Global Air Navigation Performance

EUROCONTROL Seminar:
Driving Excellence in ATM Performance
What is our Common Goal?

Air Traffic Flow Chart 2030

Safe  Efficient

Secure  Sustainable

Supporting Global Economic Development
Global Air traffic is predicted to **double** in the next 15 years.

Our collective responsibility is to **support the aviation system** to safely realize this growth.
"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"
2014 – 2016 GLOBAL AVIATION SAFETY PLAN (GASP)

• Establishes the global safety priorities and GASP objectives
• Provides a planning framework, timelines and guidance material
• Presents implementation strategies and a global aviation safety roadmap

GLOBAL AVIATION SAFETY ROADMAP
ICAO Safety Audit Results for RASG-APAC

Effective implementation of safety oversight systems by State

Regional Averages (EI%) from Jan 2011 to Jul 2016

- World: 59% to 64% (+5%)
- RASG-AFI: 37% to 47% (+10%)
- RASG-APAC: 60% to 59% (-1%)
- RASG-EUR: 70% to 74% (+4%)
- RASG-PA: 65% to 70% (+5%)
- RASG-MID: 67% to 68% (+1%)
The three high-risk accident categories (RS, CFIT, LOC-I) account for 61% per cent of all fatalities worldwide.

Over half of the accidents worldwide involved runway safety events.

CFIT and LOC-I accidents accounted for less than 6% of all accidents, but accounted for over 50% of all the fatalities worldwide.
Aviation and Economic Development

States can only access the economic benefits of aviation if the system is safe, secure, and sustainable.

10% ↑ EL could generate

1.8% ↑ a/c departures
ICAO’s Role in ATM Modernization

“Increase the capacity and improve the efficiency of the global civil aviation system”

- Through the GANP, offer a long-term vision to assist all aviation stakeholders, and ensure continuity and harmonization among modernization programmes.
- Through the Aviation System Block Upgrades (ASBU), provide a consensus-driven modernization strategy for integrated planning.
GANP EVOLUTION:

The Plan should be Stable to provide Certainty and Dynamic enough to adapt to changing Reality
Sharing Global Ambition

• Global Performance targets
  – Safety: 50% reduction in accident risk per flight
  – Air Navigation Capacity and Efficiency: Average yearly growth of 5% together with efficiency improvement of the global system
  – Economic Development of Air Transport: Foster the development of a sound and economically-viable civil aviation system
  – Environmental Protection: Contribute to minimize the adverse environmental effects of civil aviation activities

• Promotion

• Education
  – ATM System Architecture
How can we support the predicted growth?

- *Innovation* starts on the flight deck, at the control position and on the tarmac
  - People using the tools are the first to know how they can be improved
Timeliness and Multiple actors

- Performance of the aviation system depends upon the capacity of actors to act in cohesion.

- A real need for a coordinated approach.
  - Actions from all for a global or common benefit.

- Aircraft Manufacturing: 15 Y+ 30Y life time
- Rule Making process: 2 Y
- Continuous support
  - Buy, Train, Operate: 3 Y
  - Buy, Train, Operate: 5 Y
  - Buy, Train, Operate: 3 Y

- ICAO?
Incentivizing or Mandating?

ATM Global Benefit

Incentive?  □□

Mandate?

Best Capable Best Served
Best Capable Less Paid
Less Equipped Still Served?
...

80%?

Benefits in ATM go with equipage homogeneity
What is for me in the ICAO GANP?

Roadmaps assist States in their implementation of the Global Plans

Safety and Air Navigation Reporting

Actions and Evolutionary Steps IDENTIFICATION

Local and Regional Plan

COMPREHENSION

My Situation

PIRG

GANP

!!

Safety and Air Navigation Reporting

Roadmaps assist States in their implementation of the Global Plans
Regional and Sub-Regional Dynamics

- Ambition Sharing
- Decision-Making
  - Operational Route Network
  - Consistent Planning
  - Common Services
  - Interfacing
- Cost-Benefit Analysis
- Mandates
- Challenges and Best-Practices
- Inter-Regional Coordination
- Benchmarking
Low Density
Large/Complex Airspace

High Density
Large/Complex Airspace

Low Density
Small/Simple Airspace

High Density
Small/Simple Airspace

Complex/possible to Install-Maintain
GANP Performance-based Approach

• The Goal
  – Share performance issues and best practices at a global level
  – Develop business cases for ASBU Module implementation with investment based on KPIs
  – Determine timeliness and appropriateness of ASBU Module deployment to a performance-driven approach
  – Manage readiness of ASBU Modules for deployment
  – Measure and document the performance benefits brought by the implemented Modules
GANP Performance-based Approach

• A phased development approach for ICAO
  – Until 2019
    • Agreement on a simple set of Key Performance Indicators (KPIs), based on existing best practices in more mature regions that have already published performance information and on ICAO publications;
    • Initial development of guidance material, illustrating the benefits of a performance-based approach and explaining the data collection, calculation and analysis required for the selected KPIs.
  – Until 2022
    • Illustrate links between ASBU Modules and KPIs and exchange of experience and best practices at regional and subregional levels;
    • Update of performance related ICAO manuals (Doc 9883 and Doc 9161) and development of additional guidance material on data collection, data analysis, etc.;
    • Define a global performance baseline, based on States' performance monitoring and reporting, against which future progress will be measured.
  – 2022 and beyond
    • Standardization of performance data and enhanced data exchanges to automate and reduce the cost of performance data collection and processing. This work could benefit from existing work on exchange models.
• A phased Implementation Approach for States
  – Start or Continue to define a Performance Driven Implementation Path
  – In case of non-mature data collection, start with a qualitative expert analysis and develop by policy statements
  – As soon as possible, implement a quantitative approach
  – Contribute to the Global ICAO Approach
GANP Performance-based Approach

- **Potential Key performance indicators**

<table>
<thead>
<tr>
<th>KPA</th>
<th>Efficiency</th>
<th>Capacity</th>
<th>Predictability</th>
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<tbody>
<tr>
<td></td>
<td><strong>Focus Area(s)</strong></td>
<td><strong>Capacity, throughput &amp; utilization</strong></td>
<td><strong>Capacity shortfall &amp; associated delay</strong></td>
</tr>
<tr>
<td>Core KPIs</td>
<td>Additional flight time &amp; distance</td>
<td>KPI09 Airport Peak Arrival Capacity</td>
<td>KPI01 Departure punctuality</td>
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<tr>
<td></td>
<td>Additional fuel burn</td>
<td>KPI10 Airport Peak Arrival Throughput</td>
<td>KPI14 Arrival Punctuality</td>
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<td></td>
<td>KPI02 Taxi-Out Additional Time</td>
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<td></td>
<td>KPI13 Taxi-In Additional Time</td>
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<tr>
<td>Additional KPIs</td>
<td>KPI04 Filed Flight Plan en-Route Extension</td>
<td>KPI16 Additional fuel burn</td>
<td>KPI07 En-Route ATFM delay</td>
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<tr>
<td></td>
<td>KPI05 Actual en-Route Extension</td>
<td></td>
<td>KPI12 Airport/Terminal ATFM Delay</td>
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<tr>
<td></td>
<td>KPI08 Additional time in terminal airspace</td>
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- Additional information: [http://www.icao.int/airnavigation/Documents/GANP-Potential_Performance_Indicators.pdf](http://www.icao.int/airnavigation/Documents/GANP-Potential_Performance_Indicators.pdf)
Principles

• Strong focus on desired/required results
• Reliance on facts and data for decision making
• Collaborative justified decision-making
The way to success

- Commitment
- Agreement on goals
- Organization
- Human resources and knowledge/expertise
- Data collection, processing, storage and reporting;
- Collaboration and coordination; and
- Cost implications
STEP 1: KNOW YOUR SYSTEM
STEP 2: TARGETS SET/ NEEDS CALCULATION
STEP 3: OPTIMUM SOLUTION IDENTIFICATION
STEP 4: OPTIMUM SOLUTION DEPLOYMENT
STEP 5: RESULTS ASSESSMENT
Executive-level Briefings

- State Safety Briefing
- Regional Safety Briefing
- Aerodrome Briefing
- Airspace Briefing
- Airline Briefing

* Accessible through iSTARS/SPACE

16 September 2016
OVER 30
Applications in iSTARS
for Safety Analysis and Information

MORE THAN
2000+
Users registered in iSTARS

www.icao.int/safety/ISTARS

16 September 2016
Political Will

Standards and Recommended Practices (SARPs)

ICAO Global, Regional, and Local Plans

Effective Implementation (EI)

Capacity Building

Infra. Investment

Development Plans
- CAA Master Plan
- USOAP CAP
- Plans of Action
- ENV Action Plan
- Etc.

Planning & Implementation Gaps

Institutions
Personnel
Procedures
Nat’l Budget
Donors
PPPs

UN ODA Banks

Identification of needs

Feasibility Analyses

Project Management

Quality Assurance and Monitoring

Advocacy for Aviation Development
EMPOWER Stakeholders
DELIVER Measurable Results

ANTICIPATE the needs
COLLABORATE on global priorities
RECALIBRATE to performance standards
FACILITATE State implementation
COMMUNICATE progress
VALIDATE results

Needs Analysis / Validation
Global Plans
SARPs & PANS
Implementation Planning
Assess & Measure
Compliance & Verification

Global & Regional
Training & Guidance
if needed
Reporting against the Current Global Plans

   - NOW AVAILABLE

2. Safety Report
   - NOW AVAILABLE

   - NOW AVAILABLE

Introduction of the ICAO Business Plan

• Role and value of ICAO in the context of the global aviation system
  – Convention on International Civil Aviation
  – 5 Strategic Objectives
  – No Country Left Behind campaign
  – United Nations 2030 Agenda for Sustainable Development

• Overview of ICAO achievements
  – Strengths and opportunities
Existing and Emerging Challenges

Overview of Emerging Issues and Risks

Drivers for Change and Improvement

Optimized services to States and the Global Aviation System

Overview of Emerging Issues and Risks

Drivers for Change and Improvement

Optimized services to States and the Global Aviation System
Results-Based Management Approach

Corporate Performance Management Framework

- STRATEGY
  - Improved decision-making
- RESOURCES
  - Improved transparency
- PROCESSES
  - Improved accountability
- MEASUREMENTS

Operating Plans | Corporate KPIs | Risk Registry
• Policy and Implementation Monitoring
• Situation Analysis and progress

• Indicator differs from the Goal
• Objective Data Gathering
• Fact Acceptance
• Real Transparency
NO COUNTRY LEFT BEHIND