PROJECT:
GPS GUIDANCE AUGMENTATION SYSTEM FOR LOW DENSITY COLOMBIAN AIRPORTS
BACKGROUND

PNA COL:  *Air navigation Plan for Colombia*

GEORED (50 stations)

PNNS: National Satellite Navigation Plan
ISSUES

Remote airports in the jungle
Unique mean to access those regions
Few or non navaids for approach and landing in domestic airports
No coverage in lower airspace
CURRENT SITUATION

Global
CAT II y CAT III under analysis
GBAS CAT I available certified by FAA (waivers)

Region
Chile - FAA analysis GBAS on 12 airports. CAT I HONEYWELL in Santiago (2012).
Argentine – INVAP/Argentine Air Force / La Plata National University (2011)
STRENGTH IN COLOMBIA

Colombian National University UNAL - AA+ Duff & Phelps.

187 Agreements with international universities
Math models
Software development
Materials test.
GENERAL GOAL

Modeling, evaluation and simulation a technological solution for
GPS GUIDANCE AUGMENTATION SYSTEM
BASED ON GEODETIC REFERENCE NETWORK
PROJECT TOOLS

Annex 10 ICAO
RTCA
ASTM
FAA ACs
EUROCONTROL Docs
International Agreements
SPECIFIC GOALS
PHASE 1  ANALYSIS AND DESIGN
SPECIFIC GOALS
PHASE 2 SIMULATION

- Operational Evaluation
- Certification Plan
- Production Plan
- PRELIMINARY DESIGN
- VALIDATED DESIGN
SPECIFIC GOALS
PHASE 3 PRE OPERATIONAL

VALIDATED DESIGN
Operational tests
Certification
Production
FINAL PRODUCT
EXPECTED RESULTS

Ionosphere

Position + ε

Troposphere

Reference position

Correction

22.200 km

800 km

80 km

18 km

UAEAC

UNAL

GEORED
Thanks

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COLOMBIAN CIVIL AVIATION AUTHORITY