



Global Air Navigation System

~ Planning Mechanisms ~

H.V. SUDARSHAN, Technical Officer
International Civil Aviation Organization

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Overview

- Global ATM system
- Planning by partners
- Global/Regional/National level
- Subregional/Multinational approach
- Other Planning Mechanisms
 - Homogeneous ATM areas
 - Major Air Traffic Flows
- Implementation Strategy

Global ATM System

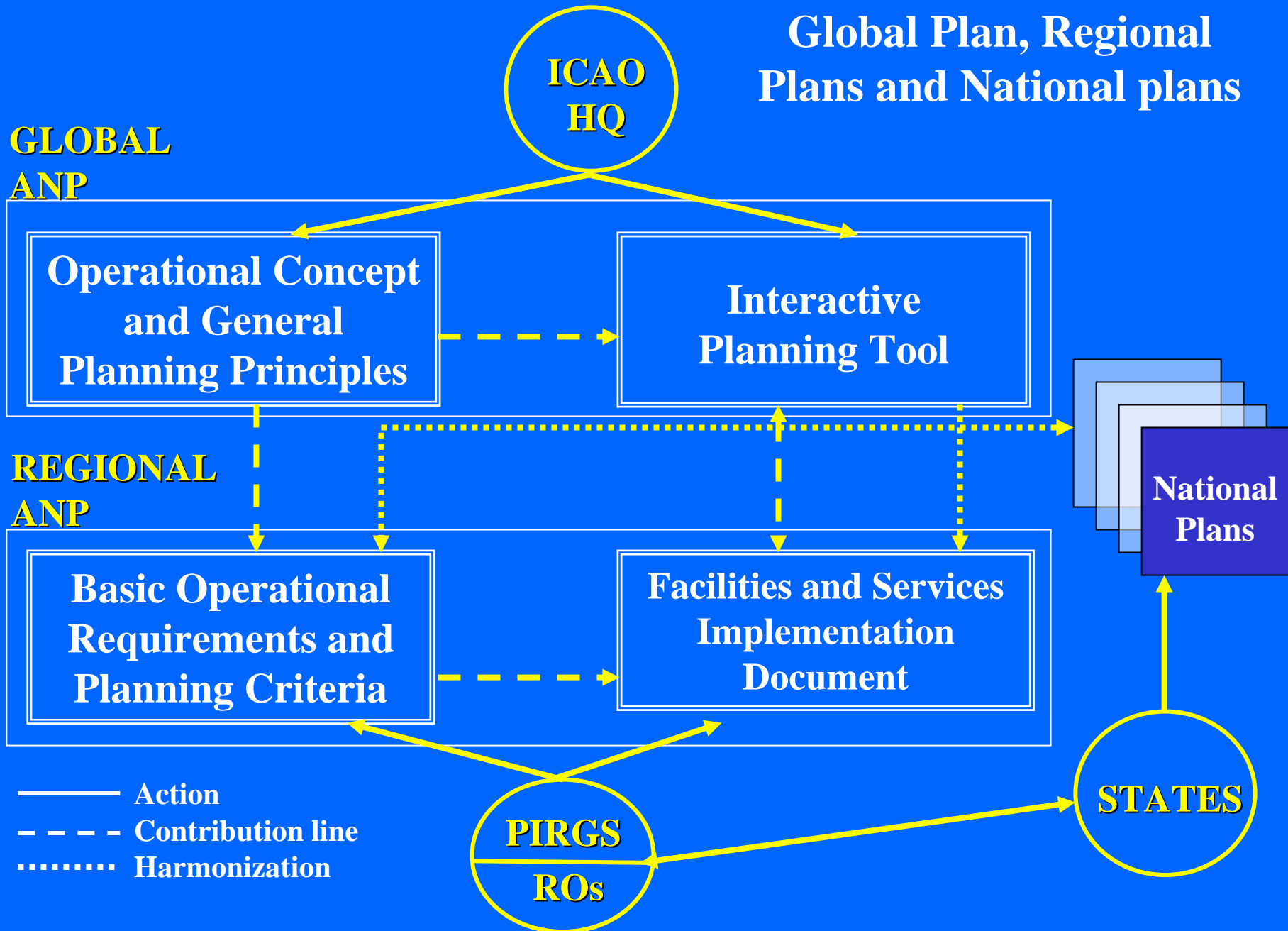
- It is a worldwide system
 - Meets agreed levels of safety
 - Provides for optimum economic operations
 - Environmentally sustainable
 - Meets national security requirements
 - Provides seamlessness for all users during all phases of flight
- Achieves seamlessness through
 - Homogeneous ATM areas and Major Traffic flows
 - Interoperability (common requirements, Standards and procedures) and harmonization (tools and timing)
 - Performance based equipment carriage

Planning Approach...

Partners	Planning Levels	Deliverables	Guidance
ICAO	Global	Global plan	ICAO policy
Regional planning groups	Regional	Regional plan	Global plan
Subregional/ or Multinational groups	Subregional or Multinational	Subregional plan or Multinational	Regional plan
States	National	National plan	Regional plan

Planning Approach

Partners	Planning Levels	Deliverables	Guidance
Airspace users	Regional, national	User-driven plan	Regional and national plans
Service providers	Global, regional, national	Service-provider plan	Global, regional and national plans
Industry	Global, regional, national	Manufacturer plan	Global, regional and national plans

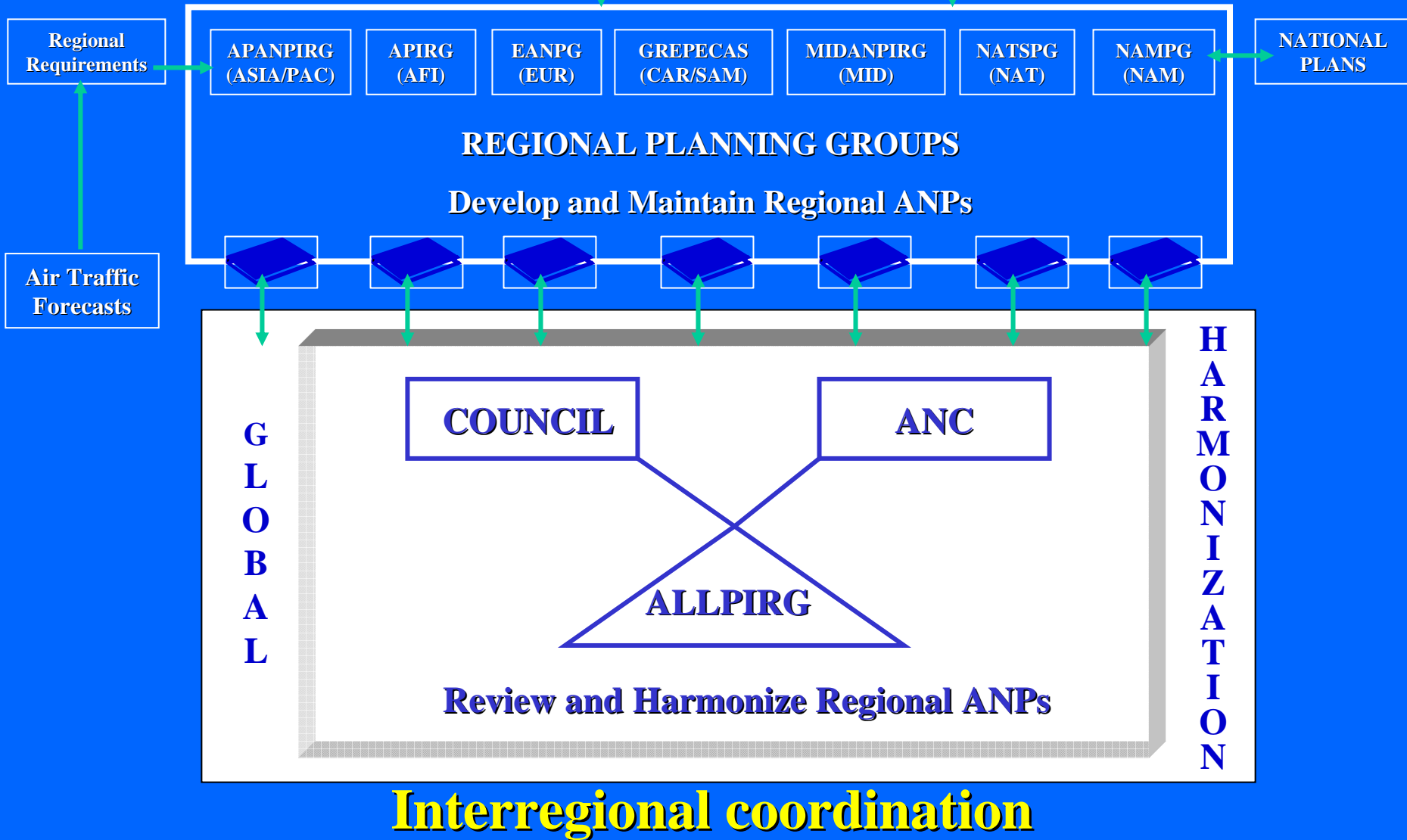




Planning process at the regional level

GLOBAL GUIDANCE

Global Plan , SARPS, PANS, Guidance Material



Subregional/ Multinational approach ...

- **Calls for political will**
- **Common goals in terms of ATM objectives and/or CNS requirements**
- **Not necessarily adjoining or cross-border**
- **Provides integration, rationalization and harmonization of systems and procedures**
- **Reduces equipage and maintenance costs**
- **Facilitates financing**

Subregional/ Multinational approach ...

- Envelops multiple States/regions
- Infrastructure establishment by a multinational group, service providers or State(s)
- Operational management rests with multinational group, service providers or State(s)
- Better utilization of combined and unified airspace

Subregional/ Multinational approach

- Early benefits to airspace users and States
- Lends itself to a business case
- User charges is one means of cost recovery; will also serve as a source of repayment
- Possible to establish joint charges collection agency
- Based on Homogenous ATM area
- Examples: Eurocontrol; ASECNA; and COSESNA

Other planning mechanisms

- **Planning based on Homogenous ATM areas**
- **Planning based on Major Traffic Flows.**

Planning based on homogeneous ATM areas and major traffic flows ...

Homogeneous ATM areas

An airspace with a common ATM interest based on similar characteristics of traffic density, complexity, air navigation infrastructure requirements or other specified considerations, wherein a common detailed plan fosters the implementation of interoperable CNS/ATM systems.

They may extend over States, specific portions of States or groupings of smaller States. They may include large oceanic and continental en route areas.

Homogeneous ATM areas – some examples



Planning based on homogeneous ATM areas and major traffic flows

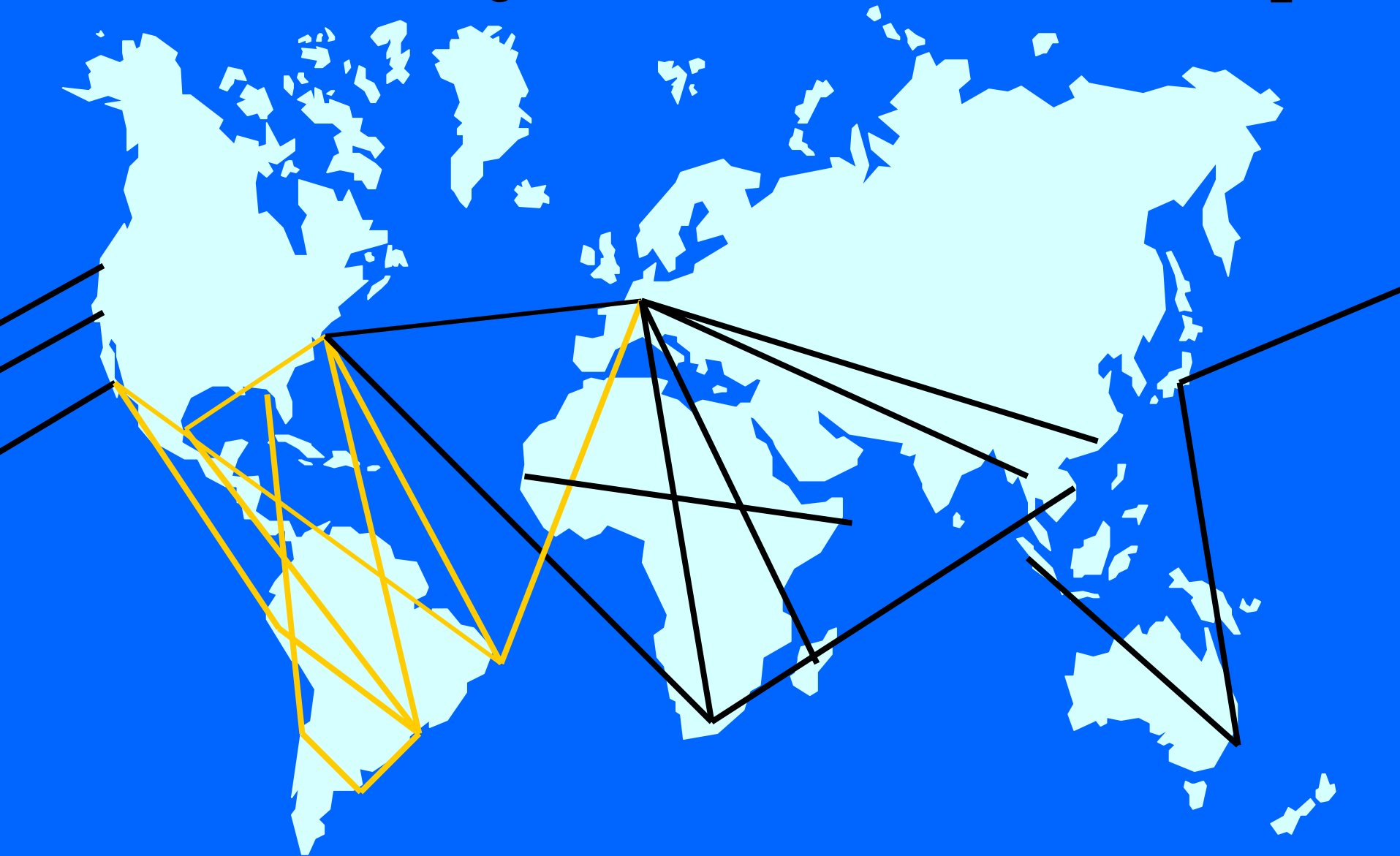
Major traffic flows

Major traffic flow: A concentration of significant volumes of air traffic on the same or proximate flight trajectories.

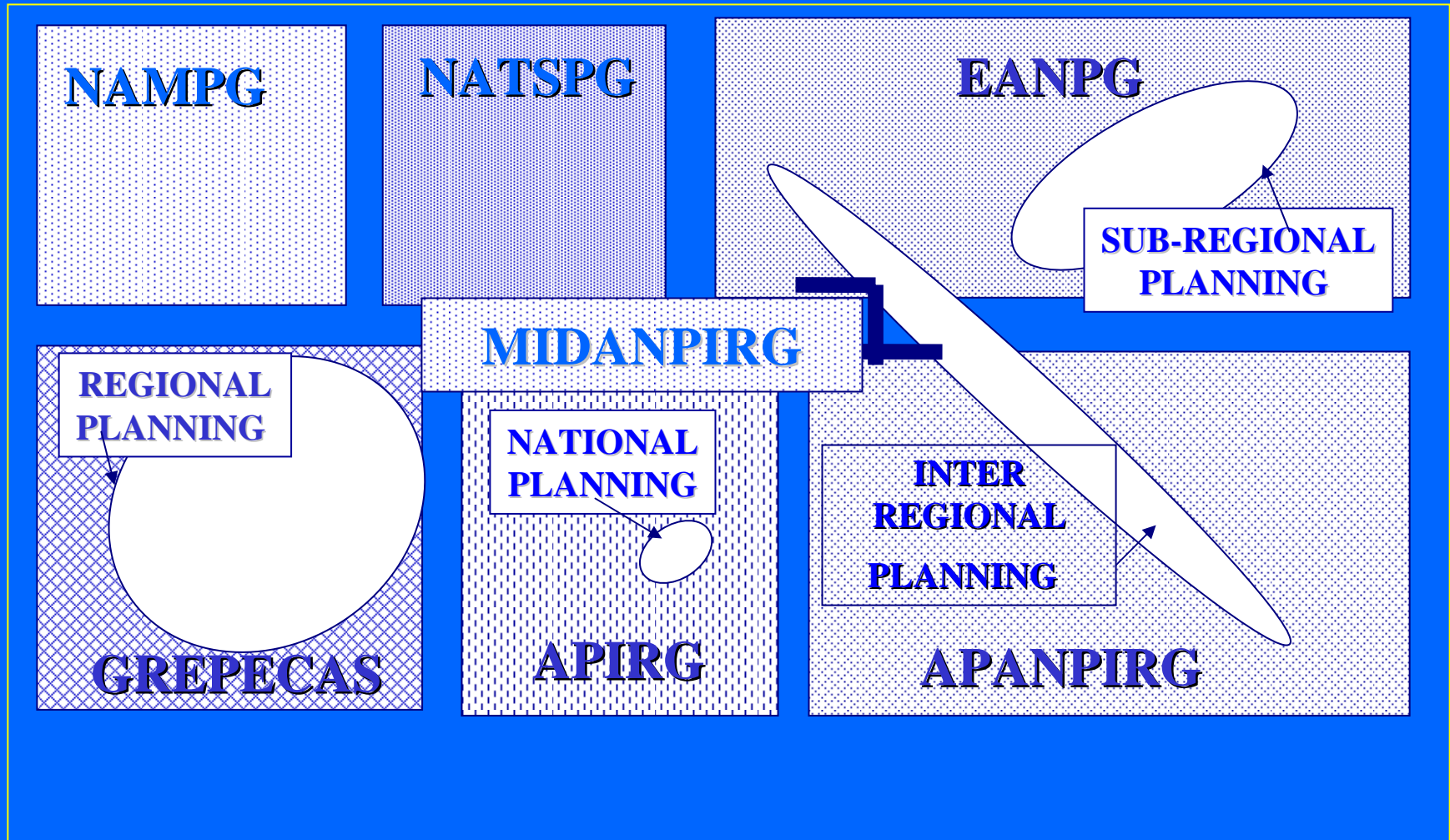
Note: Major traffic flows may cross several homogeneous ATM areas with different characteristics

Routing area: A defined area encompassing one or more major traffic flows

World major traffic flows – example



Major traffic flows



Interface issues

Major traffic flow approach ...

- May include various types of airspace; oceanic, continental en route and terminal areas
- Common goals in terms of ATM objectives and/or CNS requirements
- Early benefits to airspace users and States

Major traffic flow approach ...

- **Envelops multiple States and/or regions**
- **Involves consideration of air navigation infrastructure, traffic density and airspace users' needs**
- **Necessarily adjoining or cross-border for it to be a part of the traffic flow**
- **Has interoperable CNS systems**

Major traffic flow approach ...

- **Absorbs gate-to-gate concept**
- **Establishment of infrastructure could be by a multinational group, ANS provider or State(s)**
- **Provides integration, rationalization and harmonization of systems and procedures**

Major traffic flow approach ...

- **Facilitates financing**
- **Operational management rests with multinational group, ANS providers or State(s)**
- **Lends itself to a business case; consequently, it is easier to fund the project**

Major traffic flow approach

- User charges is one of the means of cost recovery and will also serve as a source of repayment
- Possible to establish a joint charges collection agency

Examples of implementation based on major traffic flow approach

- **Implementation RVSM from Asia to Europe via south of the Himalayas, through the Middle East, effective 23 November 2003; and**
- **RVSM implementation in the Europe/South America corridor, through the Africa-Indian Ocean Region, effective 24 January 2002**

Approach to implementation...

➤ The approach to implementation is on the basis of:

- progress already achieved
- experience gained by PIRGs and States in the previous cycle of air navigation systems implementation process
- existing capabilities of the air navigation systems

Approach to implementation

- **23 GPIs identified for addressing short- and medium-term requirements**
- **All GPIs are being implemented by PIRGs and States in different degrees and different time frames**

Implementation strategy

- A collective commitment of all participating/ concerned entities in the State
- Air navigation systems to be introduced in evolutionary stages, with progressive development of technology and procedures
- High-risk approach associated with a “big bang” implementation to be prevented
- Framework must include an integrated approach, encompassing all elements of air navigation systems, such as technical, operational, economical and institutional issues

Implementation strategy

- Current ATM operations not be effected
- During the transition and implementation stages, no degradation in the level of safety
- Must be a continuous interface with adjacent areas/cross-border States/States within the region to ensure coordinated implementation and consistency of ATM services

SUMMARY

- **Discussed planning mechanisms**
 - **Global, Regional, Subregional, and National level**
 - **Planning based on Homogeneous ATM areas and Major Traffic Flows**
- **Reviewed Implementation Strategy**

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