



Update on aviation non-CO₂ MRV operationalisation

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Overview

- State of play and timeline on the non-CO2 MRV
- Macro-view on the MRV – data, functioning
- AVR - verification scenarios

State of play and timeline

- *Monitoring and Reporting regulation (MRR) update - Commission Implementing Regulation (EU) 2024/2493 of 23 September 2024*
 - **Monitoring plan template** :developed with MS, CCEG, refinement and formatting underway – TBP in November/early December
 - **Initial* Guidance document** : completing available ones : FAQ and June 2024 Step by Step guide – to be published in early December
 - **Guidance workshop** : How to start the MRV in pre-NEATS environment? – **6** December
 - **Trainings** on filling-in the monitoring plan – **9** and **12** December (+ **2** December only for CA and verifiers)
 - *Final Guidance document (and associated training on NEATS) to take place in 2025 (once NEATS is available)
 - Documentation informing NEATS (models' parameters, efficacy definition, etc.) – exp. February 2025
- *Accreditation and Verification regulation (AVR) update – under way*
 - Draft concept and initial legal drafting presented to MS
 - Envisaged adoption : Q1/Q2 2025

MRV data and NEATS

1. Flight information (call sign in UTC)

- a. Flight number
- b. Day and time
- c. Departure and arrival airport (ICAO codes and/or IATA location identifiers)

Provided by NEATS (can be checked and corrected by AO)
Non-confidential
Needed in both Method C (weather-dependent (DEFAULT) approach and Method D (location-simplified approach)

2. Flight trajectory (4D)

- a. Timestamp (time interval between 2 time stamps, ideally 60 sec but could be more (linear interpolation within a flight phase, esp. cruise)
- b. Latitude
- c. Longitude
- d. Altitude

Provided by NEATS (source: ECTL : model 1,2,3 with possible alternatives and equivalence in terms of data, ex: ADS-B, where relevant)
Non-confidential
Needed in both Method C&D (different definition depending on the Method)

3. Aircraft properties

- a. Aircraft type
- b. Engine UID
- c. Aircraft mass

Can be provided by NEATS (if Defaults are used, Annex IIIb of MRR – conservative defaults values for engine UID per aircraft type, based on ICAO EDB)
Non-confidential (?) (unless aircraft mass is not provided, and if AO needs to provide load factor, unless Default value of 1 is used)
Needed in both Method C&D

4. Aircraft performance (*optional*)

- a. Fuel flow
- b. Aircraft performance model
- c. Engine efficiency

If no fuel flow measured or estimated through own models, NEATS can estimate (ECTL BADA)
Confidential
Optional in both Method C&D

5. Fuel properties

- a. Hydrogen to carbon (H/C) ratio
- b. Aromatic content of the fuel
- c. Sulphur
- d. Naphthalene
- e. Net calorific value

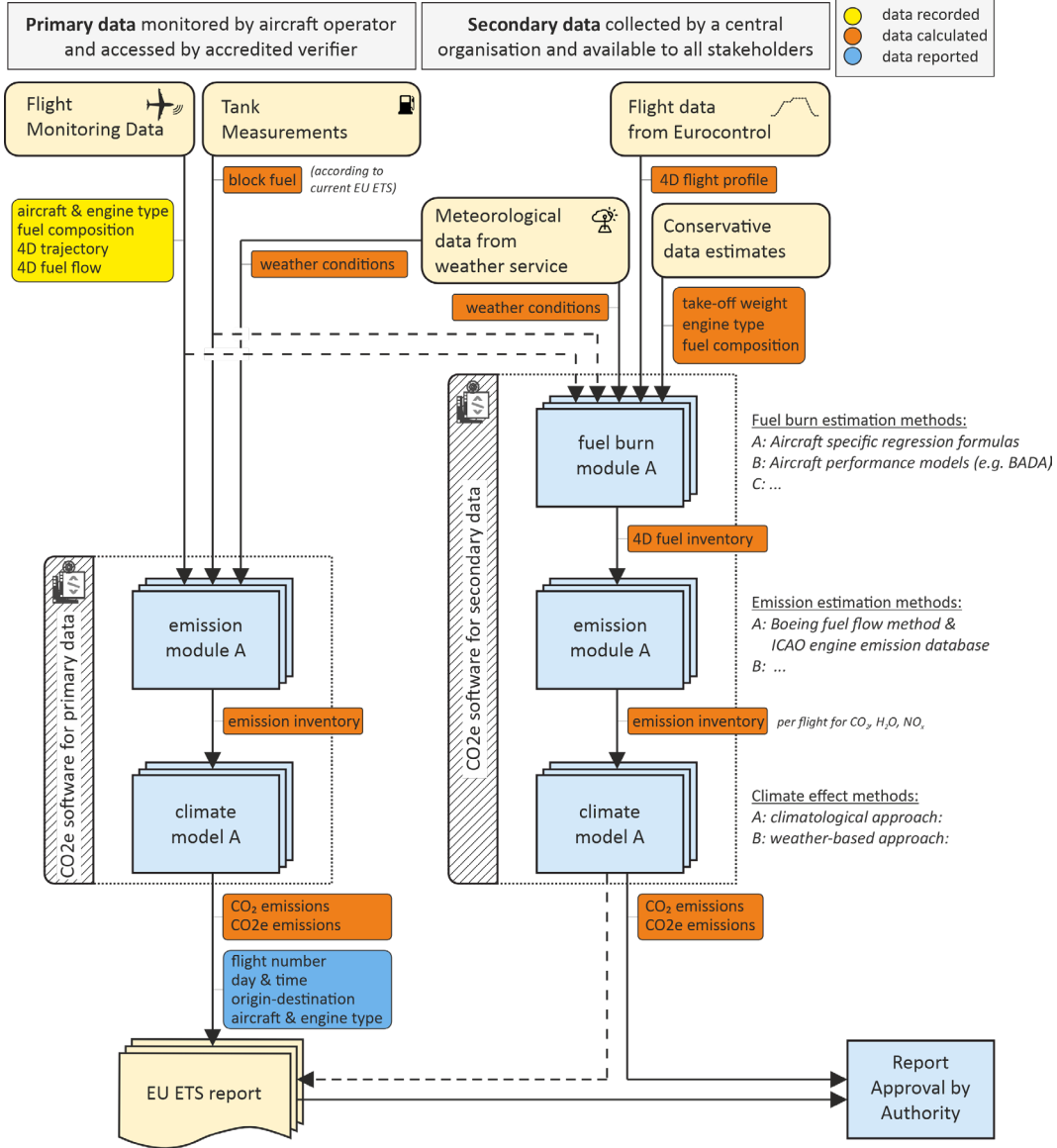
Challenge : mixed in airport fuel farm. Leads on finding the data : e.g. info from fuel suppliers per batch to purchasing AO; AO to determine dynamic max levels per airport according to batches, used to calculate H/C per flight.
Coordination with ReFuelEU (Art.10) encouraged.
Confidential (?). Defaults in NEATS: max regulatory (known) levels (ASTM)
Needed in Method C

6. Weather data

- a. Basic weather data (altitude corrected humidity, temperature, pressure), OR
- b. Enhanced weather data (above + RH_i, etc) through NWP

Common reference NWP model provided through NEATS (national weather service)
Enhanced and basic needed respectively in Method C and Method D

MRV Functioning



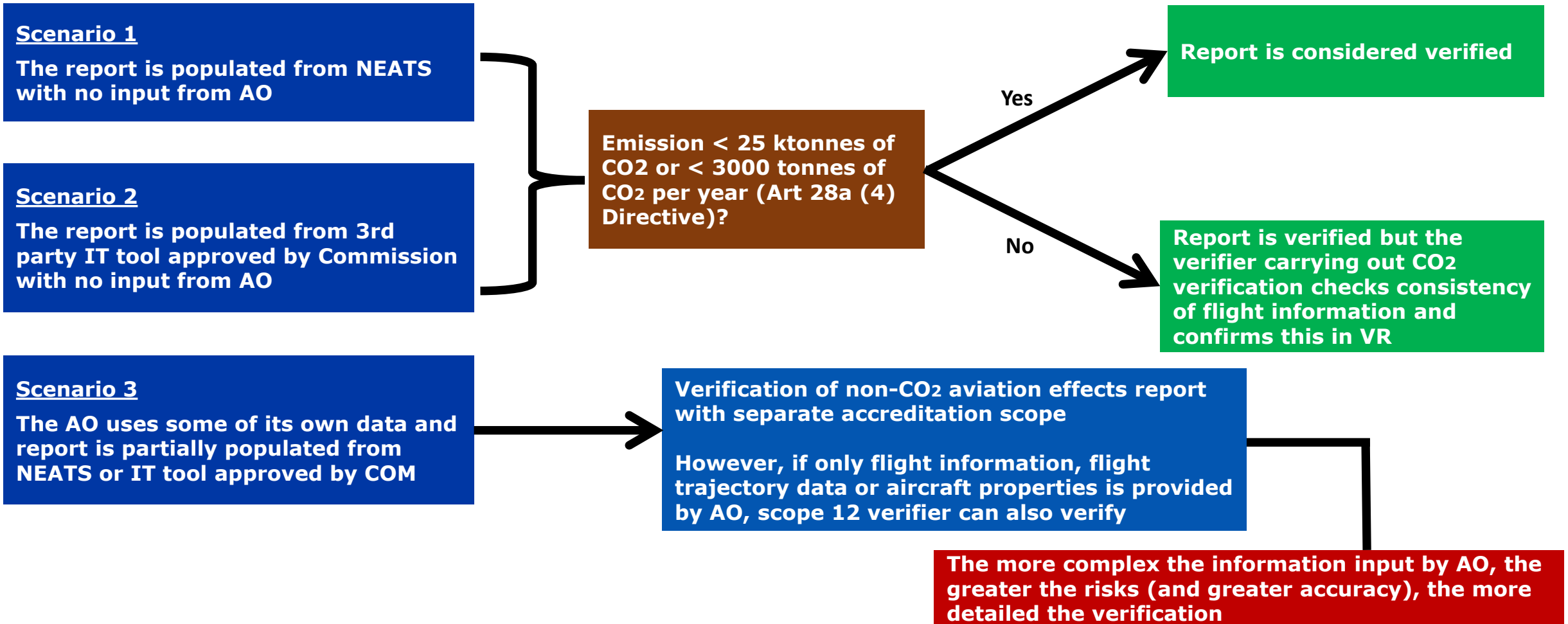
Verification of non-CO₂ activities

- The same verification steps and principles of verification apply to non-CO₂ aviation effects:
 - Pre-contract phase, strategic analysis, risk analysis & other stages of verification, verification reporting;
 - Reasonable level of assurance & other principles of verification.
- The degree of automation of the monitoring process has an impact on how verification is carried out and to what extent a verifier is involved.

Three monitoring and reporting scenarios

- **Scenario 1**: the non-CO₂ aviation effects report is automatically generated from NEATS (COM non-CO₂ aviation effects tracking system) without any input from the aircraft operator.
- **Scenario 2**: the non-CO₂ aviation effects report is automatically generated from a third party or own IT system approved by Commission without any input from the aircraft operator.
- **Scenario 3**: the aircraft operator uses some of its own data to input in NEATS or IT tools → the type of data input has an impact on complexity of data flow:
 - Limited straightforward input: only input of flight information, flight trajectory data or aircraft properties;
 - More significant input: flight information, flight trajectory data, aircraft properties, aircraft performance, fuel properties;
 - Own fuel burn method and emission estimation methods.

Retained options for verification in Scenarios 1, 2 and 3



Thank you



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