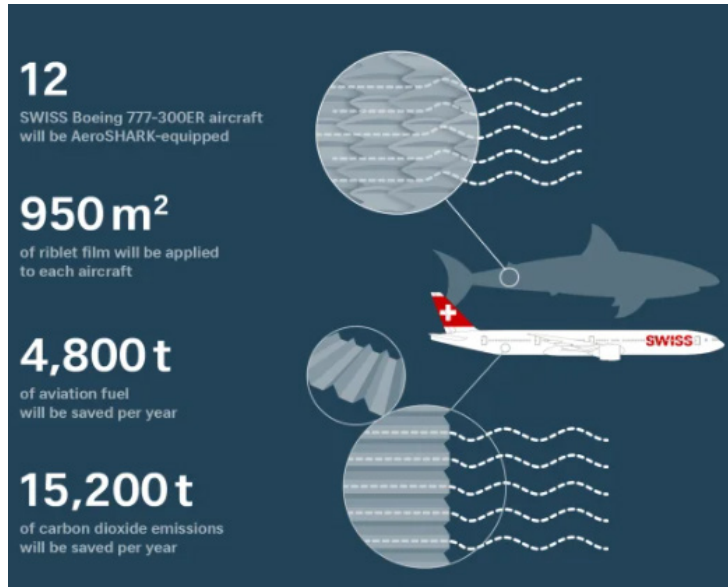


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- Both national airports Zurich and Geneva have aircraft positions with pre-conditioned air (PCA) and electricity (400Hz). The use of these facilities has been made mandatory at equipped positions. The use of aircrafts APU is forbidden.
- The airport of Zurich estimates a reduction of 42'000 t CO<sub>2</sub> per year from their aircraft stands.
- The airport of Geneva estimates a reduction of 31'800 t CO<sub>2</sub> per year.
- Gradually, more positions will be equipped.



# Aircraft Technology: AeroSHARK



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- SWISS applied total of 950 square metres of AeroSHARK riblet film, which was developed by Lufthansa Technik and BASF. The film has riblets just 50 micrometres high, and reduces frictional resistance in flight.
- Applying to the fuselage and engine nacelle surfaces of a Boeing 777.
- Fuel savings of some 1.1 per cent can be achieved.
- SWISS will successively install the new AeroSHARK riblet film on their Boeing 777 fleet from mid-2022 onwards.



# Thank you!



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