ICAO ENVIRONMENT

ICAO SEMINAR ON GREEN AIRPORTS

Session 6 – Community Engagement and Cooperation

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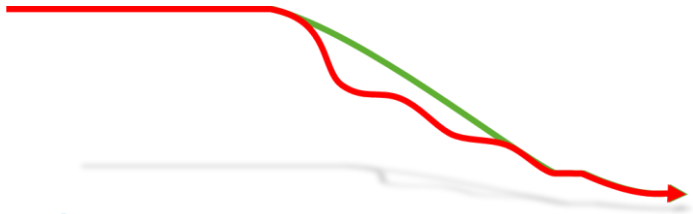
EUROCONTROL Environment

The European CCO / CDO TF was established in 2015



Outcomes:

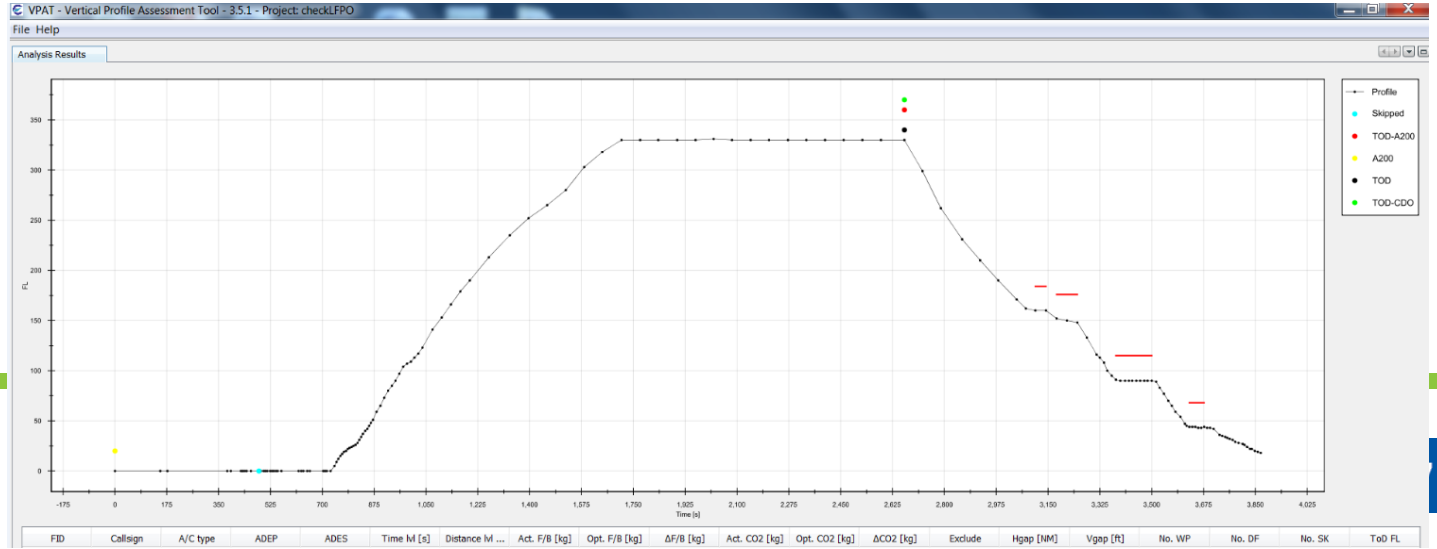
- Harmonised definition of achieved CCO and CDO
- Harmonised definition of a noise CDO and a fuel CDO
- Harmonised definition of a noise CCO and a fuel CCO
- Harmonised definition of a metric for measurement of CCO / CDO undertaking

For detailed definitions and more information on the outcomes of the TF, see http://www.eurocontrol.int/articles/continuous-climb-and-descent-operations

States / ANSPs are encouraged to use the harmonised definitions and parameters for measurement whenever they detail the status of CCO / CDO at international fora

A benefits study was undertaken……

- European wide CCO and CDO study to measure the potential benefit pool available from vertical flight efficiency
- 3 months ADS-B surveillance data from FR24
- EUROCONTROL, through SESAR developed VPAT (Vertical Profile Assessment Tool) which is able to handle the intricacies / nuances of ADS-B data (e.g. granularity, horizontal / vertical spikes, ADS-B receiver reliability etc..)



Results:

Type	Altitude Band	% of flights CCO	Avg time level (all flights) (s)	Avg fuel wasted (all flights) (kg)	Avg CO2 wasted (all flights)	Avg money saved - (all flights) (€)
Noise	2500ft - FL105	93,38%	5,786056	-	-	-
Fuel	2500ft - ToC	74,74%	41,87293006	4,32258347	13,65940525	1,918670256

Type	Altitude Band	% of flights CDO	Avg time level (all flights) (s)	Avg fuel wasted (all flights) (kg)	Avg CO2 wasted (all flights)	Avg money saved - (all flights) (€)
Noise	FL75 - 1800ft	45,08%	66,69115297	-	-	-
Fuel	ToD - 1800ft	26,19%	165,5134225	38,08382778	120,3448809	16,90431384

Results:

CCO – 93% CCO to FL100 (75% to ToC)
Average time in level flight = 42 secs (to ToC)
Average possible saving per flight (All European flights) = 4.3kg fuel / 13.7kg CO2 / 2€

CDO – 45% from FL75 (26% from ToD)
Average time level flight = 165 secs (from ToD)
Average possible saving per flight (All European Flights) = 38.1kg fuel / 120kg CO2 / 17€

Results:

- **DRAFT** results indicate potential savings IN EUROPE of up to:

  340,000 tonnes fuel / year
  1,100,000 tonnes CO_2 / year
  150M EUR / year

- The potential fuel saving benefits from CDO are in the region of x10 of those from CCO

- Some consider that the results could be conservative…….

- These figures are aligned with ICAO-CAEP estimations of fuels saving benefits from CCO / CDO estimated in ICAOs ASBU B0 environmental assessment.

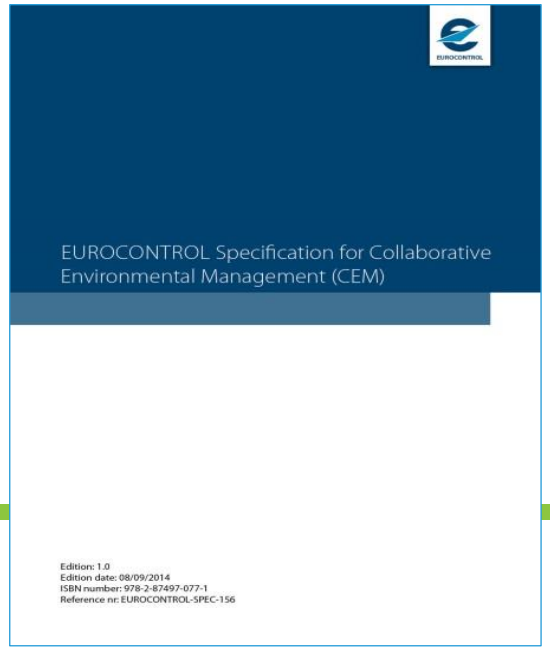
For more, see page 120 of the 2016 ICAO Environmental Report:
https://www.icao.int/environmental-protection/Documents/ICAO%20Environmental%20Report%202016.pdf

Airport-related ASBU modules

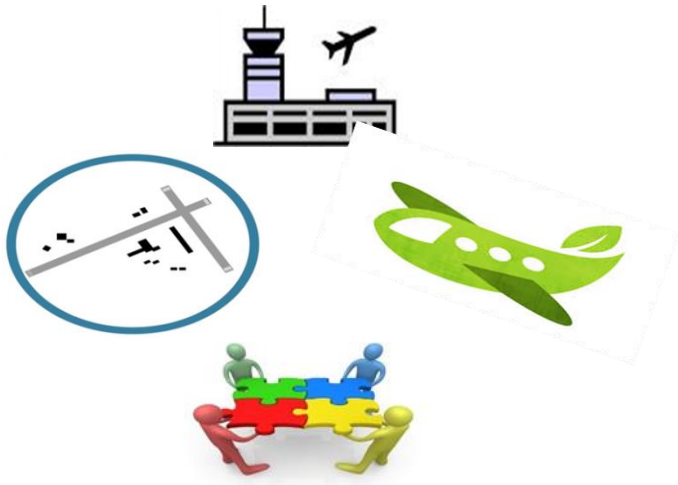
- A-CDM – Airport Collaborative Decision Making
- SURF – Surface Operations (A-SMGCS - Advanced-Surface Movement Guidance and Control System)
- APTA – Airport Accessibility (GBAS for non-ILS runways, access through RNP-AR functionality, reduction of taxi times due to reduction of ILS critical area, different glideslopes permits a reduced separation)
- CDO – Continuous Descent Operations
- CCO – Continuous Climb Operations
- WAKE – RECAT, TBS
- RSEQ – AMAN / SMAN

How can collaboration be addressed?

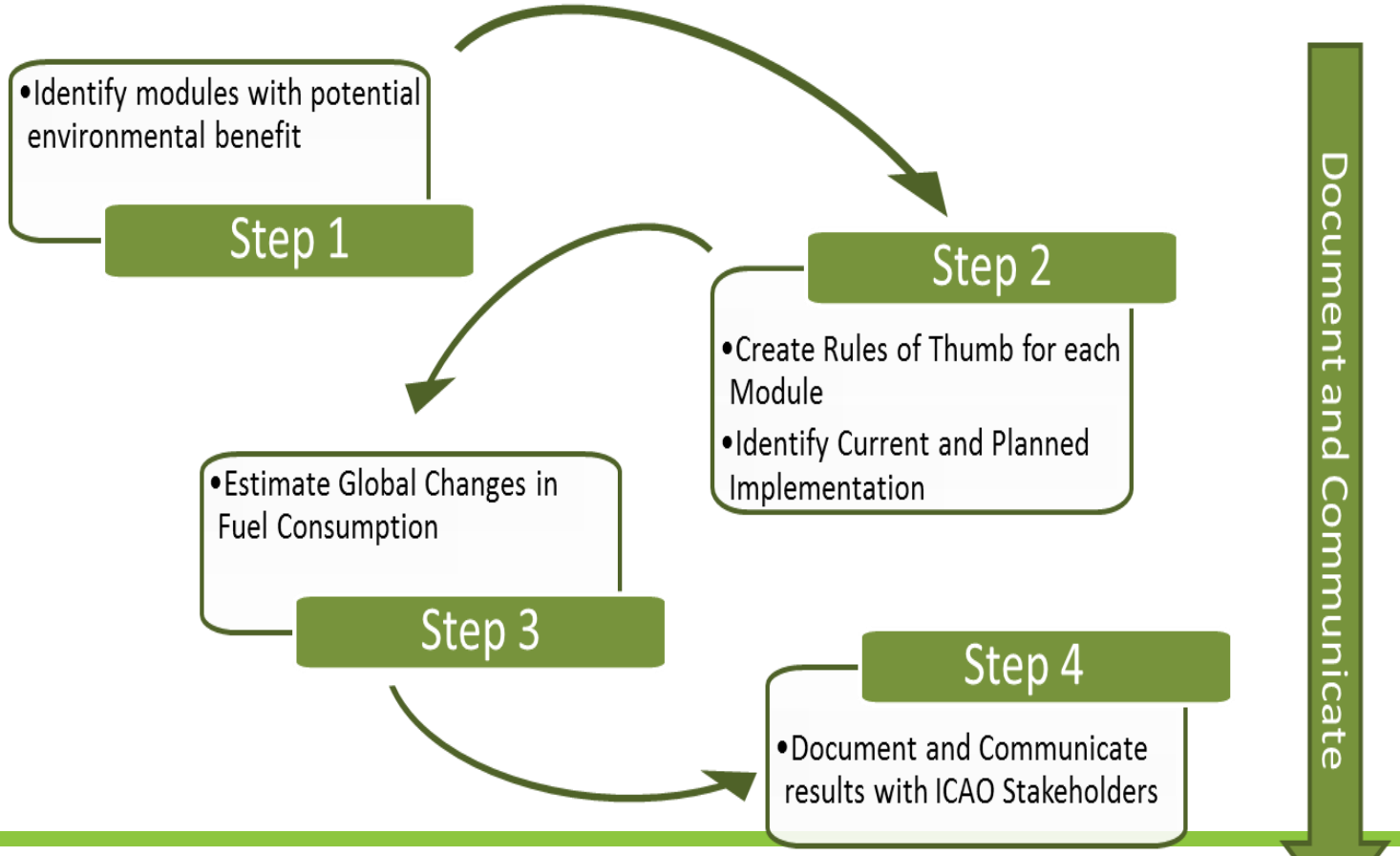
CEM SPECIFICATION - *Getting key operational stakeholders to address their common environmental challenges: airport operators, aircraft operators and ANSPs*



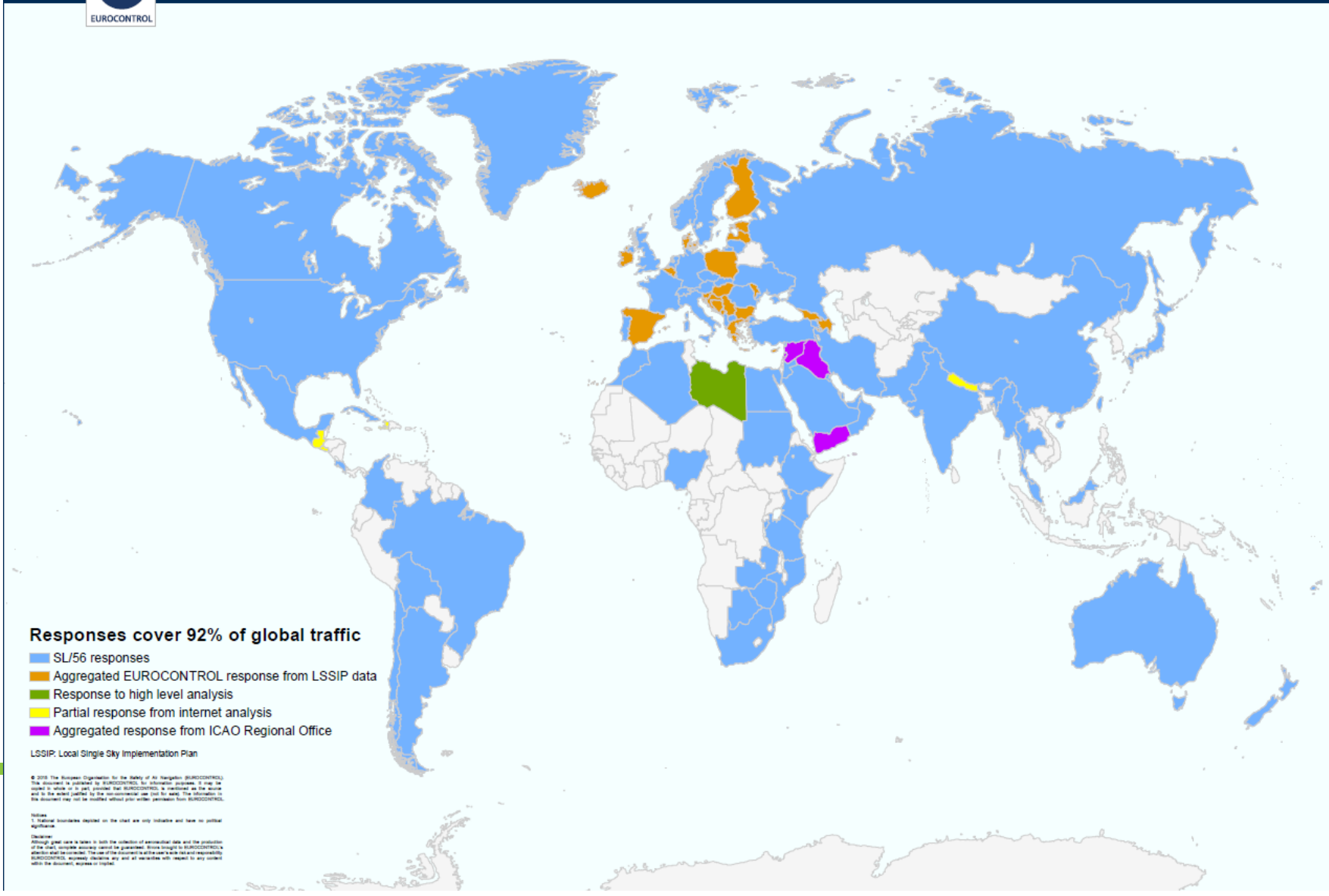
Published by EUROCONTROL on the 12/9/2014



ASBU B0 environmental benefits assessment



Global responses from SL/56

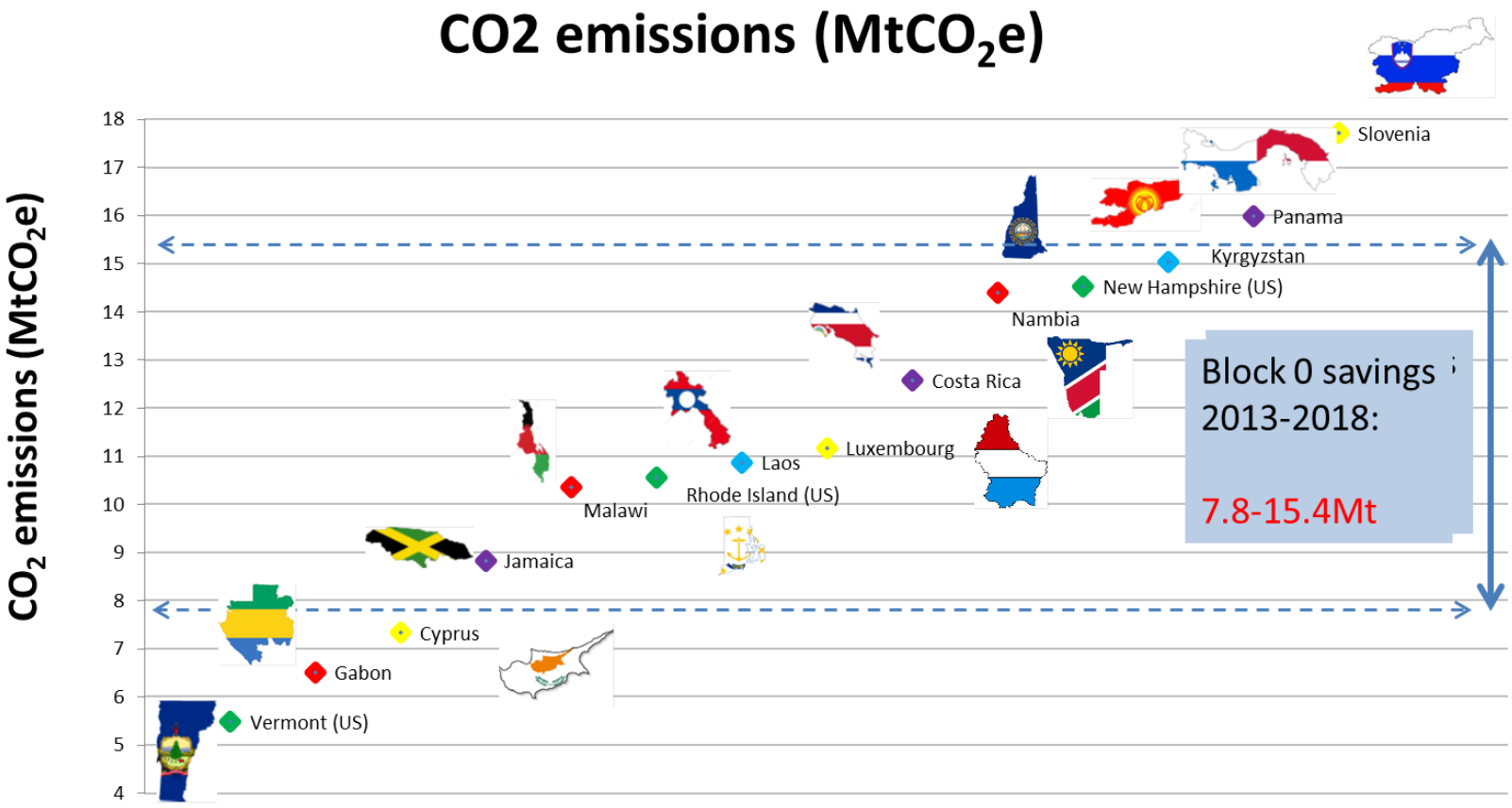


Results of ASBU B0 analysis

- Planned implementation of ASBU Block 0 modules by States between 2013 and 2018 is estimated to provide significant fuel, CO_2 and cost savings:

- Total annual fuel saving of 2.5 - 4.9Mt
- Total annual CO2 savings of 7.8 - 15.4Mt
- Total annual cost savings of up to $2.3 billion / year

Estimated B0 savings 2013-2018: 7.8 – 15.4Mt CO2 / year



2016 – **NEW** combined B0/B1 analysis

- Combined B0/B1 (2013-2025) – as the benefits of B1 elements build on those in B0 so accrue together and should not be separated.

- B0 = 9 modules / 21 RoTs
- B0/B1 = 18 modules / 46 RoTs

- It should also be noted that although 2025 has been selected as the year to be modelled, it does not imply that the benefits of a certain block are only in a confined timeframe

- **SL/118 will be issued shortly – need planned implementation data to be provided as soon as possible**

- To be delivered by CAEP/11 (February 2019)

Thank you / Merci

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