

# Fuel and CO<sub>2</sub> Benefits from ASBU Block 0

Environment  
ICAO Air Transport Bureau

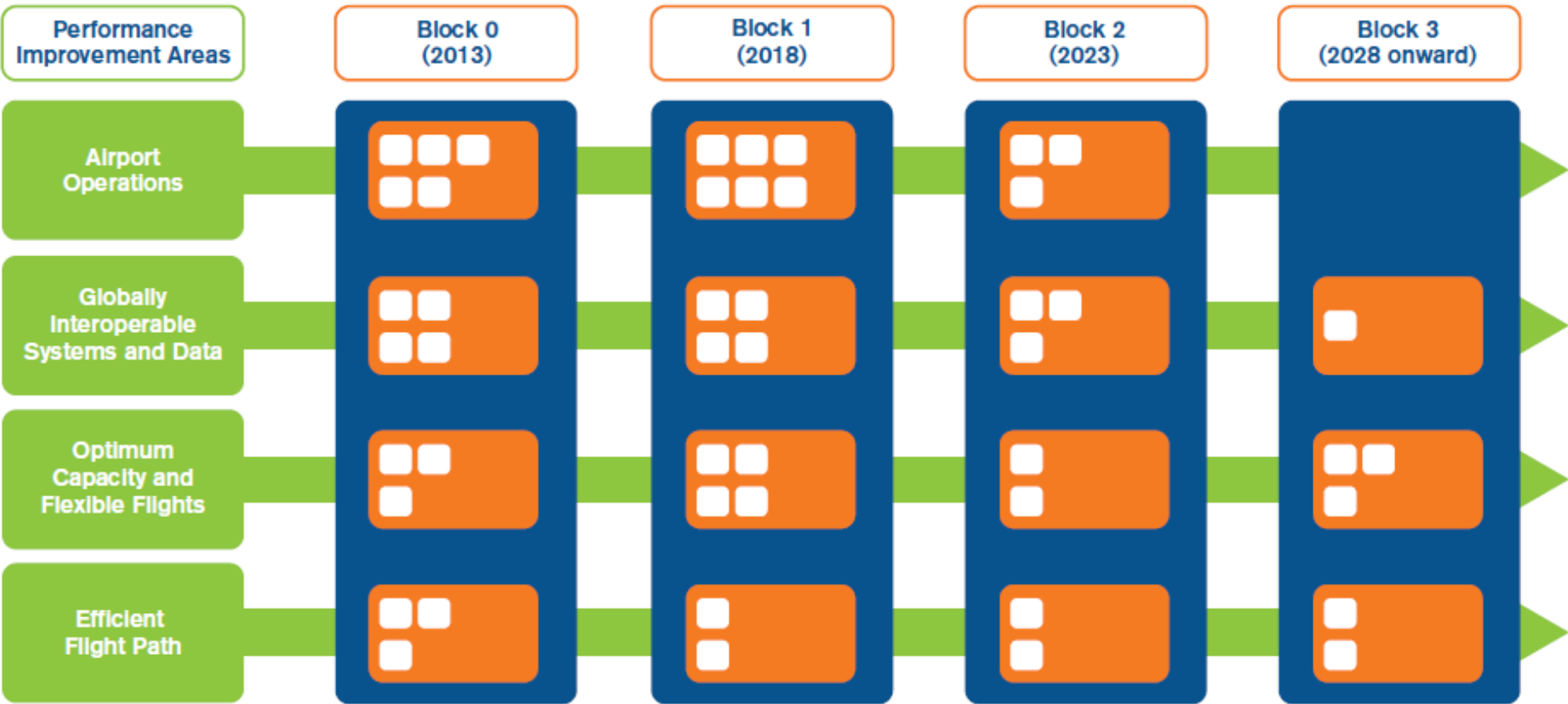


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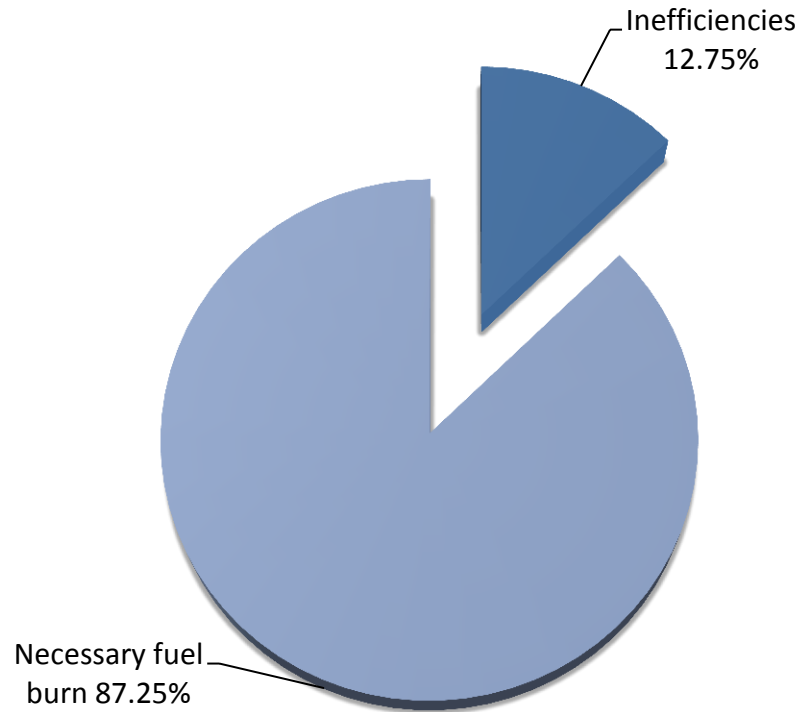


# Aviation System Block Upgrades





In 2010, the global ATM system was between 87.25% and 89.75% efficient.



Source: IEOGG 2013

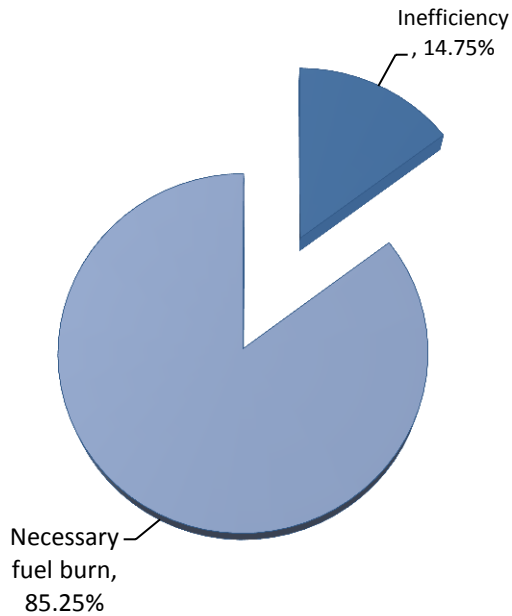




# Operational Efficiency in a Static ATM System up to 2040

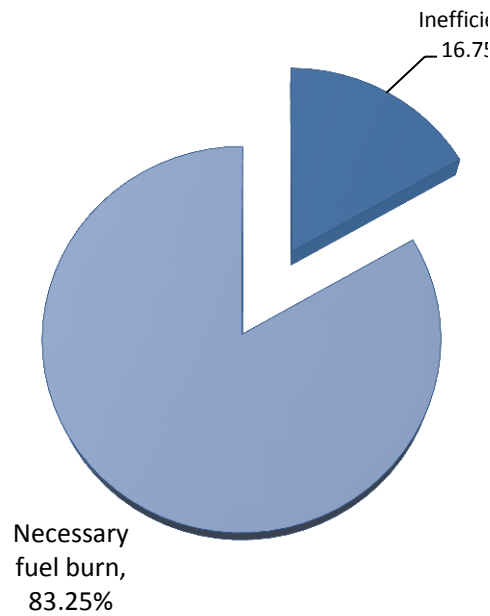
If no ATM improvements are made, system efficiency will degrade by 2% every decade.

### 2020



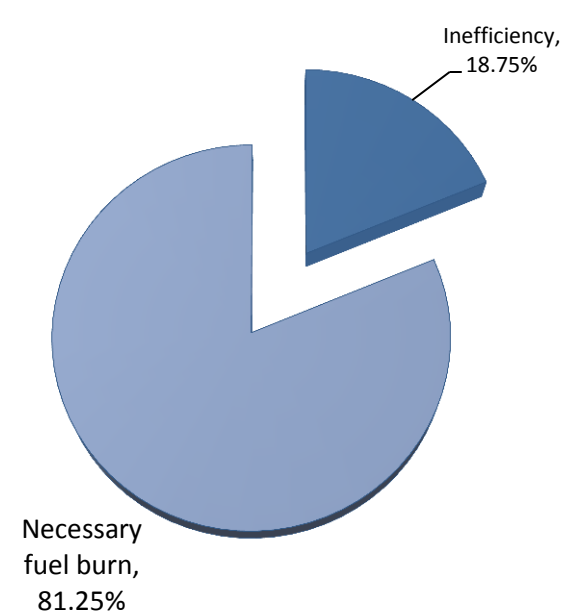
1.7x 2010 Operations

### 2030



2.7x 2010 Operations

### 2040

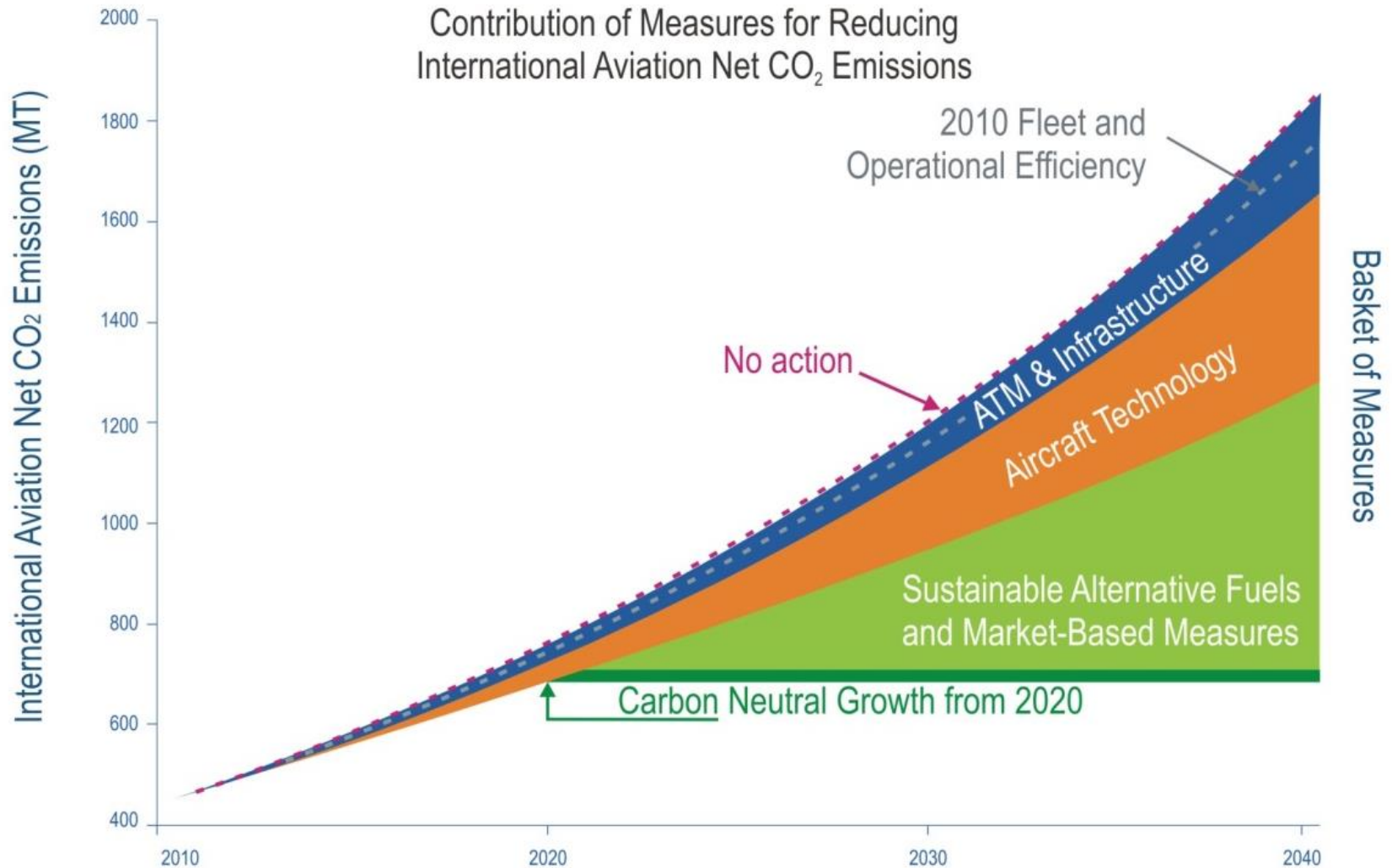


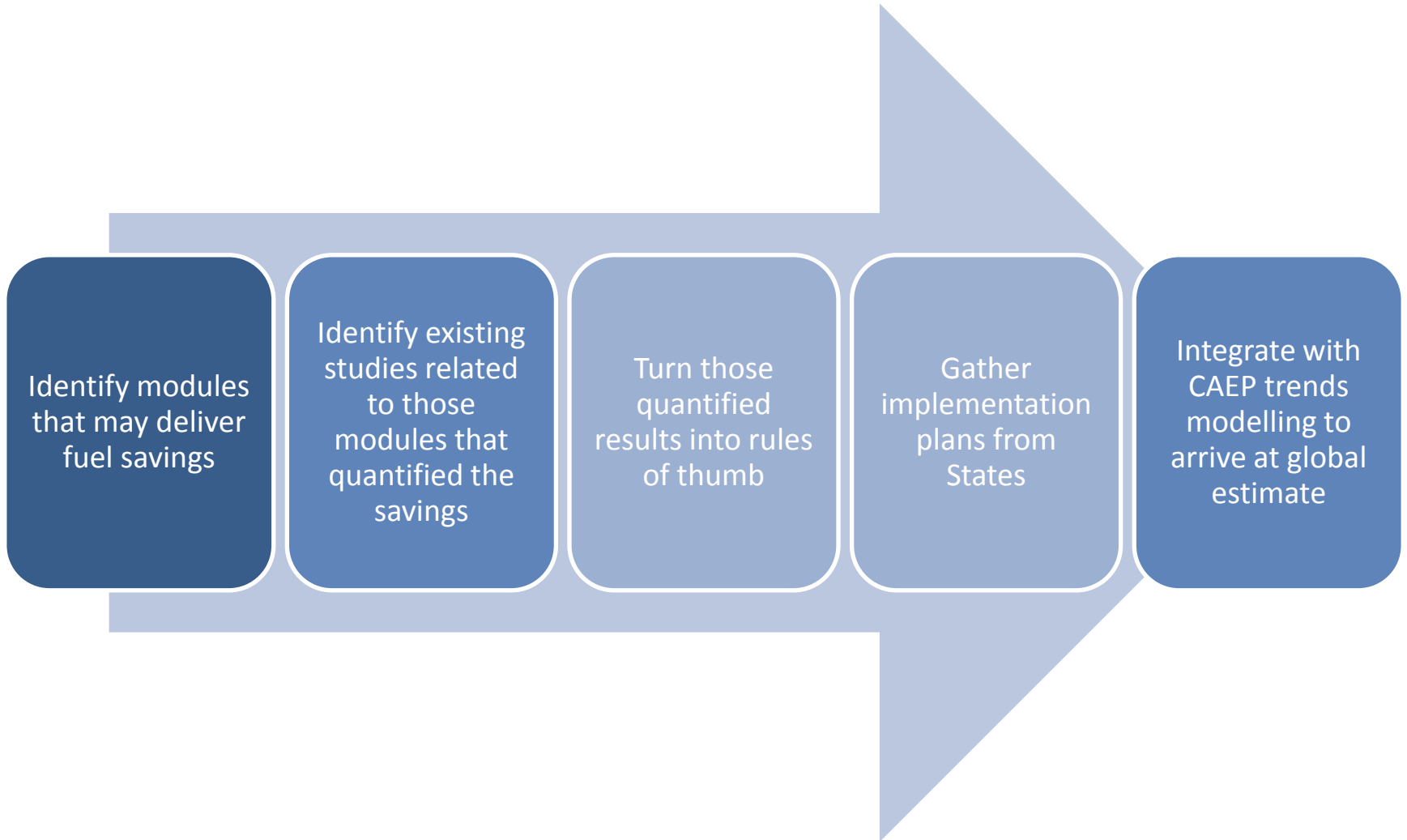
4.0x 2010 Operations

Source: IEOGG 2013 and CAEP/9 Forecast

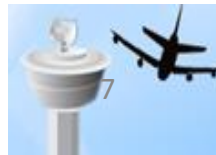


# CAEP International Aviation Net CO<sub>2</sub> Emissions Trends

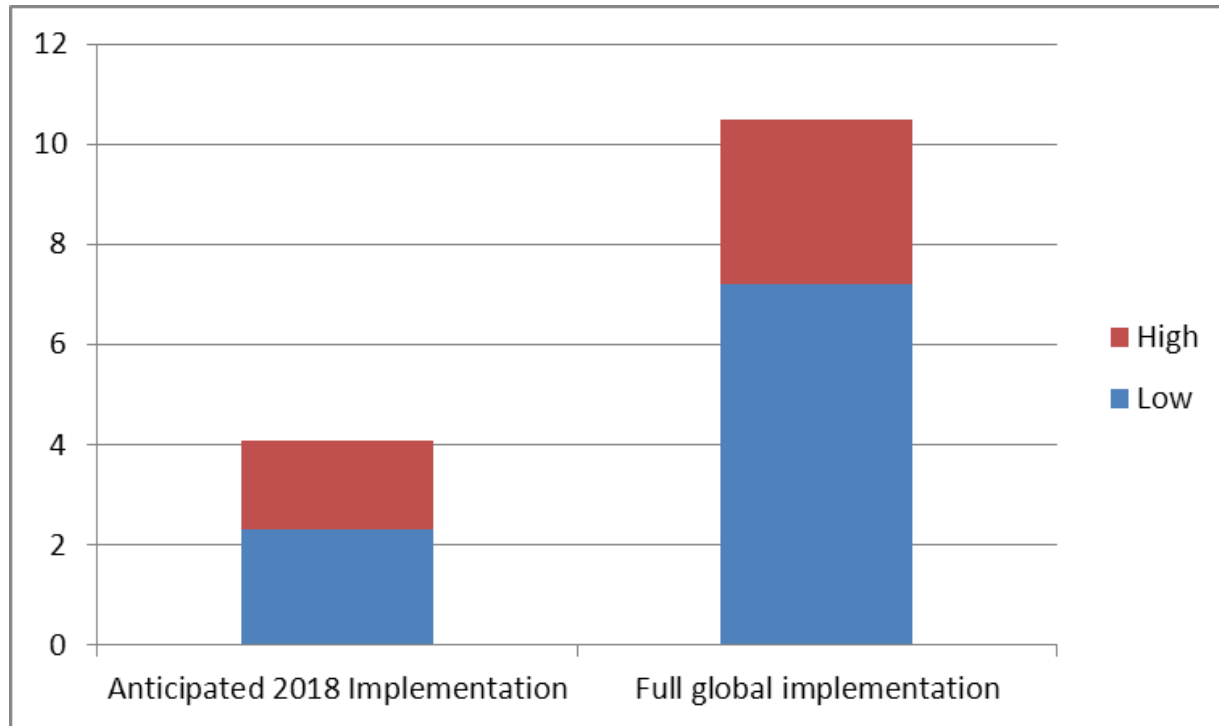




Module	Title	Benefits
<b>B0-CDO</b>	Continuous Descent Operations	<b>Reduced fuel burn on arrival</b>
<b>B0-FRTO</b>	Free Route Operations	<b>Reduced in-flight fuel burn</b>
<b>B0-RSEQ</b>	Runway Sequencing	<b>Reduced airborne holding and taxi-out time</b>
<b>B0-CCO</b>	Continuous Climb Operations	<b>Reduced fuel burn during climb</b>
<b>B0-NOPS</b>	Network Operations	<b>Reduced fuel burn in all phases of flight, including taxi</b>
<b>B0-TBO</b>	Trajectory Based Operations	<b>Reduced in-flight fuel burn</b>
<b>B0-WAKE</b>	Wake Turbulence Separation	<b>Reduced taxi-out time and reduced in-flight fuel burn</b>
<b>B0-ACDM</b>	Airport Collaborative Decision Making	<b>Reduced taxi-out time</b>
<b>B0-ASUR</b>	Alternative Surveillance	<b>Reduced in-flight fuel burn</b>
<b>B0-OPFL</b>	Optimum Flight Levels	<b>Reduced in-flight fuel burn</b>



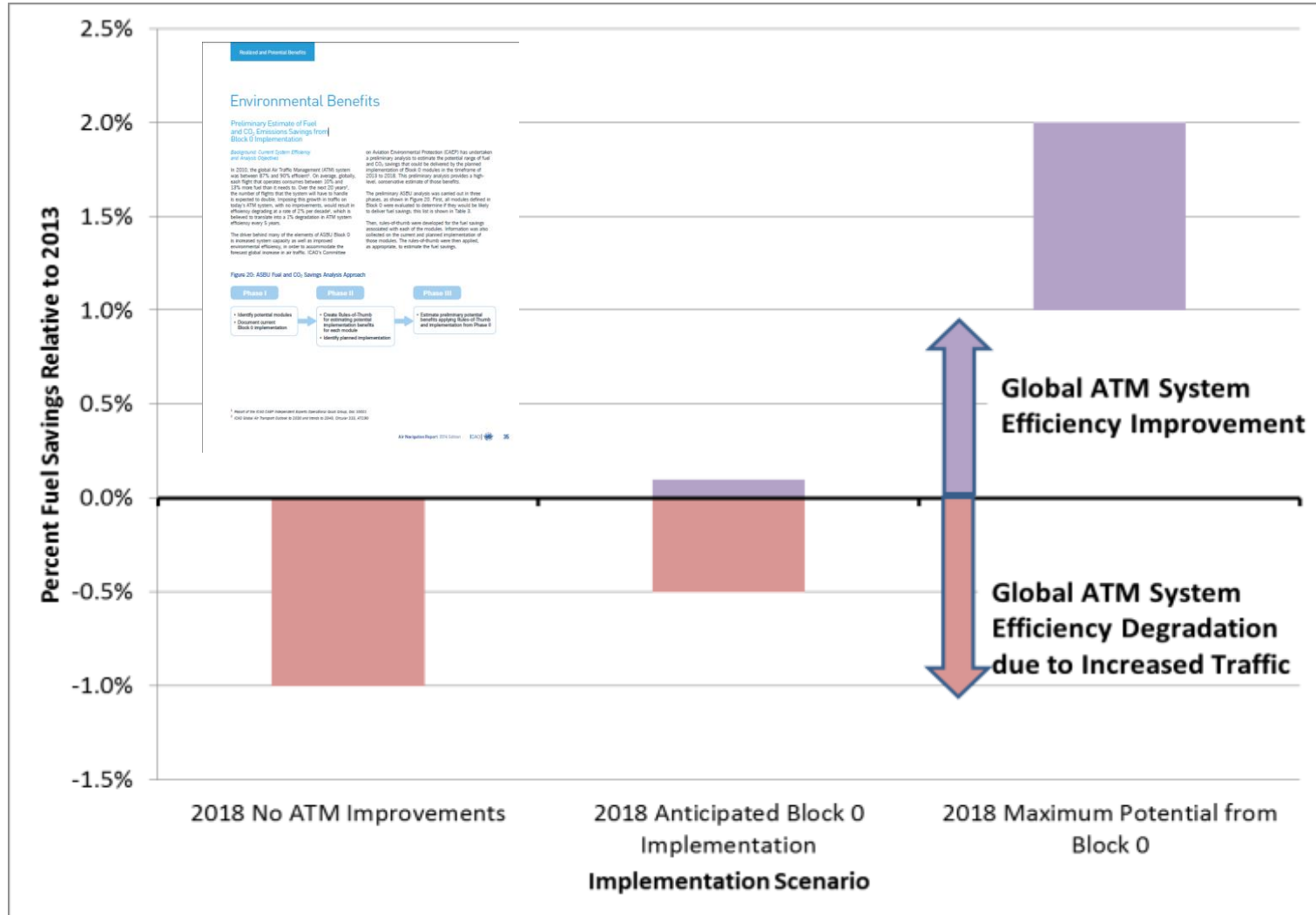


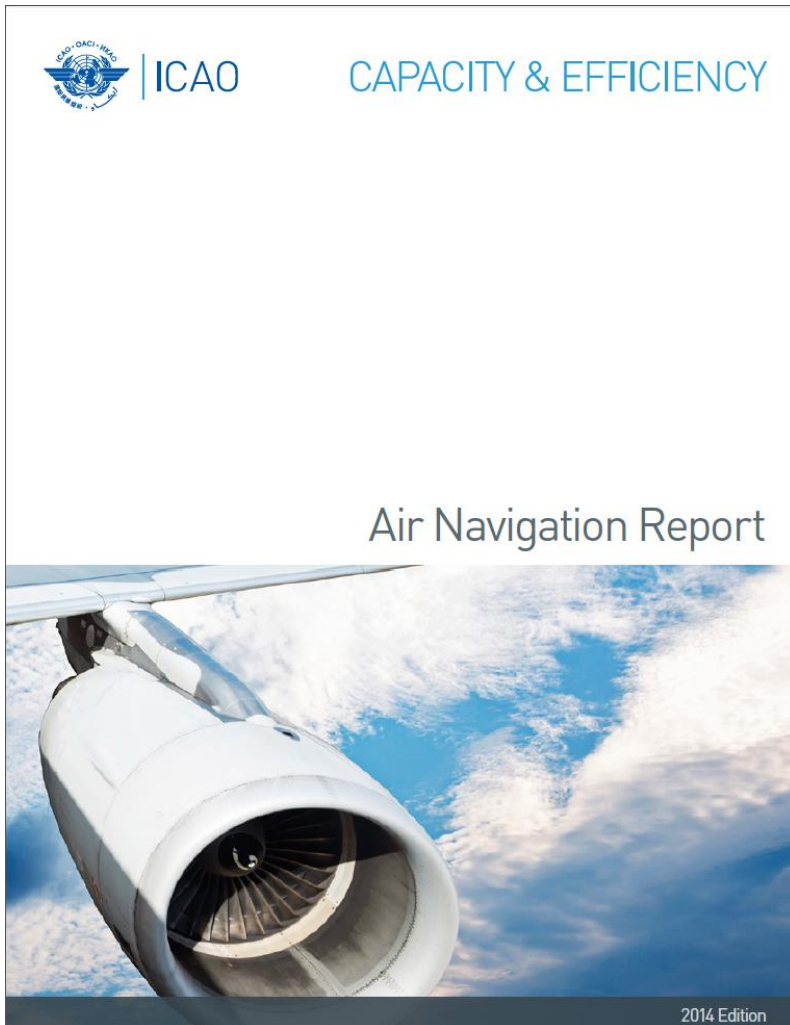


2018 Fuel Savings compared with 2013 Baseline (Mt)







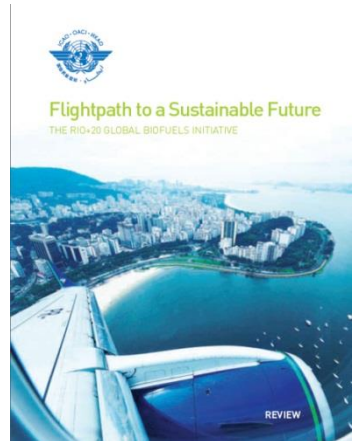
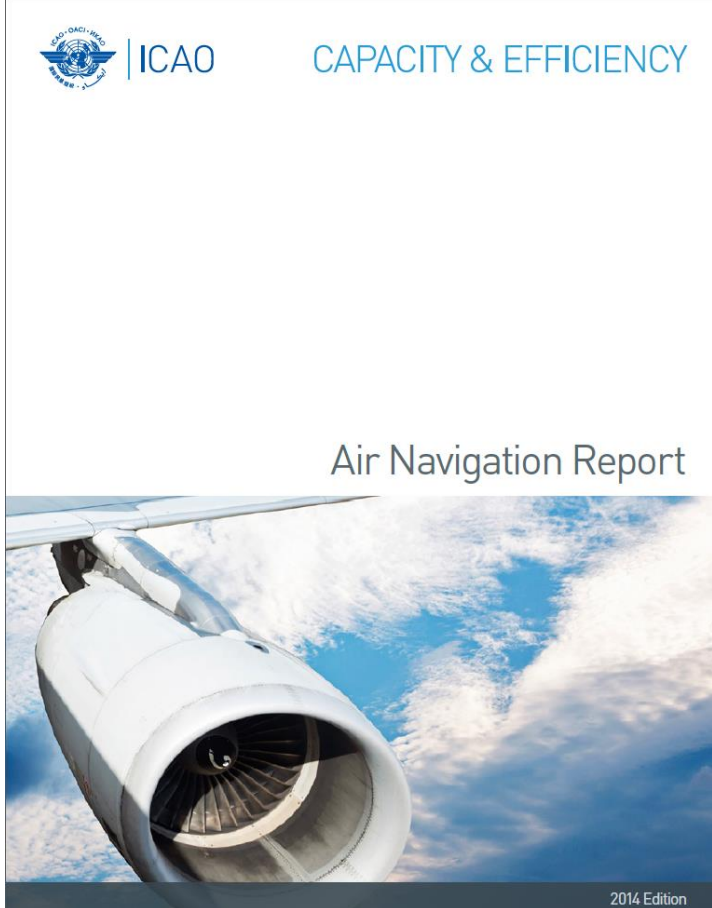
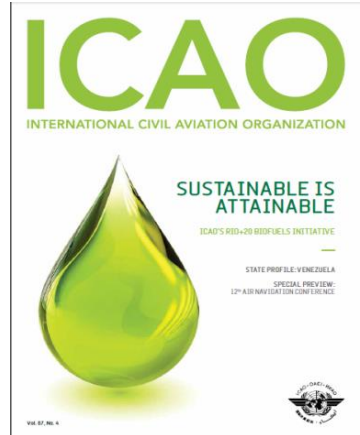
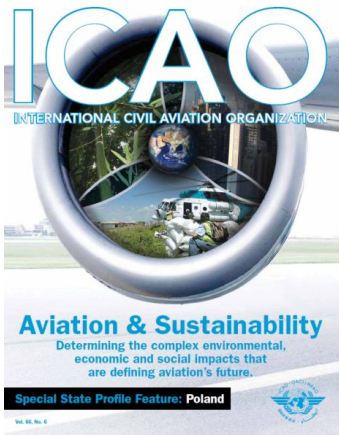


- Assuming a 1% degradation in ATM system efficiency in the absence of any action during the 2013-2018 timeframe...
- The implementation of ASBU Block 0 concept would **limit that degradation to 0.5%** with the possibility to provide a **net benefit in efficiency gains of 1.0 to 2.0%** based upon full global implementation of the Block 0 modules.



- Robust analysis of Block 0 – new modules added:
  - APTA (approach procedures including vertical guidance)
  - RSEQ (AMAN/DMAN)
  - SURF (A-SMGCS, ASDE-X)
  - FICE (increased efficiency through ground-ground integration)
  - DAIM (digital AIM)
  - AMET (Met information supporting enhanced operational efficiency)
- Preparing for Block 1 evaluation





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