USE AND APPLICATION OF GNSS IN AIR NAVIGATION IN ECUADOR

United Nations / ICTP Workshop on the Use of Global Navigation Satellite Systems (GNSS) for Scientific Applications
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CIVIL AVIATION DIRECTION OF ECUADOR
BACKGROUND

1980 ICAO RECOGNIZES THE LIMITATIONS OF CURRENT AIR NAVIGATION SYSTEMS AND THE NEED TO IMPROVE THE NEEDS OF AVIATION IN THE XXI CENTURY.

1983 ICAO ESTABLISHES A SPECIAL COMMITTEE NAMED FANS (FUTURE AIR NAVIGATION SYSTEM) TO STUDY AND IDENTIFY NEW TECHNOLOGIES THAT WILL ALLOW A COORDINATED DEVELOPMENT OF AIR NAVIGATION SYSTEMS IN THE NEXT 25 YEARS.

MAIN RECOMMENDATION: NEED FOR THE IMPLEMENTATION OF PROGRESSIVE WORLDWIDE NEW CONCEPT OF CNS / ATM SYSTEM BASED MAINLY IN SATELLITES.
2003  ELEVENTH AIR NAVIGATION WORLD CONFERENCE (ANCONF / 11) GUIDELINES FOR THE TRANSITION OF SATELLITE BASED NAVIGATION SYSTEMS IN THE CAR / SAM REGIONS AND ADOPTED BY THE 12th MEETING OF GROUP OF PLANNING AND IMPLEMENTATION OF THE CAR / SAM (GREPECAS, IN ORDER TO INTRODUCE IN AN EVOLUTIONARY WAY GNSS CAPACITY IN ALL PHASES OF FLIGHT.

2006  RNAV / GNSS / RNP PROCEDURES IN OLD QUITO INTERNATIONAL AIRPORT IATA / AA / DGAC
2006

RNAV / GNSS / RNP PROCEDURES IN OLD QUITO INTERNATIONAL AIRPORT
2008 NATION BIGGEST AVIATION CHALLENGE: NEW INTERNATIONAL AIRPORT IN QUITO, ECUADOR
SCENARIO...

- IRREGULAR TOPOGRAPHY
- MOUNTAINOUS AREA
- WORK INFRASTRUCTURE (BUILDINGS, RWY, TWY)
- NAVAIDS INSTALLATION (VOR / DME, ILS, PAPI)
- SYSTEMS (CNS)
- SERVICES (AIS, COM, MET, ATC)
Annex 2 - Rules of the Air
Annex 4 - Aeronautical Charts
Annex 6 - Operation of Aircraft
Annex 10 - Aeronautical Telecommunications
Annex 11 - Air Traffic Services
Annex 14 - Aerodromes
Annex 15 - Aeronautical Information Services
9849 GNSS MANUAL

9750 Global Air Navigation Plan for CNS/ATM

9674 WGS 84 MANUAL

8071 Manual on testing of radio navigation aids (VOLUMEN II)

4444 Procedures for Air Navigation Services — Air Traffic Management

8126 Aeronautical Information Services Manual
RNAV/GNSS SID’s Procedures
RNAP/GNSS APP Procedures
RNAV/GNSS APP Procedures
The goal is to have in the near future, procedures GNSS RNAV / RNP RNAV / RNP / AR with a maximum degree of precision, and…….
without using ground equipment
NOWADAYS QUITO´S AIRPORT HAS:

- 13 SIDs
- RNAV/GNSS
- 4 APPCH
- RNAV/GNSS

http://fotosnaiq.blogspot.com
THE FIRST AIRCRAFT LANDED IN NEW QUITO INTERNATIONAL AIRPORT TEST FLIGHT
• THE MOST IMPORTANT AIRLINES IN THE WORLD OPERATE IN NEW QUITO´S INTL AIRPORT.
NEW QUITO´S INTL. AIRPORT
NATURAL WORLD HERITAGE SITE
CONVENTIONAL ROUTES
RADAR COVERAGE
RNAV ROUTES (GNSS) TO GALAPAGOS ISLANDS

UT-100
UT-101
UT-102
ADVANTAGES

- Increased safety
- Flight time reduction
- Operational costs reduction
- Best operational itineraries
- Standardization of procedures for pilots / ATC
- Instrument procedures without using ground equipment
- Airspace capacity
BENEFICIARIES

- Operators / Airlines
- Airports
- Civil Aviation Authorities
- Users / passengers
CONCLUSIONS

- GNSS is the most developed means for air navigation.

- ICAO has developed standards and recommended practices (SARPs) for GNSS and other technical documents for implementation.

- The evolution of GPS, Galileo, Glonass, etc. will contribute to the implementation of GNSS in all phases of flight worldwide.
ECUADOR HAS NOW PROCEDURES RNAV GNSS / RNP/GNSS RELATIVELY EQUAL TO MOST IMPORTANT AIRPORTS IN THE WORLD

HAS REGULATIONS REGARDING GNSS FOR ITS USAGE

ITS IMPLEMENTATION (GNSS) WILL CONTRIBUTE TO ELIMINATE THE GAPS, IMPROVE SAFETY AND DEVELOPMENT OF AIR NAVIGATION IN CAR / SAM

IT IS NECESSARY TO CONTINUE WITH THE EFFORTS, COORDINATION AND INTERNATIONAL COOPERATION TO ACHIEVE THE FULL IMPLEMENTATION OF GNSS IN THE CARIBBEAN AND SOUTH REGION (CAR / SAM).
ECUADOR HAS LIFTED OFF WITH GNSS ON BOARD!!

THANK YOU
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