

DATA ANALYSIS GROUP (DAG)

Objectives

The DAG will provide an opportunity to foster the dialogue between States, international organizations and aviation stakeholders on the use of data and analysis to facilitate data driven decision making.

The Group will also provide to GREPECAS with an opportunity to learn about the new ICAO solutions with respect to the data and analysis available to help States to optimize the benefits of air transport in the region.

The DAG will also include presentations on the latest applications in data and analytics that are used for efficient decision making by different aviation stakeholders, as well as a number of discussion panels addressing interesting subjects such as: information systems to improve efficiency on airports and ANSPs. DAG participants will include top experts in the field of aviation data and analysis, policy makers and managers, practitioners and researchers, many from the relevant working groups of ICAO and international organizations.

The database will contain bilateral agreements and amendments. Documents are filed by Member States, in accordance with Article 83 of the Chicago Convention, or integrated from other official national sources. Agreements are thoroughly analyzed and the main provisions are codified to provide extended functionalities:

- Analyze agreements per specific provisions;
- Visualize the Regional network of air traffic rights for route planning;
- Access to ICAO's extensive document library with a subscription.

Using state of the art statistics models, the Group is a one-stop solution for all planning and optimization needs of States and other aviation stakeholders.

ICAO DATA+ is a tool that presents in a dynamic and graphical environment the statistical data collected from all CAR and SAM regional Member States. ICAO DATA+ enables users to quickly visualize trends, differences and similarities between data selection and make competitive analyses more accessible.

QUALITY- ICAO will be collected following internationally agreed norms and validated on a government level as provided by ICAO Member States.

CREDIBILITY- ICAO has long been recognized as impartial and respected source of air traffic statistics and forecast.

ACCESSIBILITY- ICAO data will be presented in a new dynamic web based platform with user-friendly interface that is accessible 24/7 and that provides downloadable reports.

The new DAG allows you to quickly visualize or compare these among different data classified. The data consists of aircraft movements, number of passengers embarked and disembarked, etc.

It deals with the personnel data of international and domestic scheduled airlines as well as non-scheduled operators. The data consist of statistics on the number of airline personnel by job category and the annual expenditures for these personnel.

1. METHODOLOGY

1.1 With a view to responding to the needs of States, regional air navigation planning groups and environmental planning bodies, several sets of long-term traffic forecasts were developed under the auspices of ICAO over the past decade. In considering this development and the resulting complexities, Resolution A38-14 requested the Council to “develop one single set of long-term traffic forecasts, from which customized or more detailed forecasts can be produced for various purposes, such as safety, air navigation systems planning and environmental analysis”.

1.2 The Multi-disciplinary Working Group on Long-term Traffic Forecasts (MDWG-LTF) under the Aviation Data and Analysis Panel (ADAP) was tasked to develop a single set of long-term traffic forecasts. The MDWG-LTF comprised of ten Member States and three international organizations. The membership of MDWG-LTF also included five members of the Committee of Aviation Environmental Protection (CAEP) working groups. The work of the group has resulted in the replacement of ICAO's decade-old simple forecasting techniques with more rigorous econometric models.

2. DATA AND MODEL SPECIFICATION FOR PASSENGER AND CARGO FORECAST

2.1 A time-series data set was created for both international and domestic operations at city pair and carrier by compiling:

- a) actual traffic data reported by States to ICAO (through the Air Transport Reporting Forms A, B and C) and published directly by States, the coverage of which was over 90 per cent of air passenger traffic and 95 per cent of freight traffic; and
- b) estimated traffic data based on the airline schedules published in the Official Airline Guide (OAG), which was used to fill the gaps.

2.2 The specification of the appropriate dynamic demand equations followed economic theories and a “general to specific” approach that starts with a model which is over parameterized and then simplifies to a more specific form on the basis of statistical tests and the overall explanatory power of the model.

2.3 As there is no coherent methodology to obtain specific airfare costs, oil prices were used as a proxy for cost of air travel, consistent with recent literature on this topic. In addition, dummy variables are added to the model to take into account the effect of “special” events such as those of September 11th 2001 and the Severe Acute Respiratory Syndrome (SARS) outbreak.

2.4 A panel data analysis using a first difference estimator (i.e. based on difference between year t and year $t-1$) was used to estimate the passenger traffic equation. This approach best fits the dataset and information available for estimation while allowing for controlling of both time series and cross-sectional aspects of the data.

3. RESULTS OF ESTIMATION

3.1 The predicted changes in the RPKs and predicted annual FTKs are used to calculate Compound Annual Growth Rates (CAGR) of passenger and freight traffic for twenty (2012-2032) and thirty (2012-2042) year period. The estimated results are summarized in Appendix to this document.

3.2 The estimated results indicate that global passenger traffic will grow at 4.6 per cent annually to 2032. Fourteen route groups outpace the global growth, including all route groups involving Central Southwest Asia. The fastest growing route group is Domestic Central Southwest Asia, which is estimated to grow at around 10 per cent annually. The growth rates of route groups in and between Africa, Central America/Caribbean and Middle East are close to the global growth rate. Route groups in and between mature markets including Europe, North America, and North Asia have a lower estimate of growth rate.

3.3 Global freight traffic is expected to grow at 4.4 per cent annually over the same time period as passenger forecasts. The Middle East has the highest forecast of annual growth outpacing global estimate by about 2.8 percentage points. The growth rate of Asia/Pacific is close to the global estimate, at 4.7 per cent. Europe, Latin America/Caribbean, and North America will grow at a slightly slower pace than Asia/Pacific while Africa has the lowest annual growth rate of 2.1 per cent.

| Central America/ Caribbean | |
|-----------------------------------|----------------------------------|
| 1 | Antigua and Barbuda |
| 2 | Aruba |
| 3 | Bahamas |
| 4 | Barbados |
| 5 | Belize |
| 6 | Canada |
| 7 | Costa Rica |
| 8 | Cuba |
| 9 | Dominica |
| 10 | Dominican Republic |
| 11 | El Salvador |
| 12 | Grenada |
| 13 | Guatemala |
| 14 | Haití |
| 15 | Honduras |
| 16 | Jamaica |
| 17 | México |
| 18 | Nicaragua |
| 19 | Saint Kitts and Nevis |
| 20 | Saint Lucia |
| 21 | Saint Vincent and the Grenadines |
| 22 | Trinidad and Tobago |
| 23 | United States |
| South America | |
| 24 | Argentina |
| 25 | Bolivia |
| 26 | Brazil |
| 27 | Chile |
| 28 | Colombia |

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|------------------------------------|-----------|
| 29 | Ecuador |
| 30 | Guyana |
| 31 | Panama |
| 32 | Paraguay |
| 33 | Peru |
| 34 | Suriname |
| 35 | Uruguay |
| 36 | Venezuela |
| International Organizations | |
| 37 | ASSI |
| 38 | CANSO |
| 39 | CLAC |
| 40 | COCESNA |
| 41 | IFAIMA |
| 42 | IATA |
| 43 | IFALPA |