

Continuous Improvement of the Global Air Traffic Management System



Nancy Graham – Director/Air Navigation Bureau
Vince Galotti – Chief/Air Traffic Management

Message



- Air traffic management contributes to the protection of the environment
- Global framework for ATM in place
- Successes
- Way forward
- Recommendations

Global ATM Operational Concept



- **Vision Statement**

- To achieve an interoperable global air traffic management system, for all users during all phases of flight, that meets agreed levels of safety, provides for optimum economic operations, is **environmentally sustainable** and meets national security requirements.

Measuring performance by meeting expectations



- Capacity
- Cost-effectiveness
- Efficiency
- **Environment**
- Safety
- Security



The ATM system shall:

- **Establish** and **monitor** agreed environmental performance targets to **ensure** that the expectations of society for the aviation industry contribute to the reduction of impacts on the environment, including noise and gaseous emissions



The ATM system shall:

- **Ensure** that environmental issues are considered in the design, development, and operation of all aspects of the ATM system

Global Air Navigation Plan



- Transition roadmap and tools for improving the ATM system
- Leads toward the ATM Operational Concept
- Contains Options for ATM improvements
- Results in direct performance enhancements
- Drives regional and national planning

Will be available on [GIACC web site](#)

Global Plan Initiatives



- Flexible use of airspace
- Air Traffic Flow Management
- Dynamic and flexible ATS route management
- Collaborative airspace design and management
- Terminal area design and management
- Aerodrome design and management
- Performance Based Navigation

CAR/SAM Regions (example of implementation planning)



- **IMPROVE DEMAND AND CAPACITY BALANCING**
- **Benefits**
 - **Environment**
 - Reductions in weather and traffic induced holding, leading to reduced fuel consumption and emissions
 - **Efficiency**
 - improved and smoother traffic flows;
 - improved operational efficiency;
 - enhanced airport capacity;
 - enhanced airspace capacity; and
 - **Safety**
 - improved safety verified through measurement

CAR/SAM Regions (example of implementation planning)



- **OPTIMIZE THE ATS ROUTE STRUCTURE IN BOTH TERMINAL AND EN-ROUTE AIRSPACE**
- **Benefits**
 - **Environment:**
 - reductions in fuel consumption
 - **Efficiency:**
 - ability of aircraft to conduct flight more closely to preferred trajectories;
 - increase in airspace capacity;
 - facilitate utilization of advanced technologies

Success

(Reduced Vertical Separation Minima)



Projected for 2008

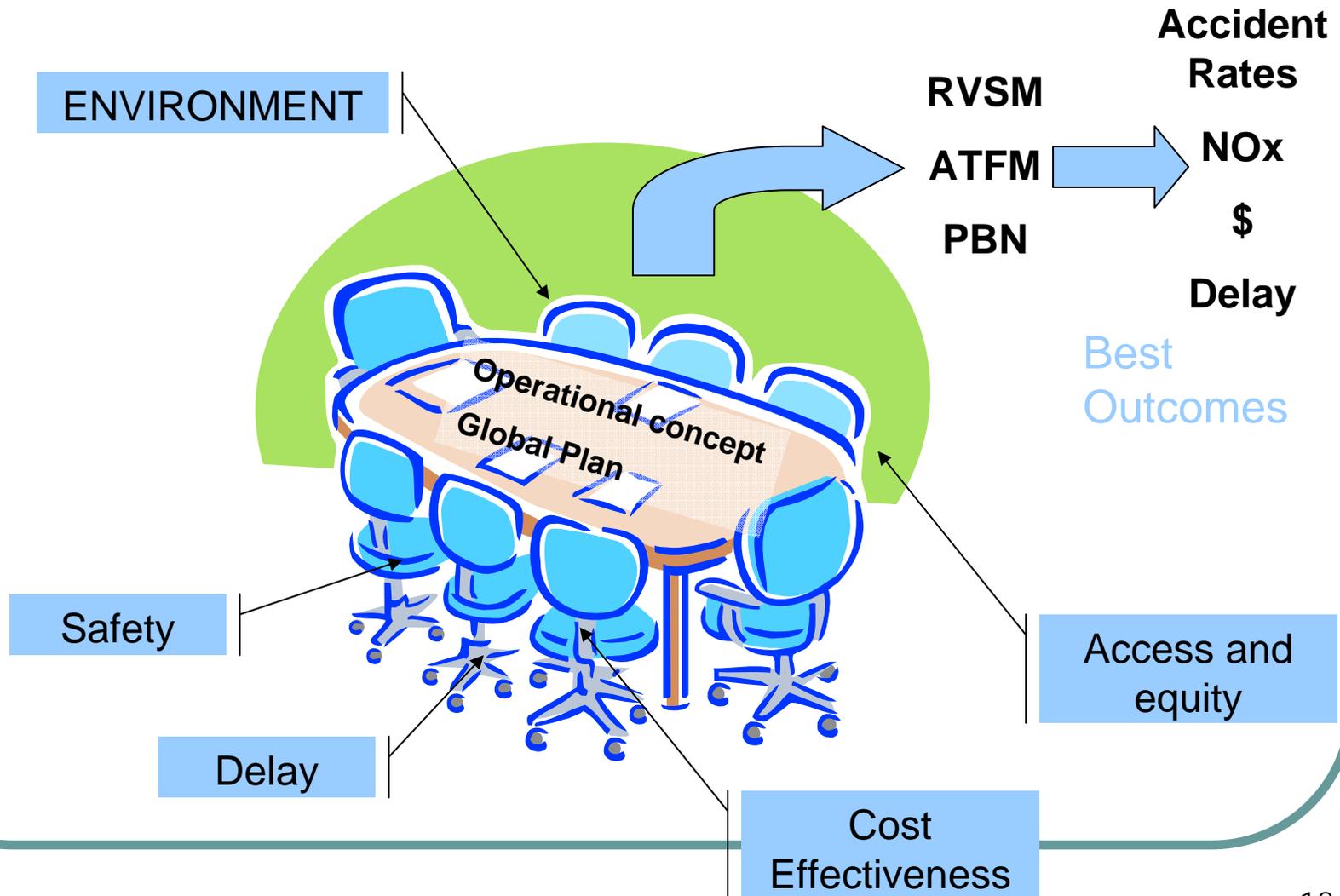
RVSM	FUEL (kg)	CO₂ (kg)	USD\$
China	344,871,968	1,099,106,962	\$248,307,817
Algeria	3,864,432	12,296,623	\$3,014,257

Way forward (Outcomes and Inter-relationships)



- An important lesson learned from the success of RVSM is that improving efficiency leads to environmental benefits.
- We should therefore continue working within the established common performance framework towards establishing environmental and efficiency targets and developing the methods to measure outcomes

Way forward (Outcomes and Inter-relationships)



Recommendations



- Support implementation of the Assembly approved ICAO Global Air Navigation Plan and its ATM global initiatives within this existing framework. This is the most expedient way to generate environmental benefits
- Work toward removal of **major impediments** to improving the global ATM system:
 - Encourage the organization and management of airspace based on **operational requirements** as opposed to **national and political boundaries**
 - Encourage **militaries to cooperate with civil authorities** so that airspace may be much more efficiently used
 - Encourage states to make funding available for **local ATM** improvements which should be based on clearly **established performance requirements**

Recommendations



- Ensure that environmental experts are involved at an early stage in the design, development, implementation and operation of ATM systems, procedures and programmes
- Establish a process and identify resources to measure environmental benefits of ATM improvements globally, regionally and locally. Establish a clearinghouse for the information