



Destination Green

ICAO Symposium on Aviation and Climate Change, "Destination Green", 14 – 16 May 2013

Fuel and CO₂ Benefits from ASBU Block 0

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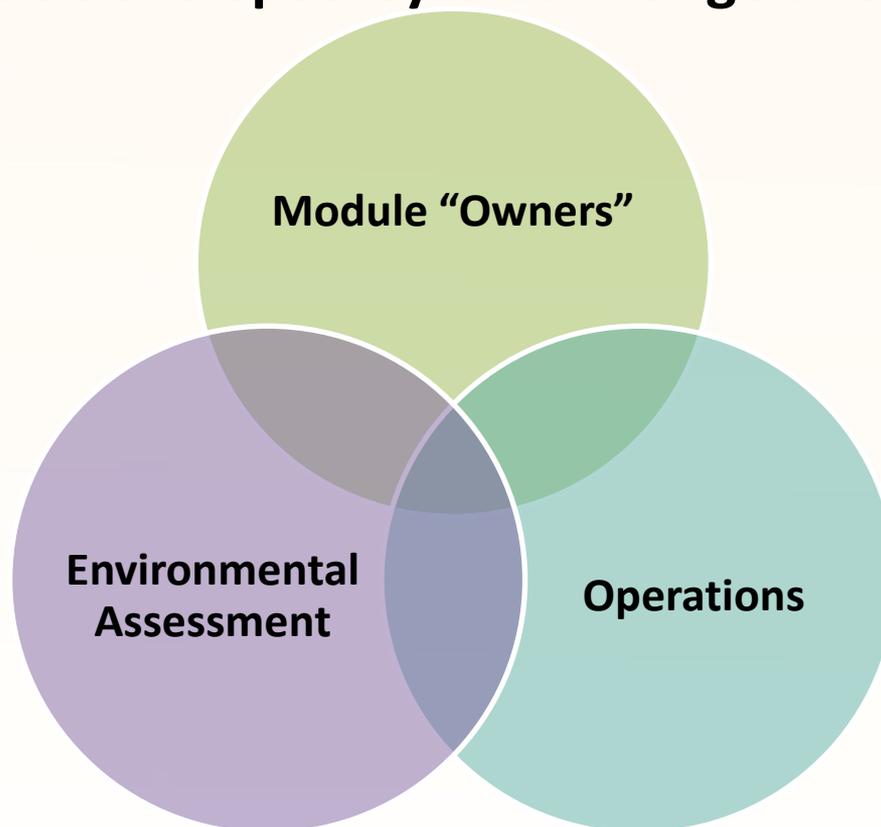
Quantifying Fuel and CO₂ Savings from Block 0



- Many ASBU modules currently being implemented are expected to deliver tangible fuel / CO₂ savings
- Previously, these haven't been quantified in a global manner
- In light of recently-completed CAEP trends, an additional task to understand the magnitude of these benefits is underway

Terms of Reference for analysis developed by broad range of experts

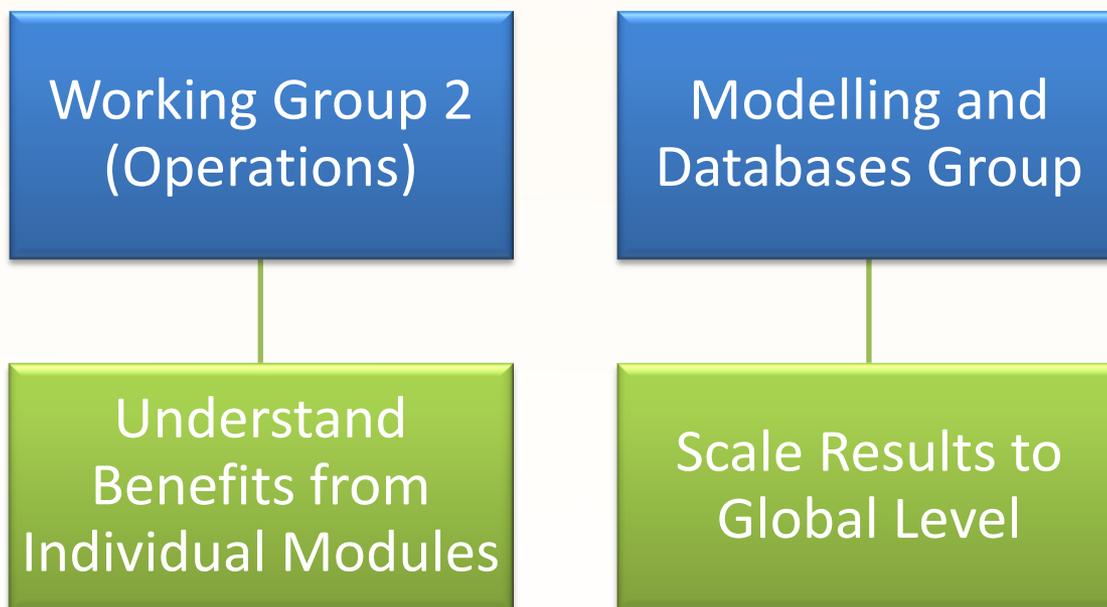
- 10 States
- 4 Observers
- 3 ICAO Sections
- 10 time zones



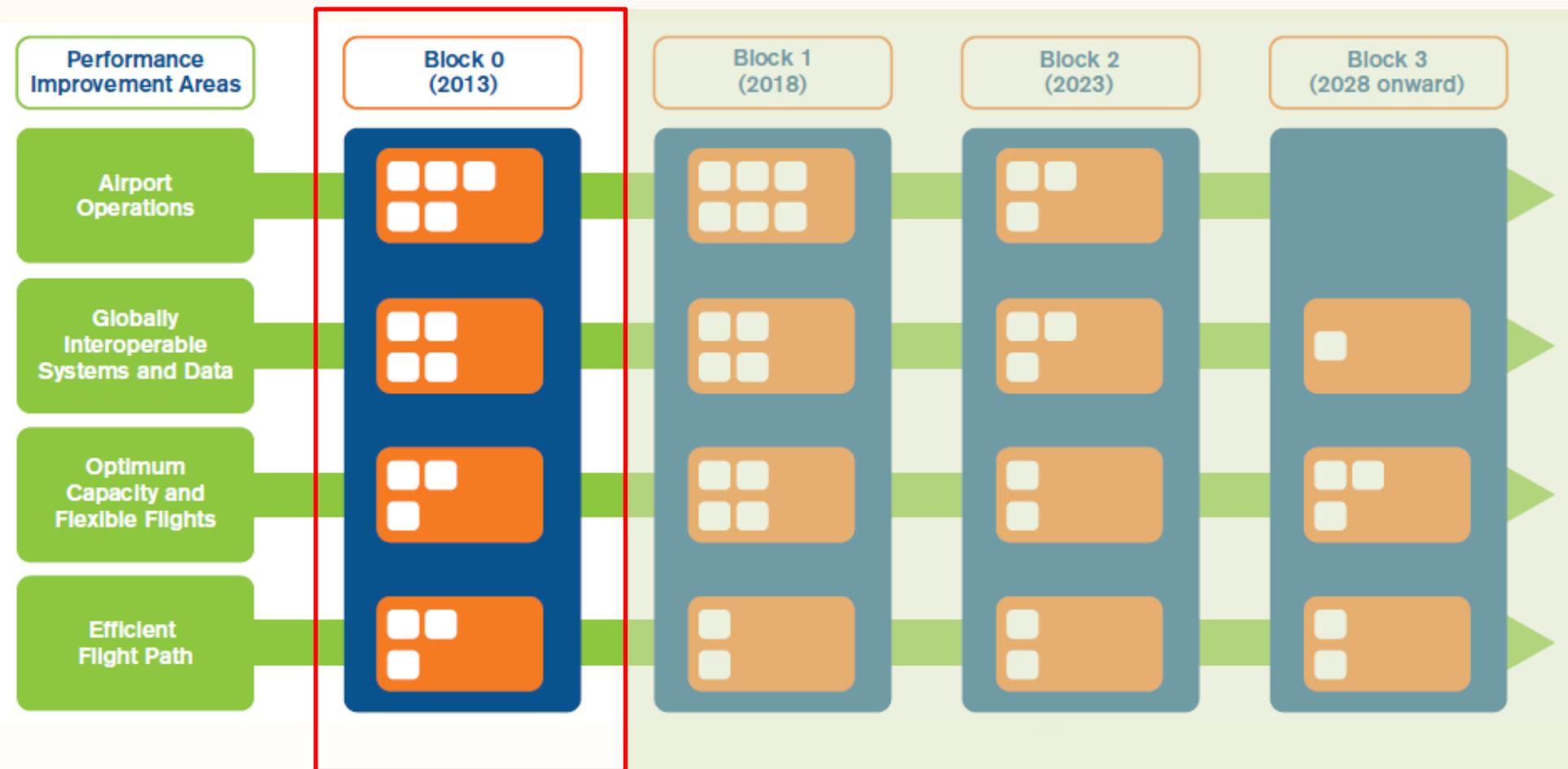


Analysis by CAEP

- Terms of Reference reviewed and approved by CAEP
- Work assigned to two Working Groups



Focus is on Block 0

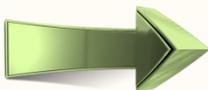




Phased Approach



Phase I: Inventory of modules and their potential impact



we are here

Phase II: Estimation of fuel changes by module

Phase III: Estimated global changes in fuel consumption

Phase IV: Final Report

Phase V: *Robust approach for future analyses*



Modules Selected



Module	Title
B0-05	Continuous Descent Operations (CDO)
B0-10	Improved operations through enhanced en-route trajectories (FUA)
B0-15	Improve traffic through runway sequencing (AMAN/DMAN)
B0-20	Continuous Climb Operations (CCO)
B0-35	Air Traffic Flow Management (ATFM)
B0-40	Improved safety and efficiency through the initial application of data link en-route
B0-70	Optimised wake turbulence separation
B0-80	Airport Collaborative Decision Making (A-CDM)
B0-84	ADS-B initial capability and ground surveillance
B0-86	Improved access to optimum FL though climb and descent with ADS-B



Types of Benefits



Module	Title	Benefits
B0-05	Continuous Descent Operations (CDO)	Reduced fuel burn on arrival
B0-10	Improved operations through enhanced en-route trajectories (FUA)	Reduced in-flight fuel burn
B0-15	Improve traffic through runway sequencing (AMAN/DMAN)	Reduced airborne holding and taxi-out time
B0-20	Continuous Climb Operations (CCO)	Reduced fuel burn during climb
B0-35	Air Traffic Flow Management (ATFM)	Reduced fuel burn in all phases of flight, including taxi
B0-40	Improved safety and efficiency through the initial application of data link en-route	Reduced in-flight fuel burn
B0-70	Optimised wake turbulence separation	Reduced taxi-out time and reduced in-flight fuel burn
B0-80	Airport Collaborative Decision Making (A-CDM)	Reduced taxi-out time
B0-84	ADS-B initial capability and ground surveillance	Reduced in-flight fuel burn
B0-86	Improved access to optimum FL through climb and descent with ADS-B	Reduced in-flight fuel burn



Interdependencies



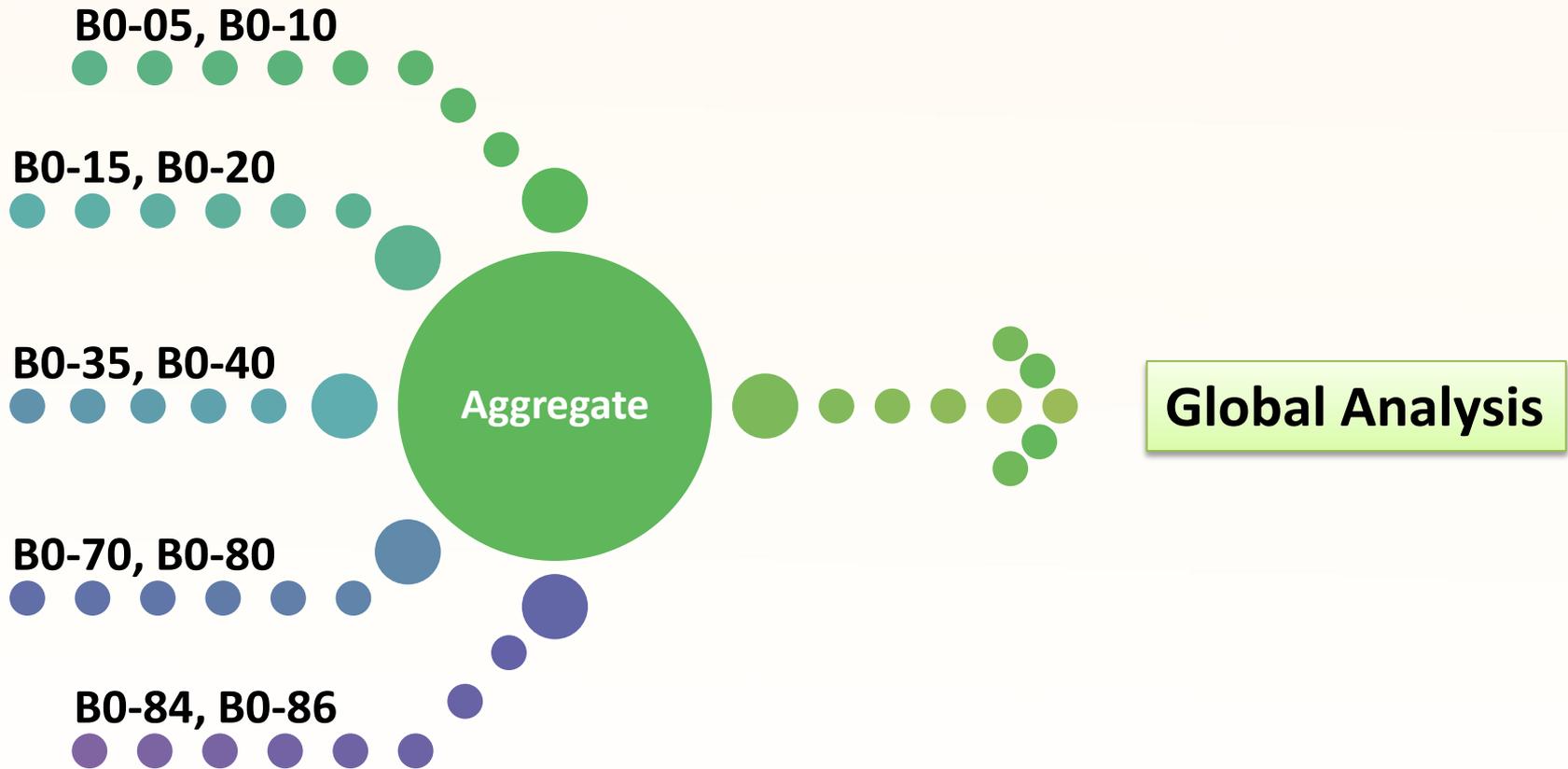
- Clearly, the modules are linked (by design)
- Relationships between the modules are well understood, to avoid double-counting

Taxi Time Savings (Example)

1 minute + 1 minute \neq 2 minutes

Next Steps

Module-Level Benefits





Thank You



A large banner for the "Destination Green" event. On the left is the ICAO logo. To its right, the text "Destination Green" is written in a large, bold, italicized font. Below this, it says "ICAO Headquarters, Montréal, Canada" and "14 - 16 May 2013". The background of the banner features several green airplane silhouettes flying upwards, with wavy green lines at the bottom.