ICAO UNITING AVIATION

Fuel and CO_2 Benefits Delivered through ASBU

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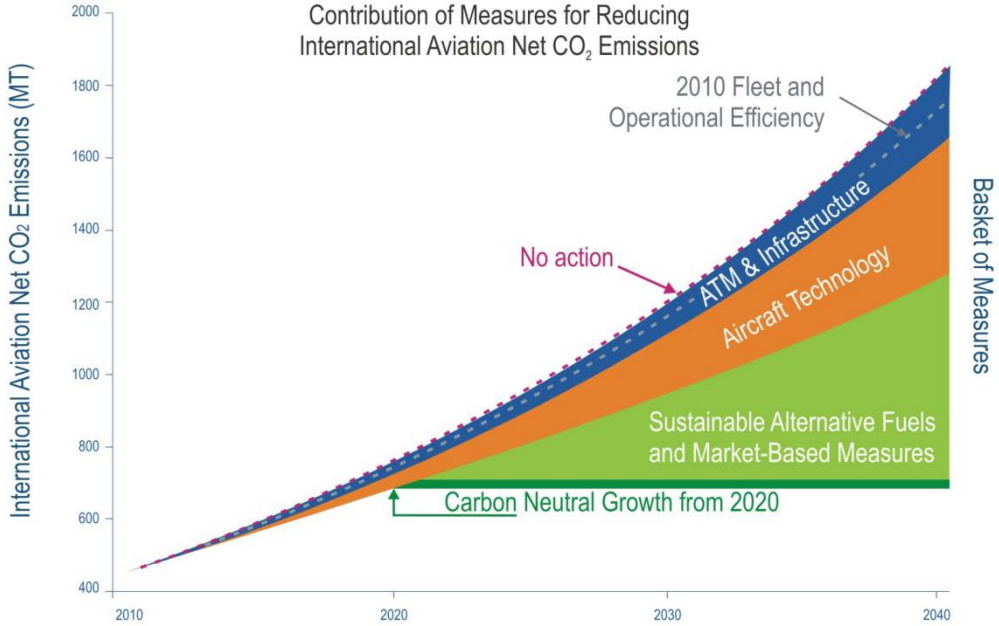
Last year, by the Numbers

- **32 Million scheduled departures**
- **42 Million kilometres flown**
- **3 Billion passengers**
- **35% of world trade value in freight**
- **88% efficient**

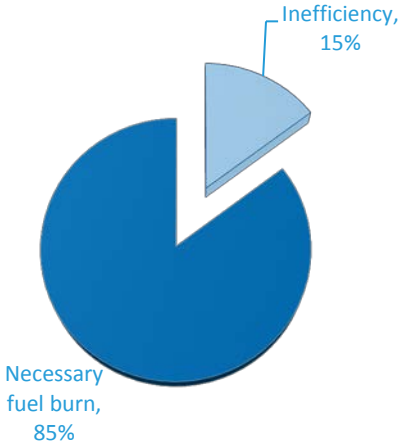
CAEP International Aviation Net CO_2 Emissions Trends



Operational Efficiency in a Static ATM System up to 2040

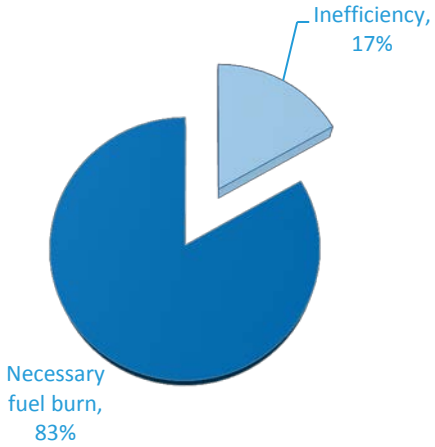
If no ATM improvements are made, system efficiency will degrade by 2% every decade.

2020



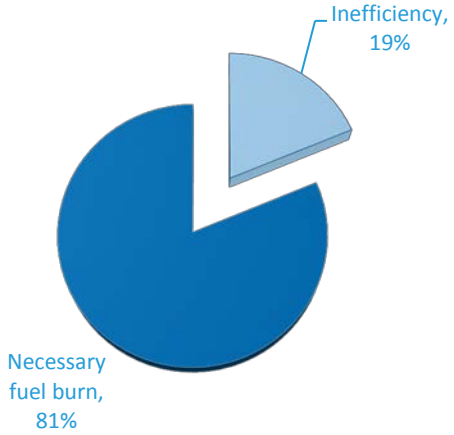
1.7x 2010 Operations

2030



2.7x 2010 Operations

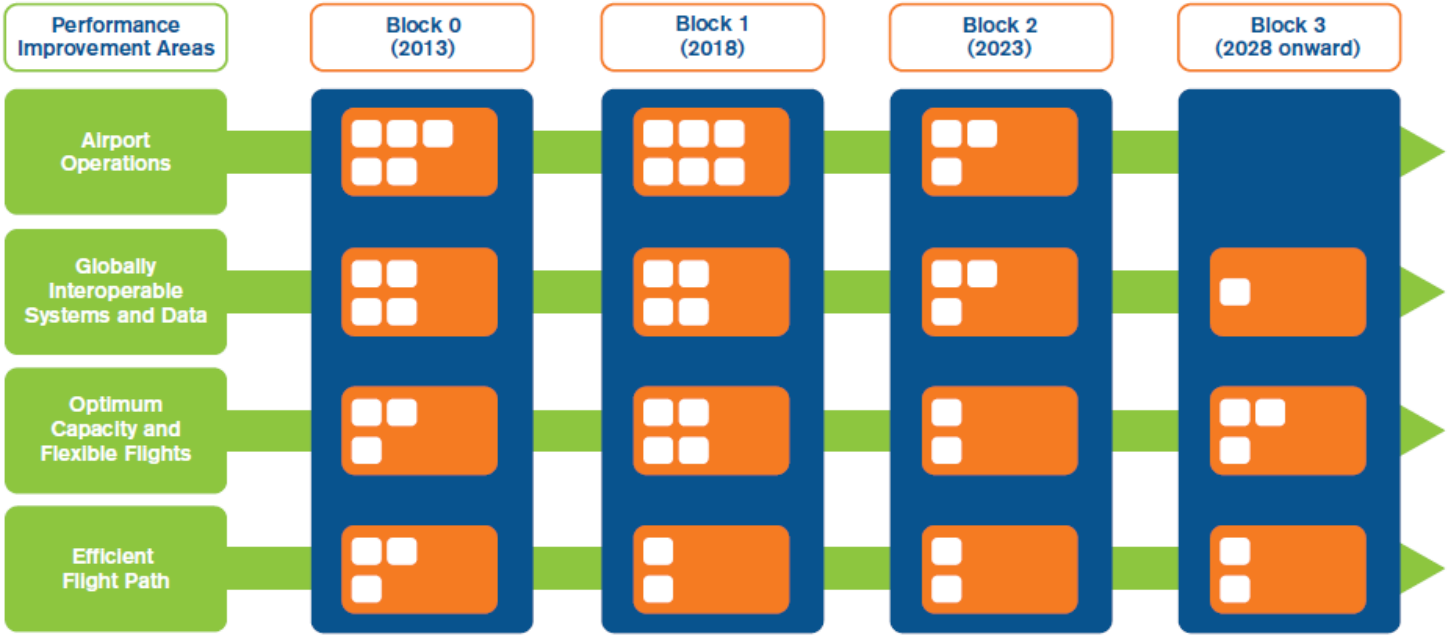
2040



4.0x 2010 Operations

Source: IEOGG 2013 and CAEP/9 Forecast

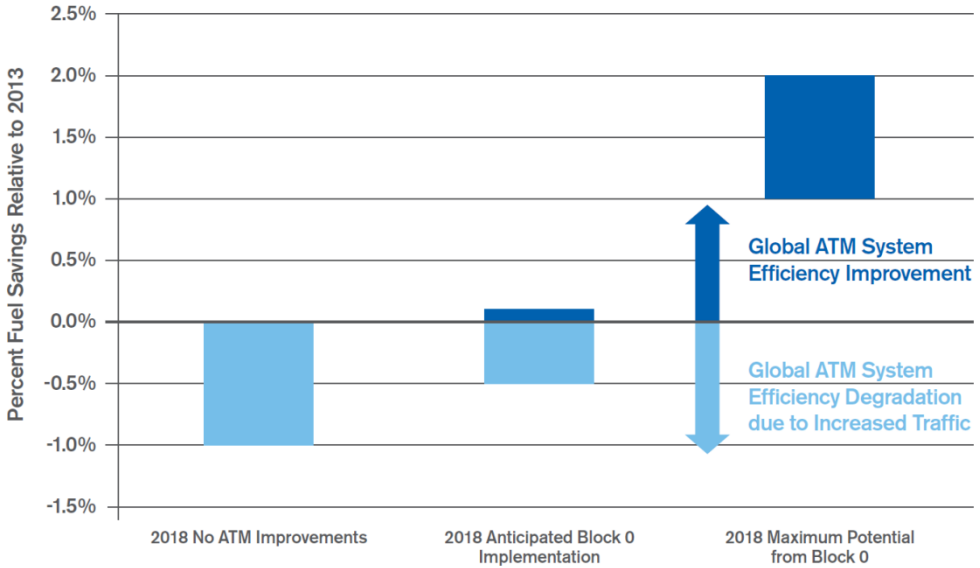
Aviation System Block Upgrades

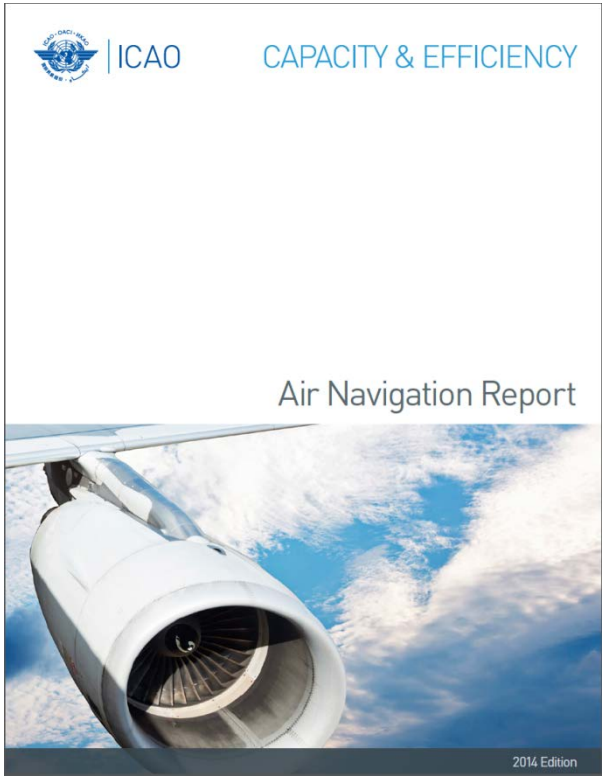


Types of Benefits

Module	Title	Benefits
B0-CDO	Continuous Descent Operations	**Reduced fuel burn on arrival**
B0-FRTO	Free Route Operations	**Reduced in-flight fuel burn**
B0-RSEQ	Runway Sequencing	**Reduced airborne holding and taxi-out time**
B0-CCO	Continuous Climb Operations	**Reduced fuel burn during climb**
B0-NOPS	Network Operations	**Reduced fuel burn in all phases of flight, including taxi**
B0-TBO	Trajectory Based Operations	**Reduced in-flight fuel burn**
B0-WAKE	Wake Turbulence Separation	**Reduced taxi-out time and reduced in-flight fuel burn**
B0-ACDM	Airport Collaborative Decision Making	**Reduced taxi-out time**
B0-ASUR	Alternative Surveillance	**Reduced in-flight fuel burn**
B0-OPFL	Optimum Flight Levels	**Reduced in-flight fuel burn**
B0-APTA	Approach procedures including vertical guidance	**Reduced fuel burn during arrival, fewer missed approaches**
B0-SURF	A-SMGCS, ASDE-X	**Reduced taxi and airborne holding time**
B0-FICE	Increased efficiency through ground - ground integration	**Reduced in-flight fuel burn**
B0-DAIM	Digital AIM	**Reduced in-flight fuel burn**
B0-AMET	Met information supporting enhanced operational efficiency	**Reduced fuel burn in all phases**

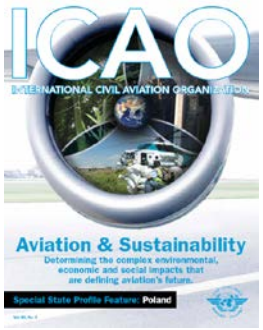
Preliminary Results

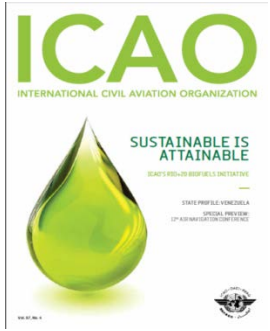


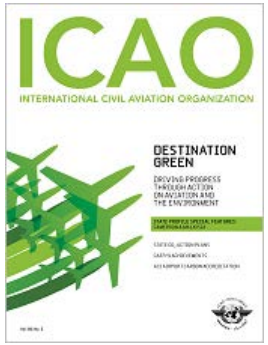


Air Navigation Report

- Status of implementation of the air navigation infrastructure
- Success stories and associated best practices
- Benefits associated with the implementation of operational measures
- Assessment of the potential fuel savings from planned Aviation System Block Upgrade (ASBU) Block 0 implementation







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