



iFlex Program Executive Summary

Airlines that fly the airspace and air traffic authorities that manage it are being continuously challenged by the current airspace structure. Flight routings offered by ATC services have been slow to keep pace with the rapid changes of airlines' operational demands, especially for long-haul city-pairs and as well, by the increase traffic levels. In certain parts of the world, regional route structures, built many years ago, have become outdated and can become a constraining factor due to their inflexibility. IATA will work with key stakeholders to help introduce more flexible planning starting in less dense traffic areas. This work is called iFlex (IATA Flexible routings).

Early modeling of the iFlex program suggests that airlines operating a 10-hour intercontinental flight can cut flight time by six minutes, reduce fuel burn by as much as 2% and save 3,000 kilograms of CO₂. These efficiency improvements will assist the industry in meeting its environmental targets.

Flight-times, ranging in excess of 10 hours and the robust navigational capabilities of modern-day aircraft, make a compelling argument to get away from the fixed airway structure and utilize a flexible alternative plan that can adapt to the changing nature of the upper wind patterns. Moreover, upper winds, which change by time of day, season and geographical areas of flight, have a direct influence on fuel burn and proportionately, on the carbon footprint. Sophisticated airline flight planning systems have now the capability to predict and validate optimum daily routings, both within airlines and ATC facilities. Likewise, ground systems used by air traffic centers have significantly improved their levels of communication and surveillance systems.

Using what is already available on the airplane and within the ground control systems, the move from Fixed to Flex could be done smoothly. The obstacle is to challenge the traditional way flights are planned. All stakeholders have to work together to approve user-preferred daily routings and reduce the reliance on the fixed airway system to a more dynamic traffic management system. The iFlex program builds on existing best-practices already available and with solutions that can be implemented across several ATC operators in day-to-day operating conditions and using current technology. All new flexible routes generated will be validated in real-time for notices to pilots, airspace restrictions and en-route weather conditions. The resulting flight plans generated will use a combination of existing infrastructure, waypoints, fixed-airways with new flexible routes where possible to obtain an optimized plan trajectory given the winds for that period. It will require close coordination with ICAO, States, ANSP's and airlines.

Using a two-phased approach, IATA will first develop guidance material that will outline the reasons for change, benefit analyses and a clear methodology to support implementation, concentrating on long-haul routes. The follow-up phase will be through a pilot project using low-density airspace to waive the fixed route structure, with initial focus on the South Atlantic, the African continent, and using the Johannesburg - Atlanta and Dubai - Sao Paulo routes.

In the coming months, IATA will work closely with airlines, ICAO, air navigation service providers and governments on proof-of-concept work which will include data analysis and route simulation using modern flight planning tools. A pilot project is planned for 2011 where actual flights will be able to plan and fly an airline-derived flight trajectory in proof-of-concept.