Global Ministerial Aviation Summit, 29-31 Aug. 2016, Riyadh (KSA), SBAS-ASECNA Programme

SBAS-ASECNA Programme
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Global Ministerial Aviation Summit
29-31 August 2016
Riyadh, Kingdom of Saudi Arabia

Session 4 : Regional projects in Air Navigation
ASECNA at a glance

Agency for Air Navigation Safety in Africa and Madagascar

Cooperative management of a Single Sky of 16.1 millions km² (1.5 * Europe)
Policy background

Africa-EU Strategic Partnership: a widespread multilateral political support to satellite navigation in Africa

• ‘Roadmap 2014-2017’ adopted by African & EU Heads of State at the 4th Africa-EU Summit (April 2014) - Commitment to provide sustainable and adequate financial and human resources [...] for the deployment EGNOS in Africa

ASECNA Member States:
A strong commitment to introduce EGNOS/GALILEO-based satellite navigation services

• Resolutions n°2005 CM 44-11 and 2011 CA 120-18
• Mandate of the Director General
Policy background

African Union Space Policy and Strategy:
Policy drivers for African Space programmes
towards social, political and economic integration

Navigation and positioning

• Development of indigenous continental level navigation augmentation system

• Building on existing infrastructure such as ASECNA
Operational needs

37% of Africa is 250 km from ILS equipped airport (14% of runways ends):
- main international airports
- only one runway end

87% of Africa is 250 km from a main or regional airport

IATA forecasting 2013-17 CAGR: 5.3%

Safety lessons learned

LNAV/VNAV (Baro) (short-term)
LPV/LP (SBAS) (medium-term)

Need for RNP APCH APV

SBAS-ASECNA services
Strategic objectives

• **Strategic vision**
  - Prepare the future
  - Strengthen the positioning of the Agency as an added-value services provider

• **Directions:**
  - Ownership of the SBAS infrastructure
  - Control and provision of Signal in Space (SiS)
  - Autonomous provision of SBAS services to end users

• **Service provision objectives:**
  - **Step 1:** Early SBAS services (LPV, L1) by 2019/20
  - **Step 2:** Full SBAS services (LPV, DFMC) by 2023 onwards
Towards early services

- **Ionosphere characterisation: SAGAIE (2013-on-going)**
  - Following-up the first feasibility study performed in 2011 with CNES
  - Deployment & exploitation of a network of GNSS stations in ASECNA
  - Collection of GNSS raw data for ionospheric studies, to improve knowledge on equatorial ionosphere in order to optimise EGNOS model for SBAS-ASECNA system

Joint initiative:

- [ASECNA](#)
- [CNES](#)
- [ESA](#)
- [Monitor](#)
Towards early services

- Ionospheric studies => dedicated iono algorithm => performance assessment

APV-1 availability

11/10/2015 (24h)
(high iono activity)

- Important progress towards the resolution of the high ionosphere activity issue for SBAS L1 service in equatorial area!
Institutional ecosystem for international cooperation

- **International agreement (under review)**
- **Cooperation (services provision)**
- **Cooperation (missions)**
- **Cooperation (R&D, system development...)**

**SBAS-ASECNA Programme**

**Synergies**

**SBAS IWG**

**Africa-EU Partnership**

**EGNOS Africa-JPO**
ASECNA-EU international agreement

• To lay down the terms and conditions for the provision of SBAS services, based on EGNOS, in the ASECNA area
• As per the Regulation (EU) 1285/2013 and the resolution n°2011 CA 120-18 of ASECNA Member States
• Opening of negotiations authorised by the Council of EU (Competitiveness Council, 25-26 September 2014)
• Negotiations launched on March 2015 in Dakar, very satisfactory progress, main phase completed on April 2016 in Dakar
• Draft of agreement under review within the EU institutional system
EGNOS-Africa Joint Programme Office

Pan-African entity to coordinate and support harmonised SBAS/EGNOS development and services provision in Africa

- Implementing measure of the Africa-EU Strategic Partnership
- Pan-Africa team of experts based in Dakar, Senegal

- Phase 2016-17 (funded by EU and ASECNA): to accelerate the adoption of SBAS/EGNOS in Africa

- Regional modular approach foreseen:
  - Northern (M1),
  - West-Central (M2),
  - Eastern Africa (M3),
  - Southern (M4)

- Status: on-going consultations with RECs for the creation of modules
THANK YOU FOR YOUR ATTENTION