



ICAO

ENVIRONMENT

ICAO Regional Seminar on CORSIA

Session #2:
CORSIA MRV System:
Monitoring of CO₂ emissions

The ICAO-Germany Small Scale Implementation Project

ICAO Secretariat

CORSIA



Introduction

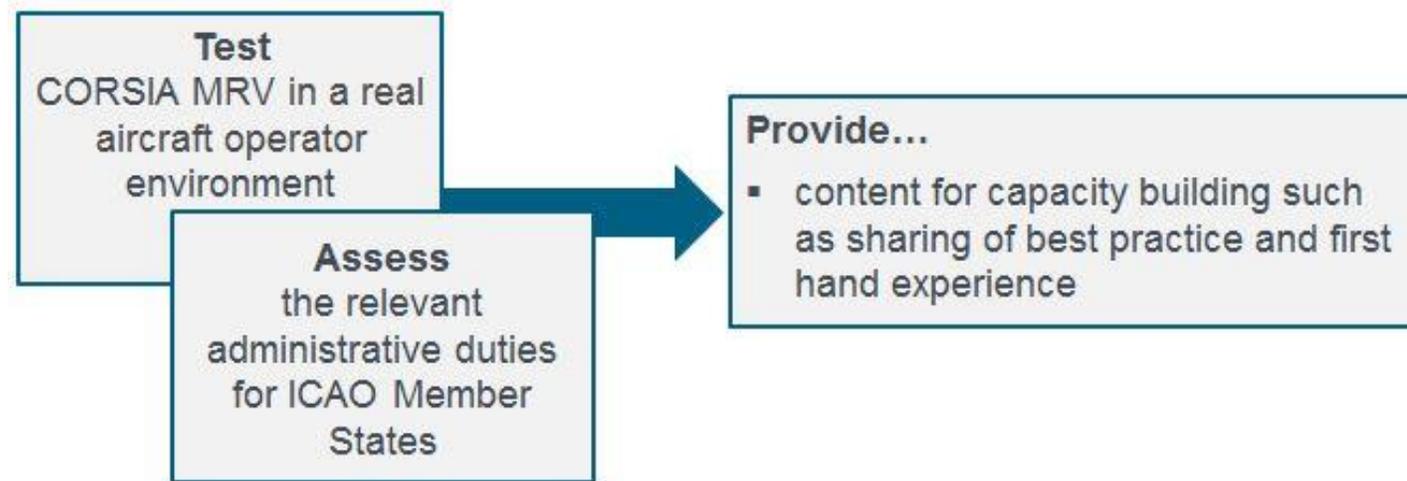
- The Small Scale Implementation (SSI) project is part of the wider ICAO capacity building activities to support the implementation of CORSIA.
- Important to test the Monitoring, Reporting and Verification (MRV) part of draft SARPs within a real life environment.
- Project participants test the MRV provisions of draft CORSIA SARPs and identify the best practices and lessons learned from the project.
- Ensure participation of Member States and their airlines from all ICAO regions.

Background

- Germany has offered resources to ICAO to simulate the implementation of CORSIA on a small scale for testing purposes – Small Scale Implementation (SSI) project was announced during A39.
- In August 2017, Germany and ICAO signed a Memorandum of Understanding on the SSI project in order to test the feasibility and practicality of the CORSIA MRV system, in cooperation with collaborating States and their airlines.
- Staffing for this project is provided by the German Environment Agency in cooperation with the Ministry of Transport and Ministry of Environment.

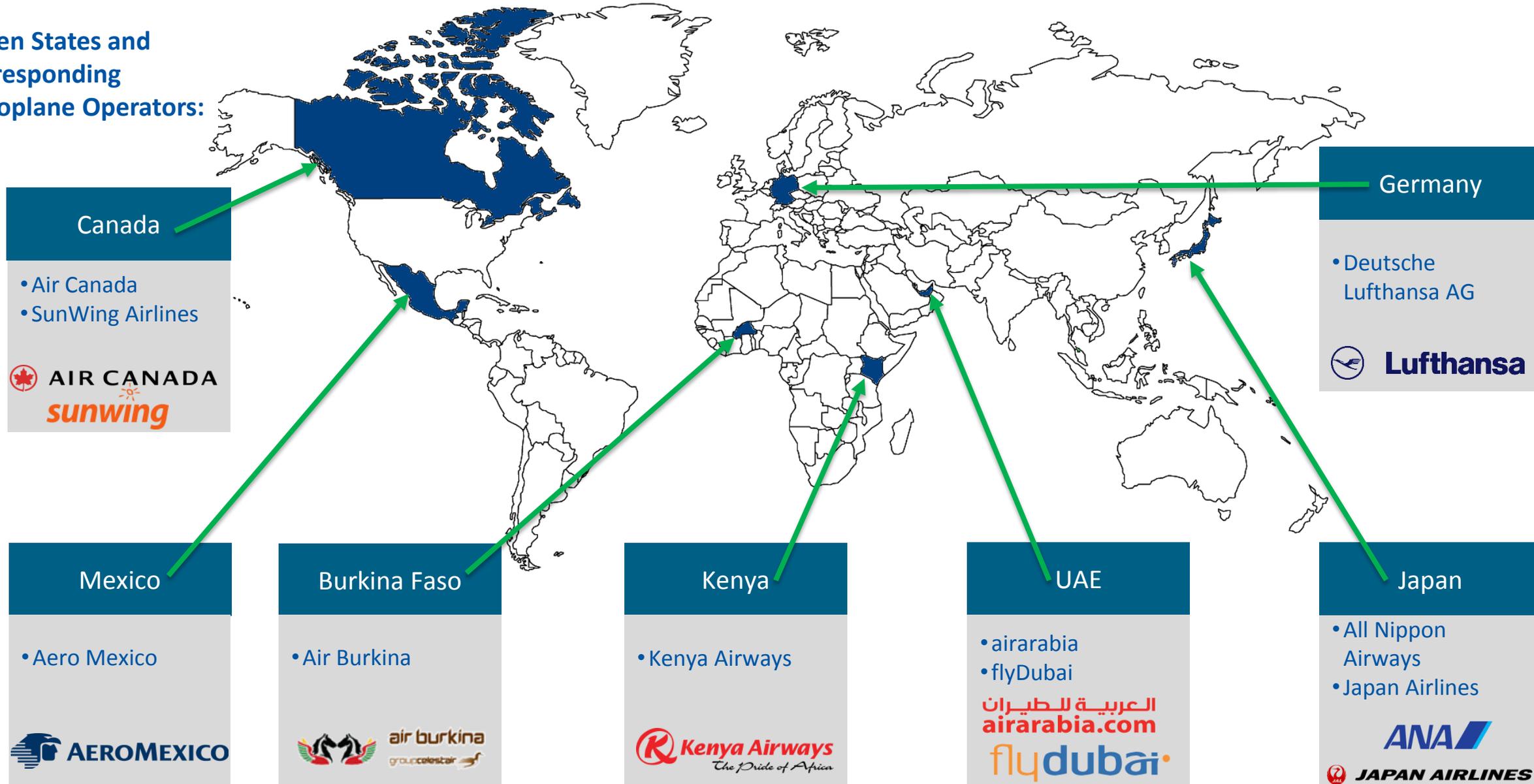
Scope of the project

- **Test** the Monitoring, Reporting and Verification (MRV) processes of CORSIA in a small scale but real life environment for aeroplane operators.
- **Assess** the relevant administrative duties for States, and help prepare for the implementation of CORSIA SARPs.
- **Provide** content for capacity building such as sharing of best practice and first hand experience.

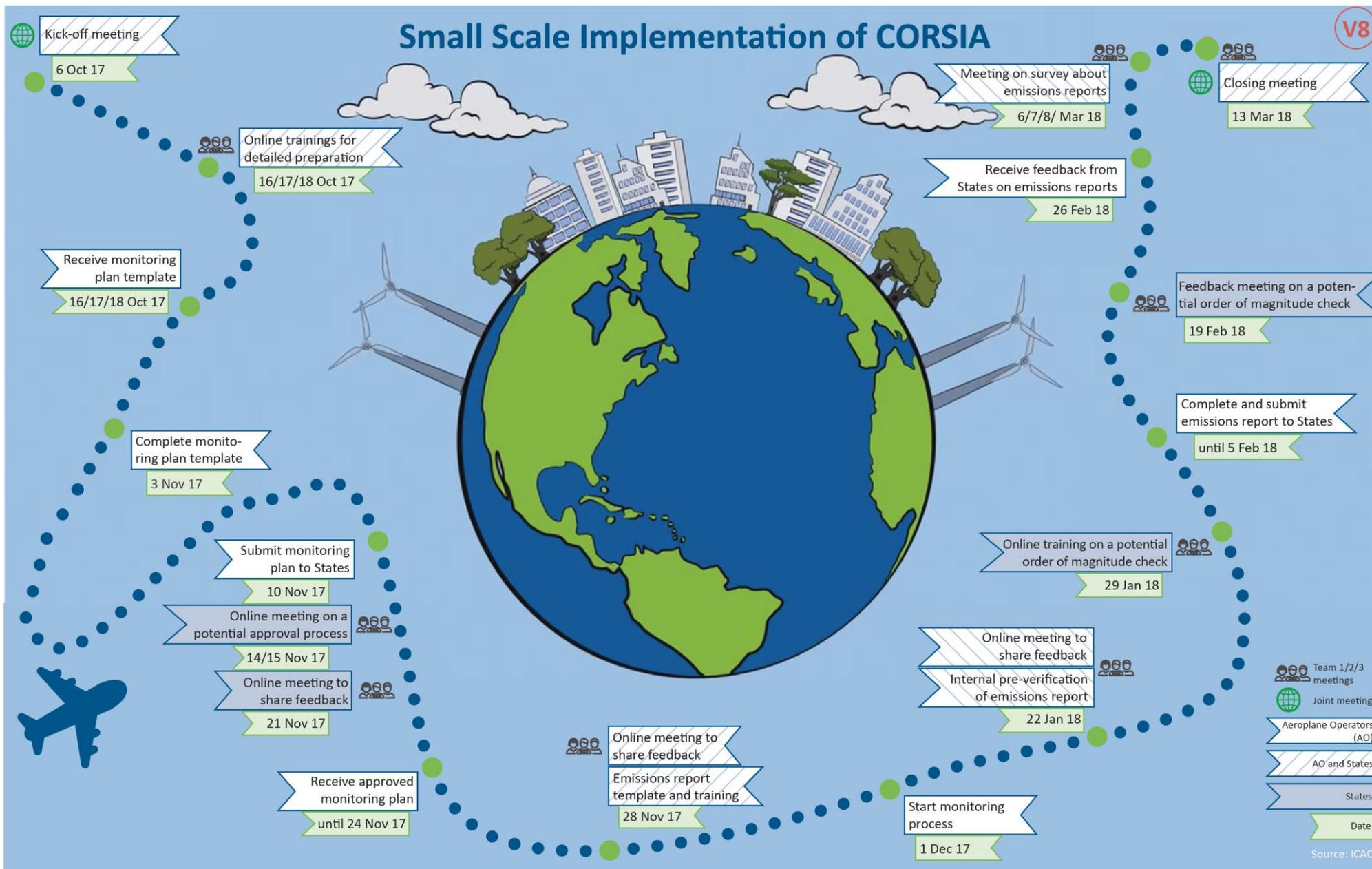


Small Scale Implementation - Project Participants

Seven States and corresponding Aeroplane Operators:



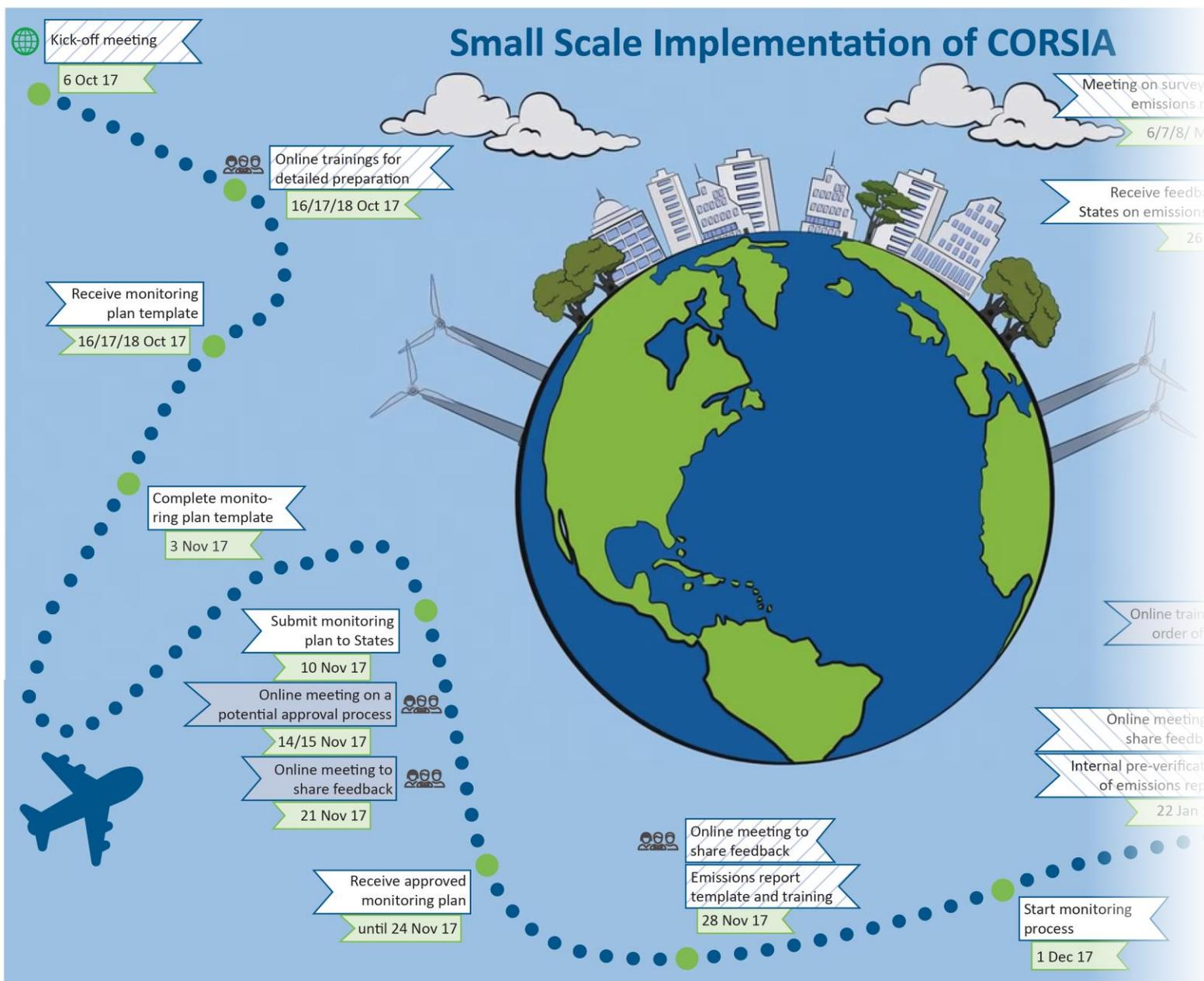
Small Scale Implementation - Project Design



Three different teams, each supported by three facilitators from Germany and ICAO:

- Team 1**
- Japan
- United Arab Emirates
- Team 2**
- Burkina Faso
- Germany
- Kenya
- Team 3**
- Canada
- Mexico

Small Scale Implementation - Project Implementation



Phase 1 (Oct 2017 to Dec 2017):
Emissions Monitoring Plan and actual CO₂ monitoring

6 Oct 2017:
Kick-off meeting

Oct/Nov 2017:
Trainings of States and operators on Emissions Monitoring Plan

10 Nov 2017:
Submission of Emissions Monitoring Plan by operators

24 Nov 2017:
Approval of Emissions Monitoring Plan by States

Dec 2017 (for a one-month period):
Actual CO₂ monitoring by operators

Small Scale Implementation - Project Implementation

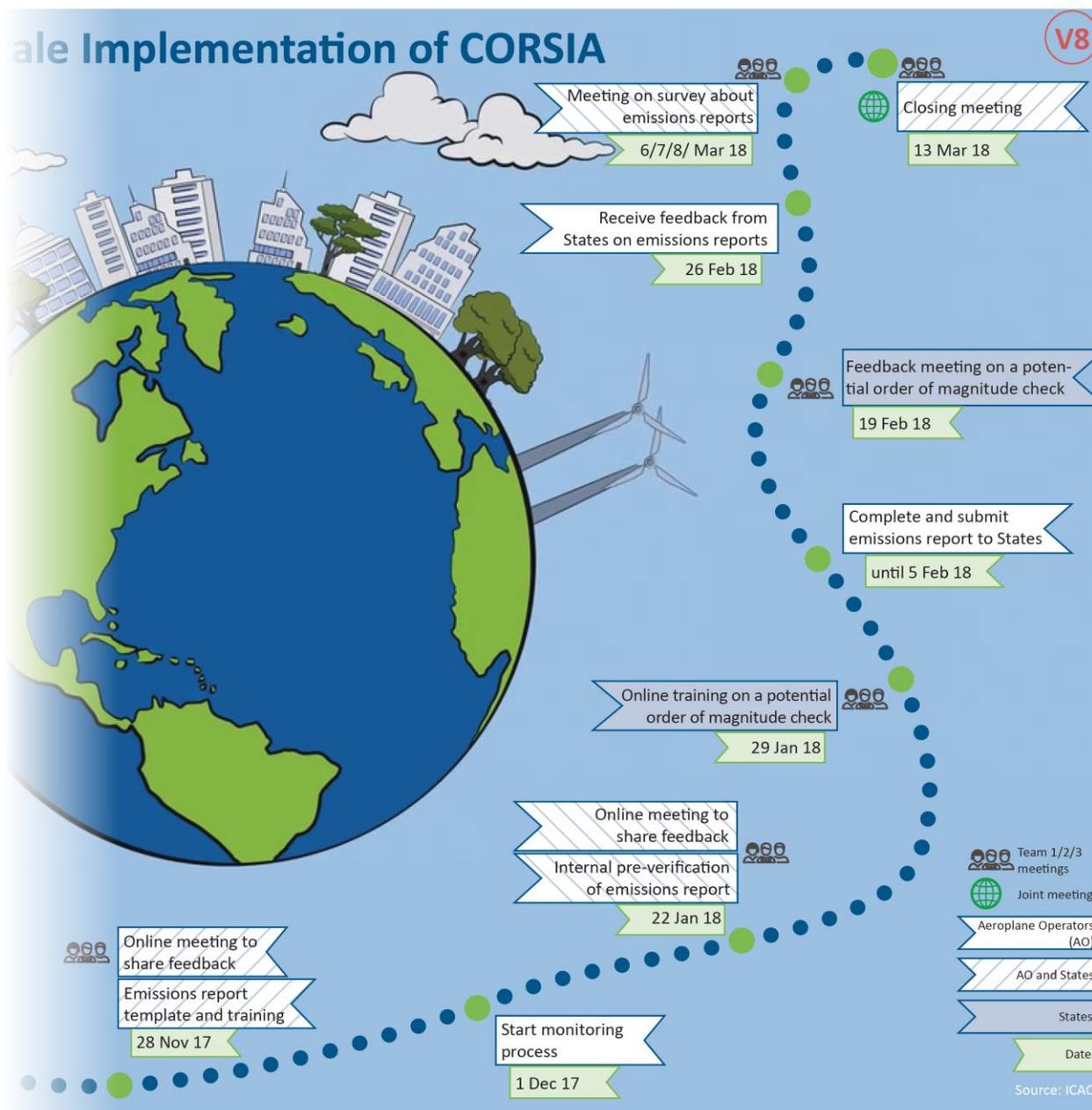
Phase 2 (Dec 2017 to Mar 2018): Emissions Reporting and Verification

Dec 2017 / Jan 2018:
Trainings of States and operators on
emissions reporting and verification

5 Feb 2018:
Submission of Emissions Report by operators

26 Feb 2018:
Verification (Order of Magnitude Check) of
Emissions Report by States

13 Mar 2018:
Closing meeting





Session #2:
CORSIA MRV System:
Monitoring of CO₂ emissions

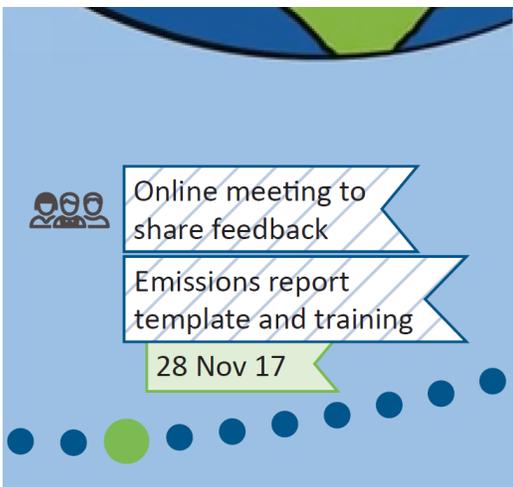
**Experiences from the Small Scale Implementation project
on monitoring of CO₂ emissions**

Part 1: Emissions Monitoring Plan (today)

- Project insights
- Generic feedback
- Specific feedback

Part 2: Emissions Report (tomorrow)

- Project insights
- Generic feedback
- Specific feedback



High Workload for Participants

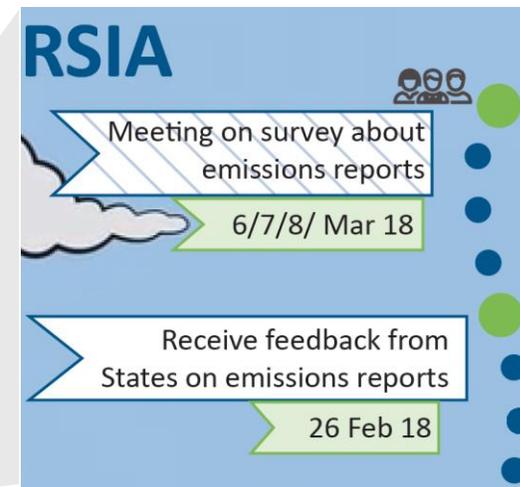
CORSIA main activities significantly condensed

2019-2020 → just 5 months

Small Scale Implementation of CORSIA

- Kick-off meeting: 6 Oct 17
- Online trainings for detailed preparation: 16/17/18 Oct 17
- Receive monitoring plan template: 16/17/18 Oct 17
- Complete monitoring plan template: 3 Nov 17
- Submit monitoring plan to States: 10 Nov 17
- Online meeting on a potential approval process: 14/15 Nov 17
- Online meeting to share feedback: 21 Nov 17
- Receive approved monitoring plan: until 24 Nov 17
- Online meeting to share feedback: 28 Nov 17
- Emissions report template and training: 28 Nov 17
- Start monitoring process: 1 Dec 17
- Online meeting to share feedback: 22 Jan 18
- Online training on a potential order of magnitude check: 29 Jan 18
- Complete and submit emissions report to States: until 5 Feb 18
- Feedback meeting on a potential order of magnitude check: 19 Feb 18
- Receive feedback from States on emissions reports: 26 Feb 18
- Meeting on survey about emissions reports: 6/7/8/ Mar 18
- Closing meeting: 13 Mar 18

APAC Team 1	MID Team 1	WACAF Team 2	ESAF Team 2	EUR/NAT Team 2	NACC Team 3	NACC Team 3
Japan	United Arab Emirates	Burkina Faso	Kenya	Germany	Mexico	Canada



Project Insights

- Welcome of participants
- Awareness for condensed approach (workload normally spread over a longer period of time)
- Reiterate the main objectives of the project
- Minimized training only
- Introduction to the topic at a level which could be expected by a national administrator (e.g. website content)

Phase 1 (Oct 2017 to Dec 2017):
Emissions Monitoring Plan and actual CO₂ monitoring

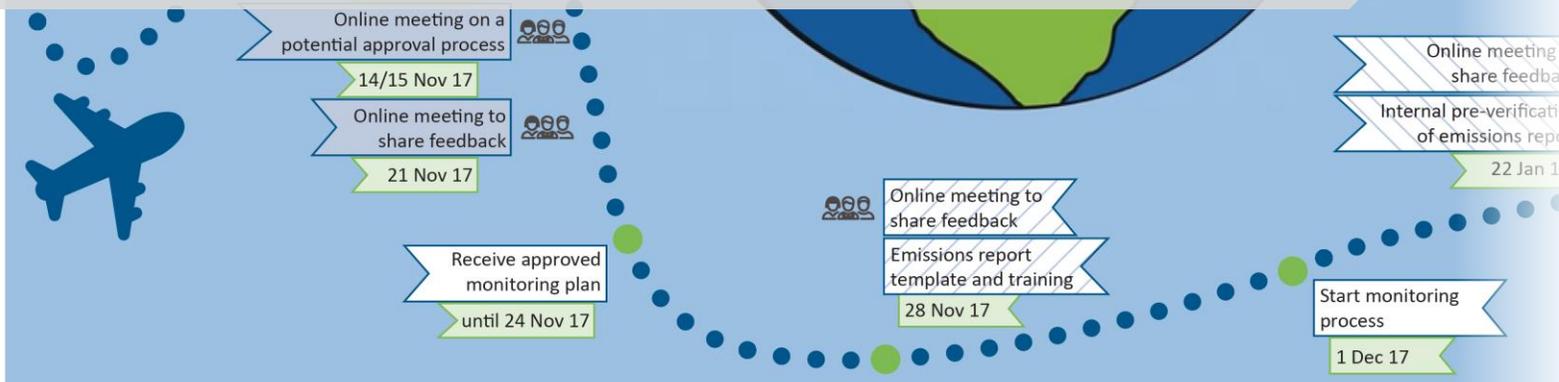
6 Oct 2017:
Kick-off meeting

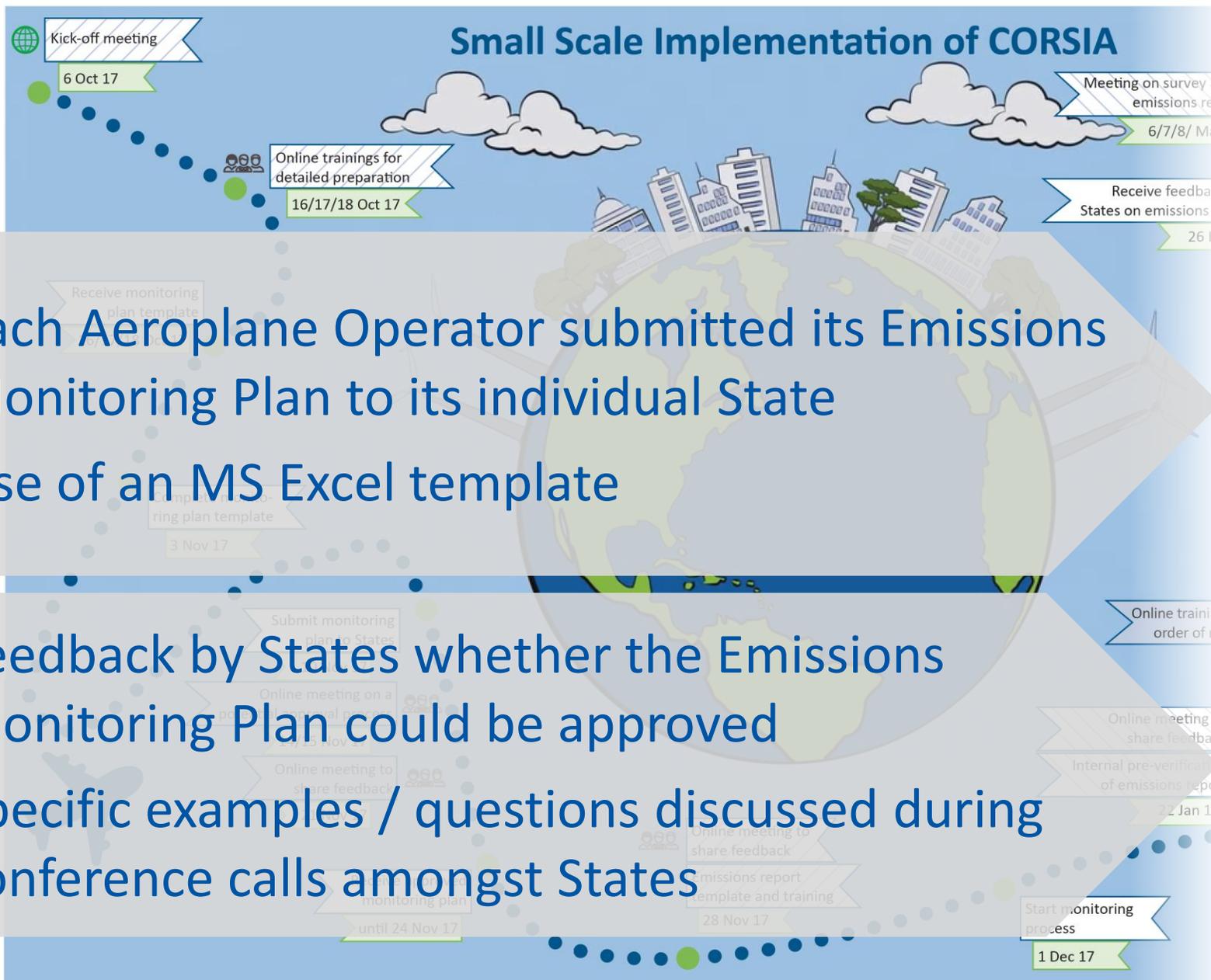
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Phase 1 (Oct 2017 to Dec 2017): Emissions Monitoring Plan and actual CO₂ monitoring

- 6 Oct 2017: Kick-off meeting
- Oct/Nov 2017: Trainings of States and operators on Emissions Monitoring Plan
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- Dec 2017 (for a one-month period): Actual CO₂ monitoring by operators

- Each Aeroplane Operator submitted its Emissions Monitoring Plan to its individual State
- Use of an MS Excel template
- Feedback by States whether the Emissions Monitoring Plan could be approved
- Specific examples / questions discussed during conference calls amongst States

- To simulate a situation close to reality, participants were left with **basic instructions** at the beginning of each project step
- CORSIA documentation had to prove whether it would be **'self-explanatory'** and **'sufficient in content'**
- **Feedback** from participants in a three-stage process (main emphasize)

Individual questions during the task

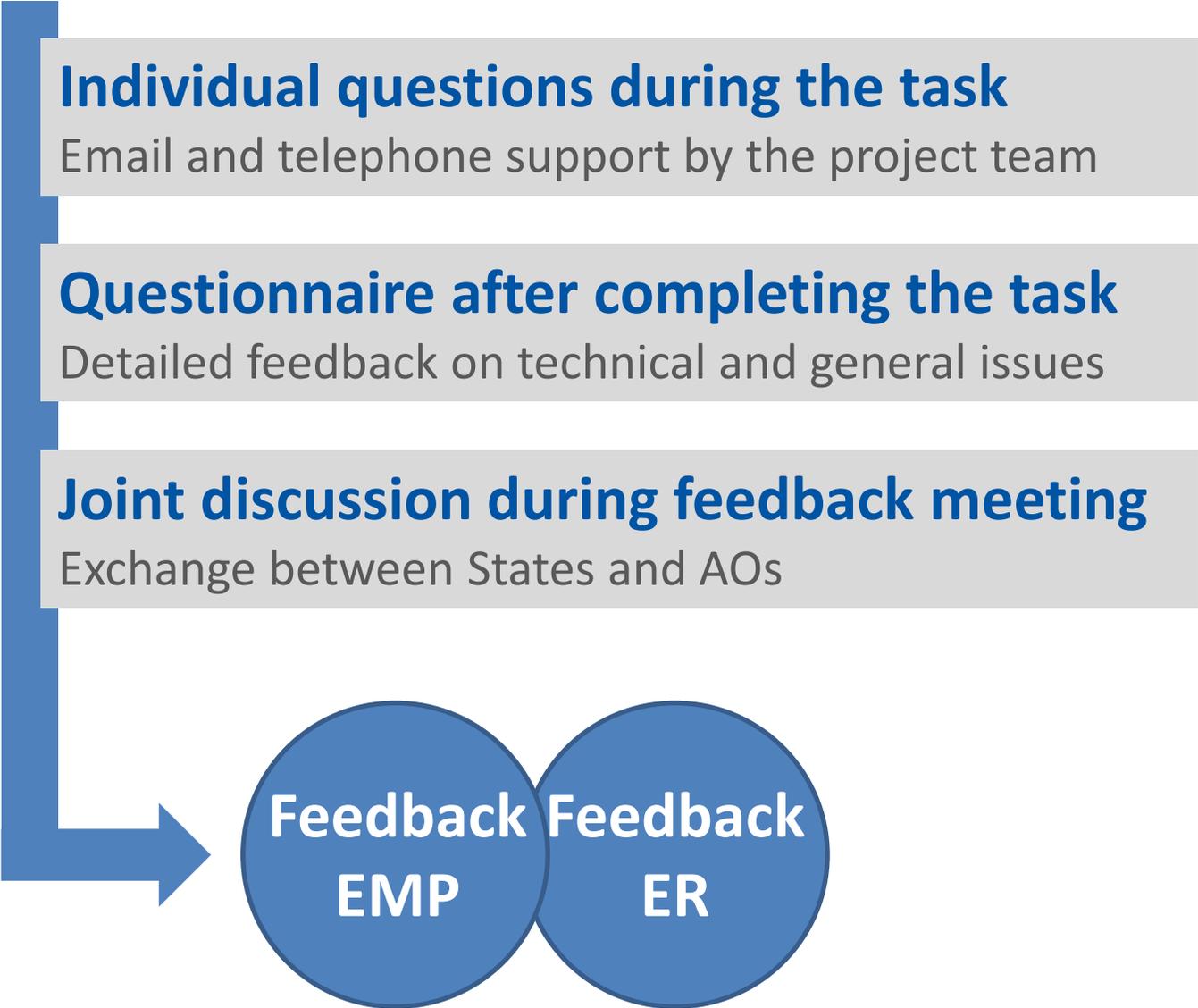
Email and telephone support by the project team

Questionnaire after completing the task

Detailed feedback on technical and general issues

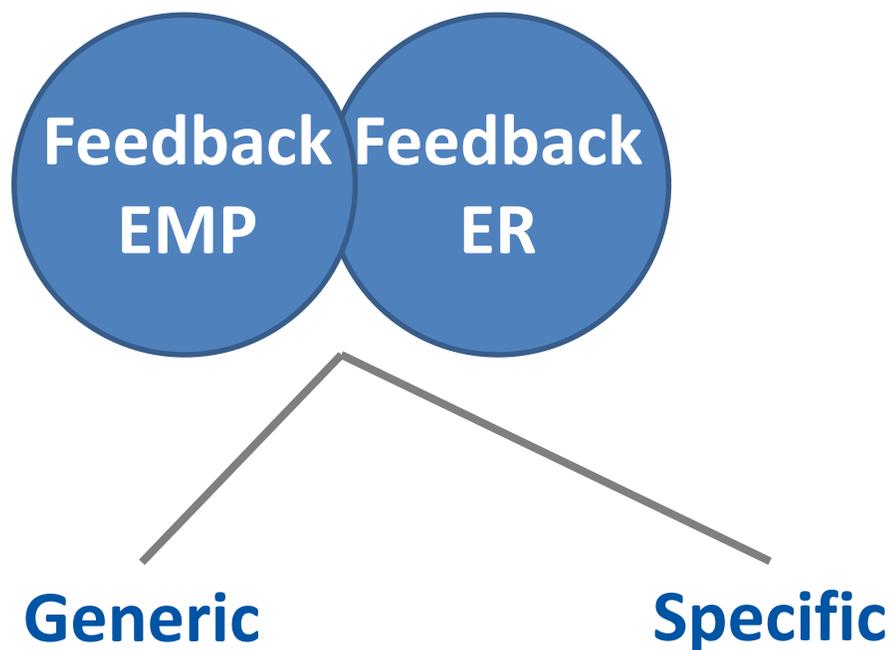
Joint discussion during feedback meeting

Exchange between States and AOs

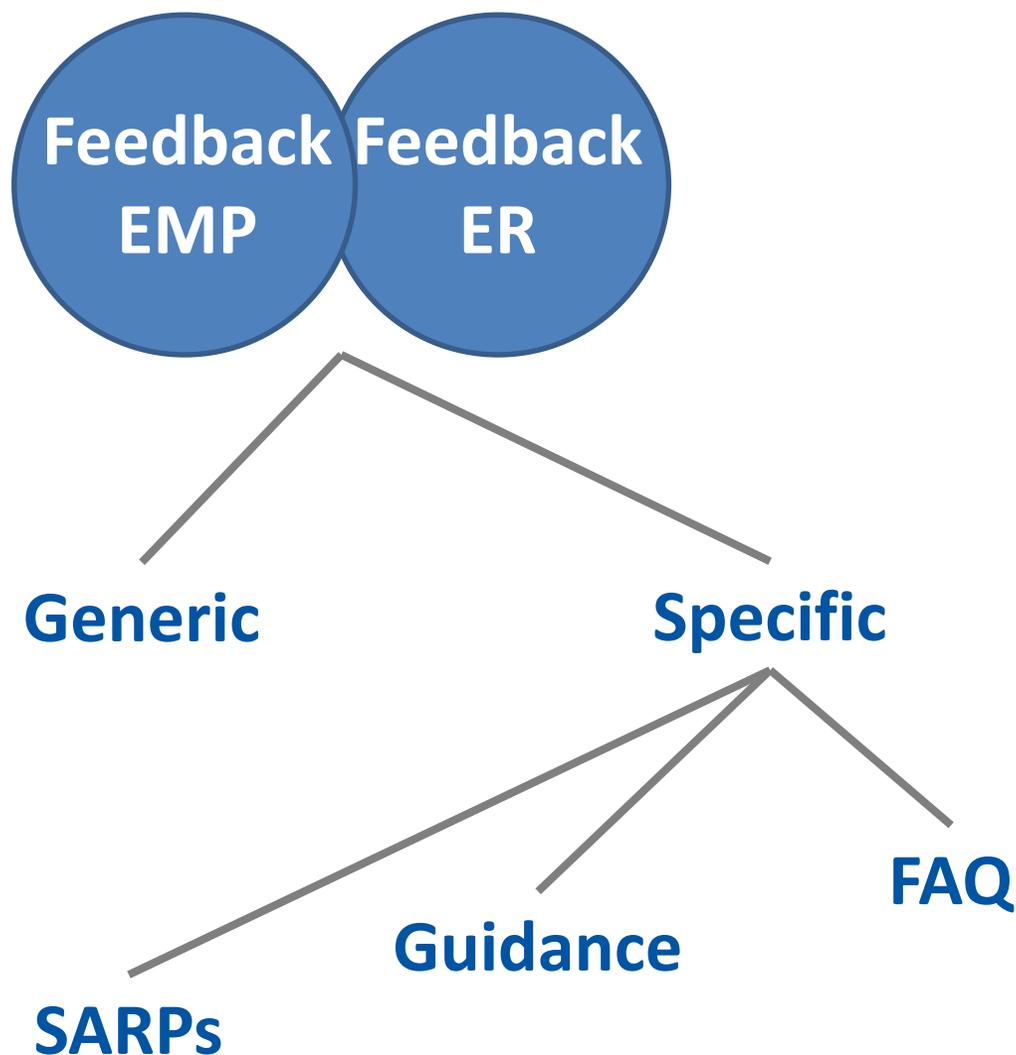


Feedback
EMP

Feedback
ER



- The project generated
 - **Generic Feedback** *and*
'To what extent felt participants comfortable with a process?'
 - **Specific Feedback**
'Is future guidance needed for a process?'



- **Specific Feedback** can be further categorized into:
 - **SARPs**
Related to the ongoing SARPs approval process [critical]
 - **Guidance and**
Input for future guidance material [supportive]
 - **FAQ**
Identifying core questions [supportive]

Part 1: Emissions Monitoring Plan (today)

- Project insights
- **Generic feedback**
- Specific feedback

Part 2: Emissions Report (tomorrow)

- Project insights
- Generic feedback
- Specific feedback

Question

Completing

(Aeroplane Operator) /

Approving

(State)

the Emissions

Monitoring Plan

(EMP) was...

simple

manageable

challenging

Key take away

- $\frac{3}{4}$ of State and Aeroplane Operator participants assessed the EMP approving/completing as **simple** or **manageable**

Note

- Individual needs and therefore effective support of States and Aeroplane Operators can be different
- Coaching, capacity building and working together is important

Question

Assessment of the provided Emissions Monitoring Plan guidance...

- very good*
- good*
- neutral*
- poor ...*

Key take away

- Most participants assessed the provided guidance material as **very good** or **good**

Note

- Continuous improvement always possible
- Example: Future detailed explanations of sections within the EMP (e.g. identification or data management)

Question

Time required for completing (Aeroplane Operator)/ Approving (State) the Emissions Monitoring Plan...

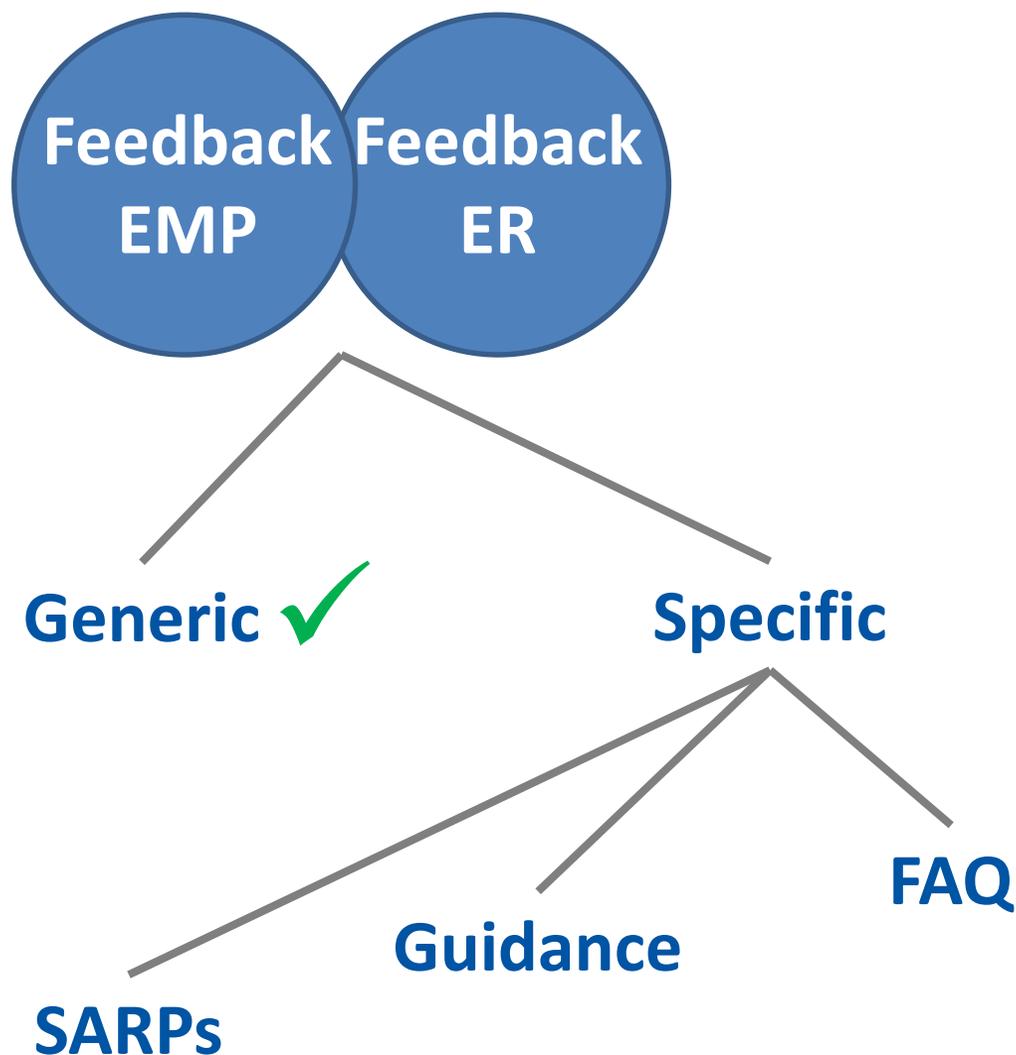
1-7 days

Key take away

- For most operators, drafting the EMP took **1 to 7 days**
- For all States, approving the EMP took **1 to 5 days**

Note

- Time requirements depending on size and complexity of the operations
- Examples for main drivers: chosen monitoring approach, size of fleet and operation



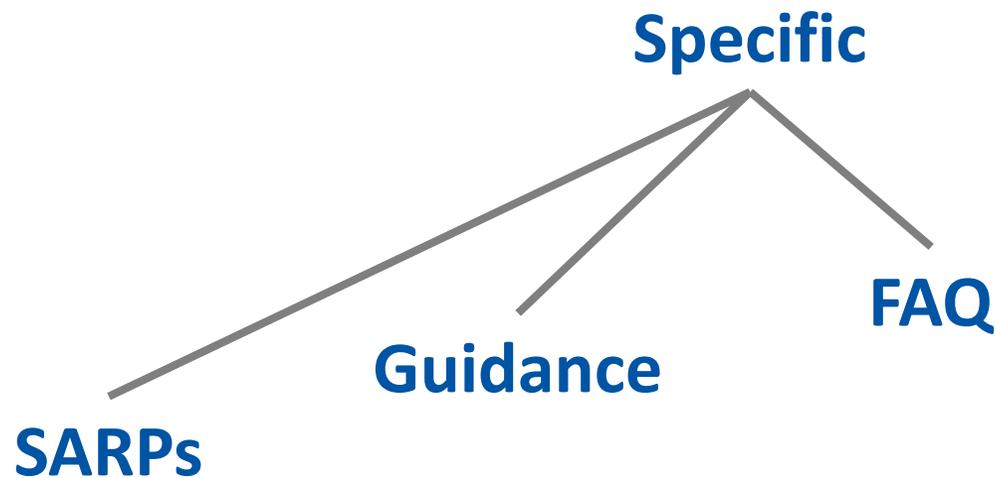
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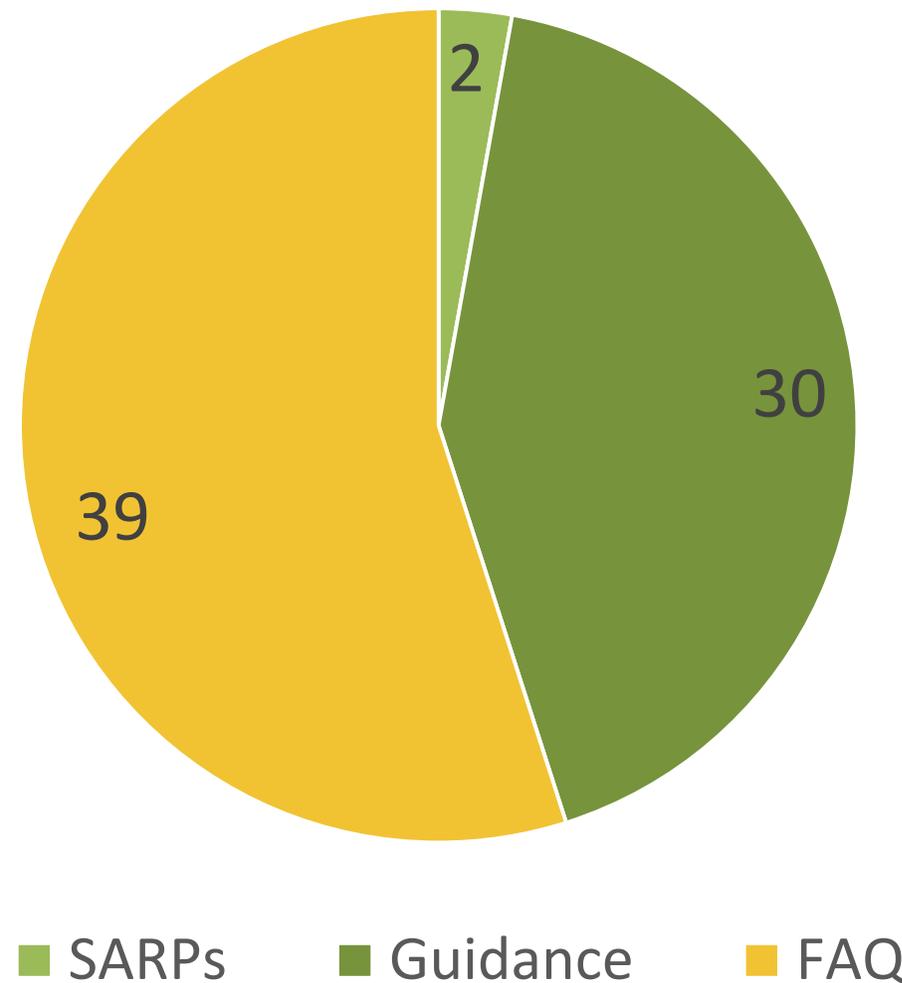
Part 2: Emissions Report (tomorrow)

- Project insights
- Generic feedback
- Specific feedback



Approach for this presentation

- Most often very specific feedback
- Examples for each of the three categories



Feedback (MRV provisions)

Though **Jet-A** and **Jet-A1** are separately listed, we could do that as "Jet-A/A1".

Listing of States pairs may not be necessary in EMP. That should be stated in Emissions Report.

Key take away

- For the MRV provisions in the SARPs **no critical finding** could be identified
- **Suitable and practical to implement**

Feedback (future guidance)

No need to describe handling of **density**, if Fuel Use Monitoring Method does not require density information.

List of States **both** or **one way**?

Especially prompts on data management do not specify the **expected level of detail** required.

Key take away

- Excellent input to produce future guidance on CORSIA
- Some editorial changes to improve understanding in provided material

Note

- The vast majority of issues can be resolved on a short term basis
- IT systems instead of MS Excel based tools considered as long term goals

Feedback (FAQ)

Does the **threshold for data gaps** refer to the number of flights or the amount of fuel?

There are five different Fuel Use Monitoring Methods. Can the results be assessed as **equally**?

Is it necessary to **describe all Fuel Use Monitoring Methods**, even if not all are used?

The threshold refers to the **number of international flights (2019-2010)** with subject to offsetting requirements (2021-2035)

Even though the results for single flights might differ, for a larger amount of flights, the methods can be assessed as equally

Only the **actual used** methods need to be described in the EMP

Feedback (FAQ)

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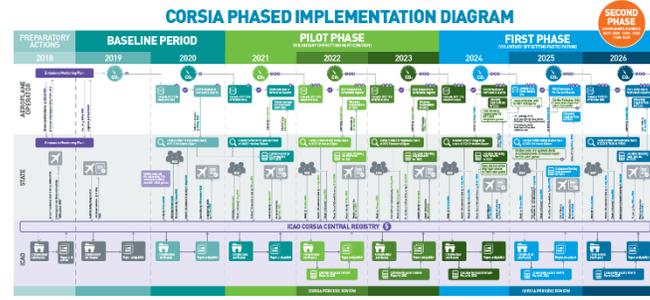
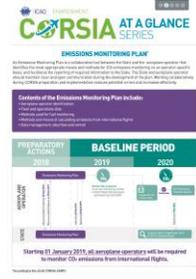
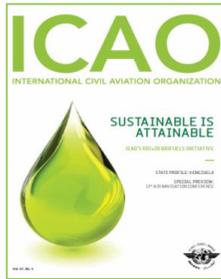
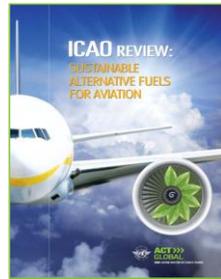
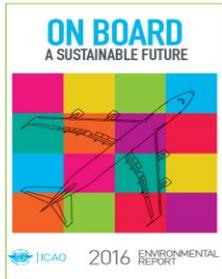
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Is it necessary to **describe all Fuel Use Monitoring Methods**, even if not all are used?

Key take away

- Input for the preparation and refinement of FAQs on CORSIA to clarify main questions

- **No significant findings** which would prevent the implementation of MRV provisions regarding the Emissions Monitoring Plan (according to the current draft SARPs).
- Lessons learned during the project will be used to create and refine FAQs and future guidance material to support the implementation of CORSIA.
- Communication and sharing of experiences will be key during CORSIA implementation.



For more information, please visit our website: <http://www.icao.int/env>