

Air Navigation Service Providers and Climate Change

CANSO Presentation at UNFCCC Negotiations, Ghana August 2008

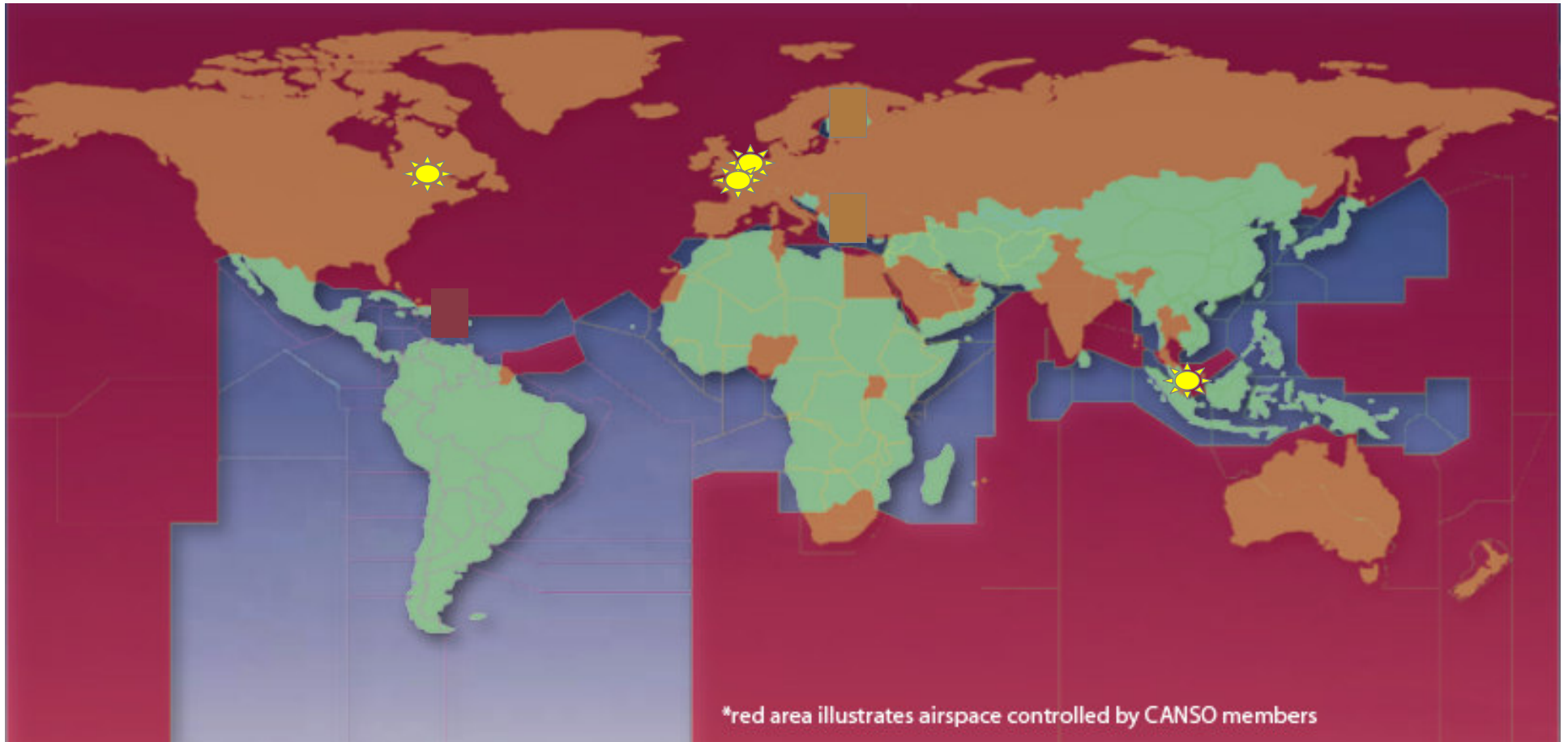
civil air navigation services organisation

THE GLOBAL VOICE OF ATM

Outline

- Air Traffic Management and CANSO
- Global benchmarking
- Current action
- Conclusions

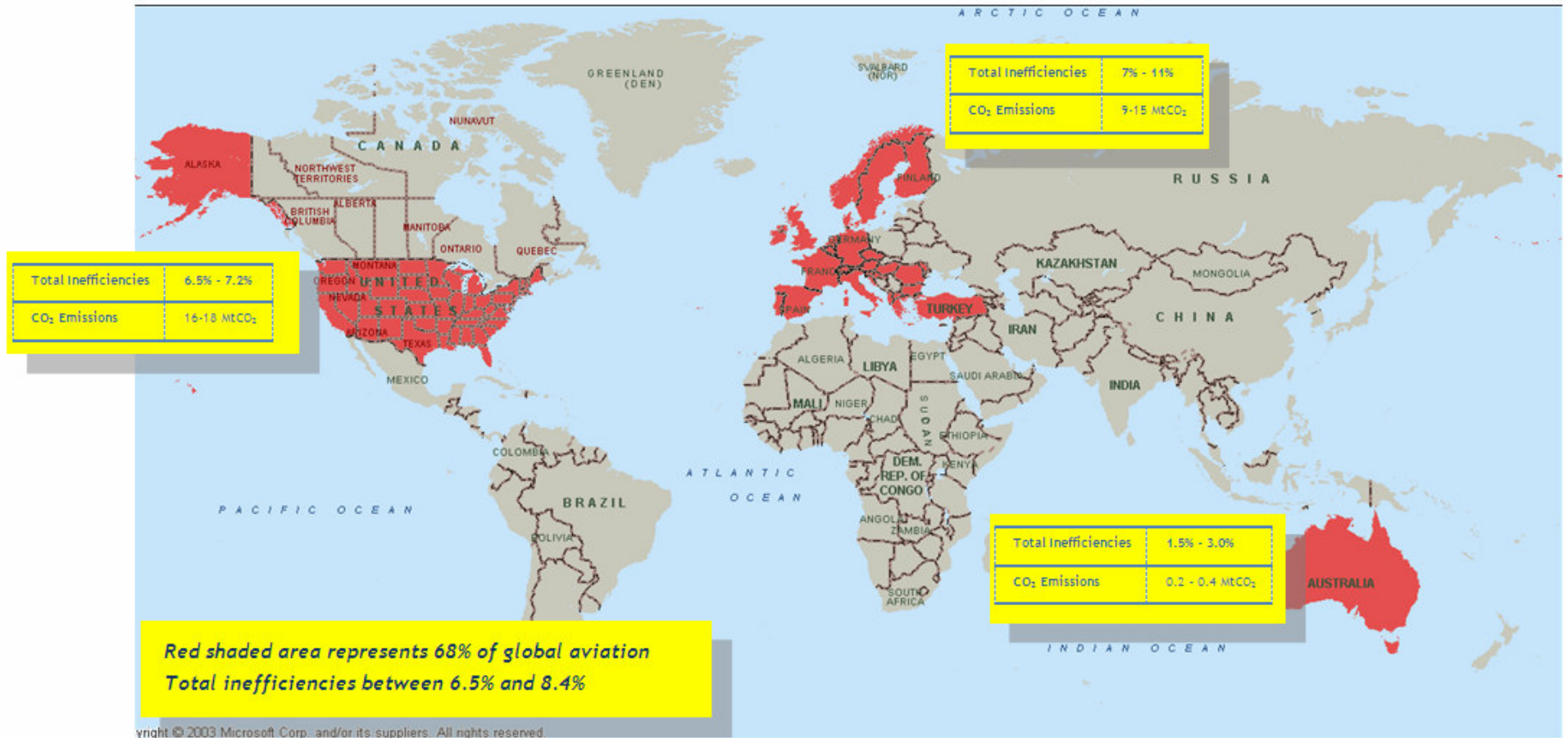
CANSO Members – August 2008



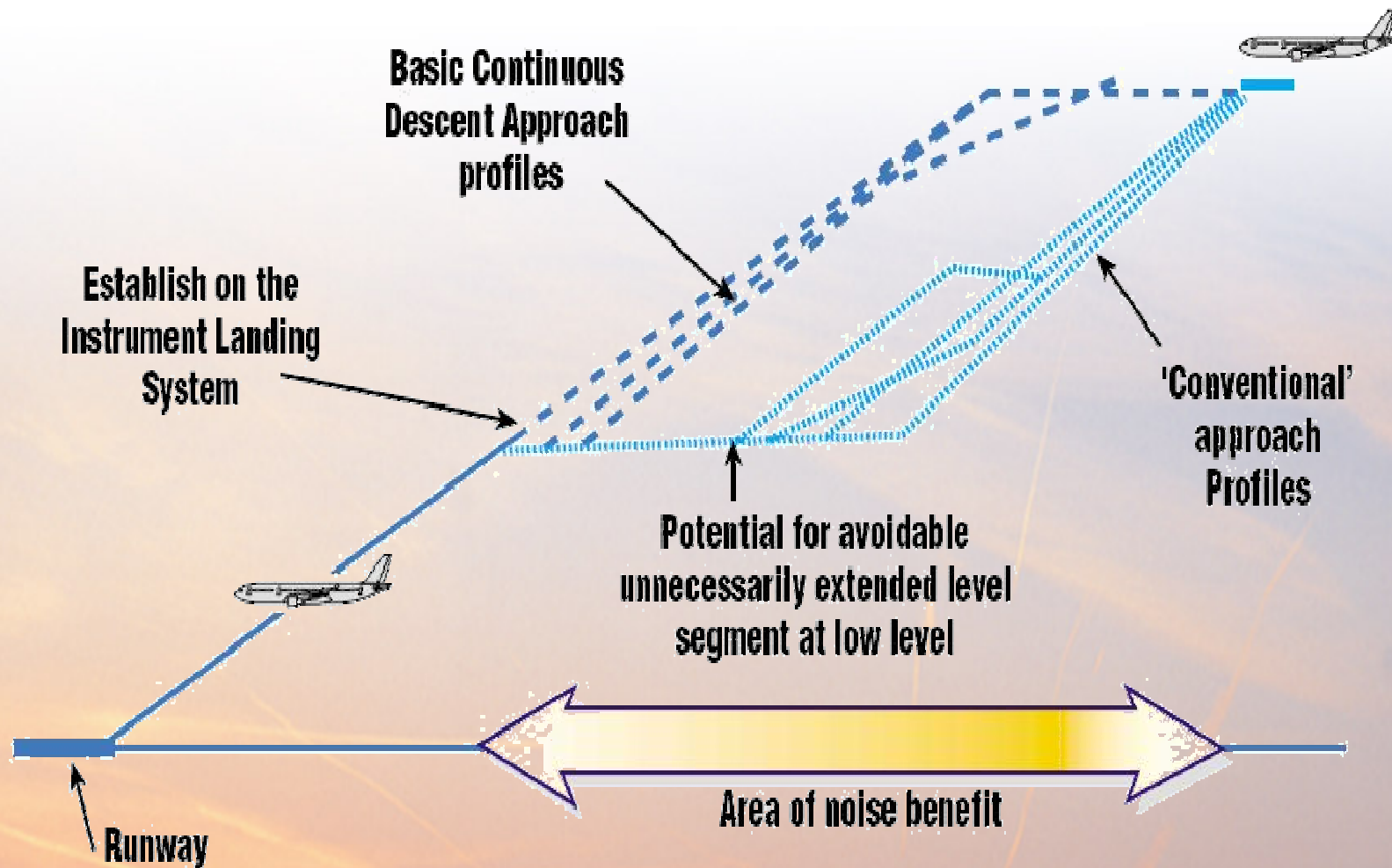
Air Traffic Management

- **A complex system with multiple players**
 - 1. States** – Owners of Airspace & Airspace Regulations
 - 2. Military** – National security & defence purposes
 - 3. Private & General aviation**
 - 4. Commercial Flight** – largest users, who finance the system
 - 5. ANSPs** – Airspace Managers = CANSO

CANSO Global Benchmark



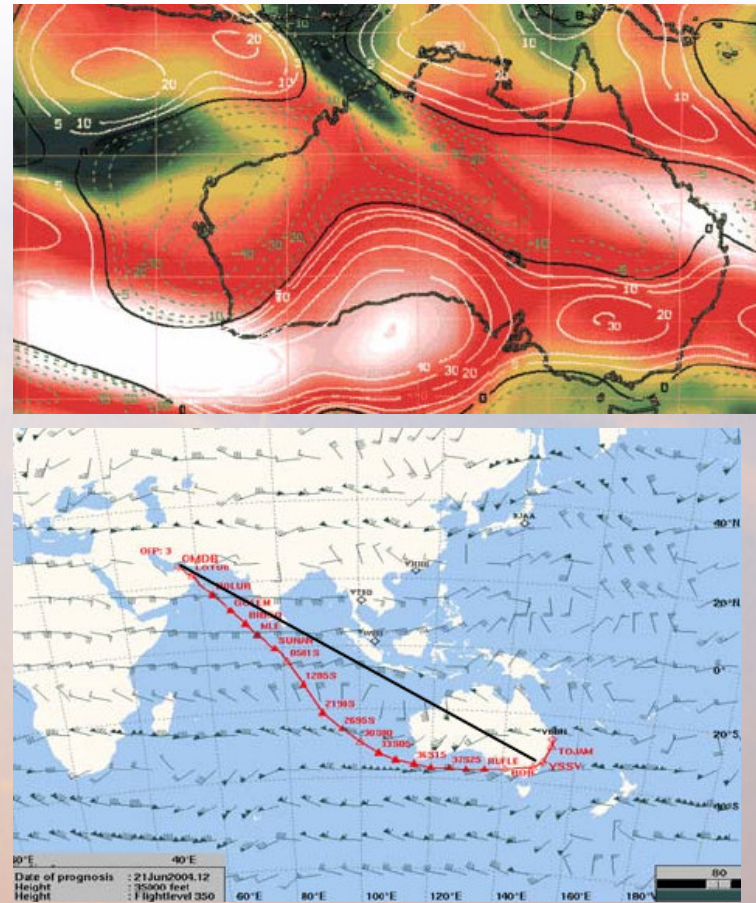
Action - CDA



- CDA – fuel, emissions and noise savings
- Reduced noise over the ground - *3-6dB*
- Reduced Emissions – 160 – 450 kg CO₂ per flight
- Huge potential across global fleet for CO₂ reduction
- European action plan to implement CDA at up to 100 airports by 2013
- Global guidance being produced through ICAO

Action - Flex Tracks

- In Australia, use of advanced metrological data allows route optimisation
- A 45 day trial resulted in a 1600 ton CO2 reduction
- Significant potential - one flight saw a fuel saving of 8408kg and 43 minutes reduction in flight time over the best fixed route.



Action – AIRE & ASPIRE

- ‘Atlantic Interoperability Initiative to Reduce Emissions’ and ‘Asia and South Pacific Initiative to Reduce Emissions’
- Aim is to hasten development of operational procedures to reduce aviation’s environmental footprint on a ‘gate-to-gate’ basis
- Accurately quantify environmental benefits
- Accelerate incorporation and worldwide interoperability of procedures/standards
- Capitalize on existing technology on either side of Atlantic and Pacific

Action - AIRE

Source: FAA

Optimization Sequence

Pre-Optimization
Flight profile

Optimization Tool
recalculates profile
on updated conditions

Oceanic Coordinator
trail seeks
Improved trajectory

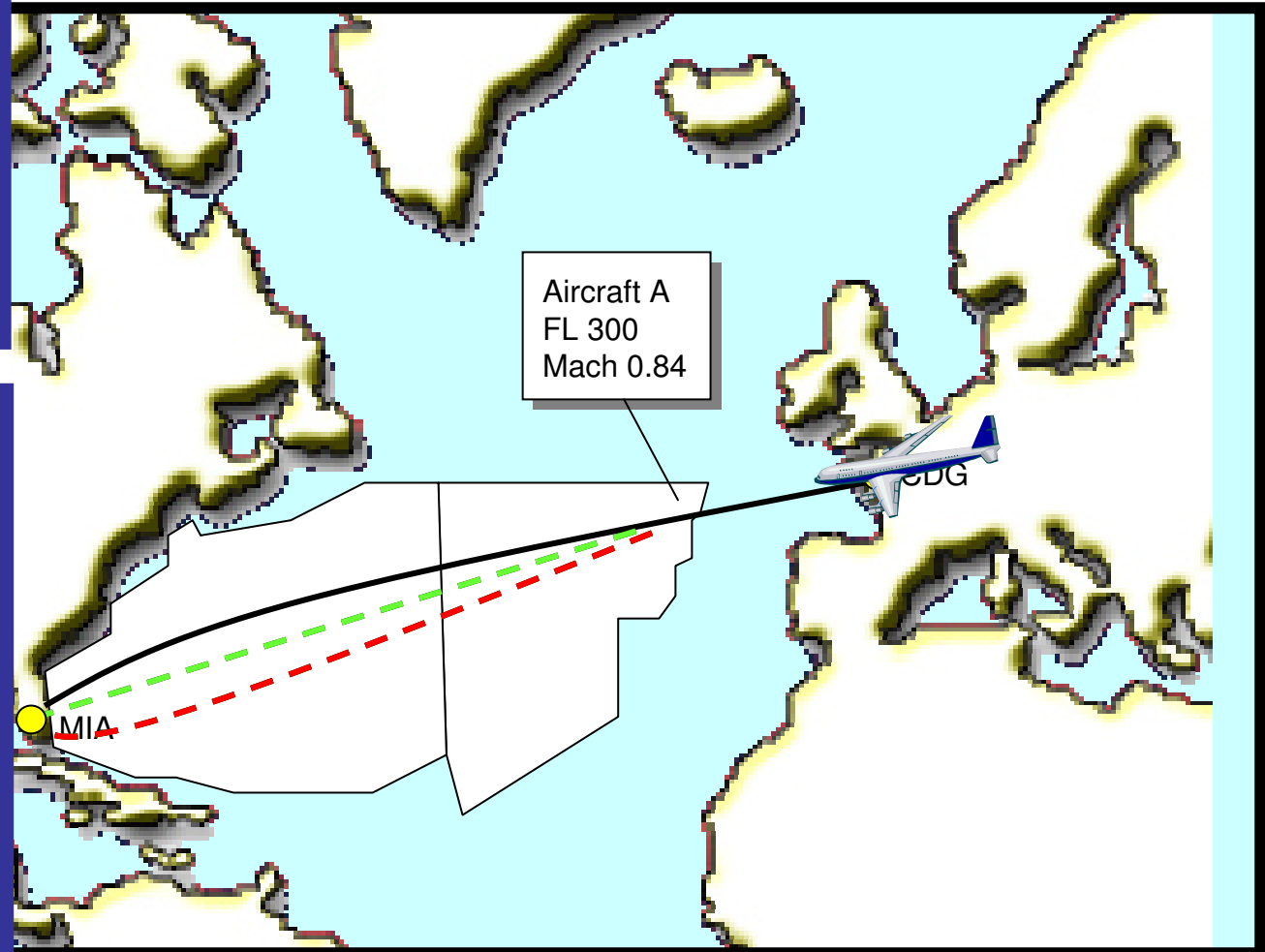
Profile Available:
Coordinator sends
new profile to
controller for clearance

Profile Not Available:
Coordinator trial
seeks alternatives
(Speed, Altitude, Route)

Alternative profile sent
to Flight Operations
for assessment

If alternative profile is
acceptable it is sent
to ATC for clearance

Coordination and Clearance Sequence



Sequences repeat at frequent interval (e.g. every 30 minutes)

Other Examples of Action

- Track shortening globally – ongoing efforts – 4 million tonnes of CO2 in 2007
- Track shortening – European network, potential 90,000 tonnes CO2 saved per 1km per flight
- Reduced Vertical Separation
 - In Europe saved 975,000 tonnes of CO2 annually when introduced
 - 1,099,106,962 and 12,296,623 projected in China and Algeria for 2008
- Flexible use of airspace – saving 535,000 tonnes CO2 per annum in Europe
- Flow management, saving 600,000 tonnes CO2 per annum in Europe
- SESAR (10% reduction) and NEXT Gen (absolute reduction despite growth) 2020 to 2025 timframes

Many examples of national and regional action coordination
ICAO leadership can consolidate at a global level

CANSO's Vision for 2010

- **Environment is a lead item for CANSO**
- **By 2010 CANSO will develop:**
 - Global Environmental Metrics
 - Targets for reductions in emissions & noise
 - Material to broaden understanding of ATM's impact
 - Practical Guides to Environmental Management Systems and environmental solutions for ANSPs



Conclusions

- **Infrastructural changes – air traffic management offer opportunities for improvements in aviation's CO2 performance**
- **Institutional and regulatory frameworks need to be in place to facilitate these improvements – ICAO has a lead role here**
- **CANSO action is in support of performance based ATM systems**
- **CANSO is engaged with ICAO (CAEP and GIACC) driving global benchmark, targets and solutions**
- **ICAO leadership can facilitate the development of collaborative global solutions – CANSO welcomes the opportunity to play its part**