SIP/2012/ASBU/Dakar-WP/24G

Aviation System Block Upgrades
Module N° B0-102

Increased Effectiveness of Ground-Based Safety Nets

Workshop on preparations for ANConf/12 − ASBU methodology
(Dakar, 16-20 July 2012)

Module N° B0-102:
Increased Effectiveness of Ground-Based Safety Nets

Summary	To monitor the operational environment during airborne phases of flight, safety nets provide timely alerts on the ground.	
Main Performance Impact	-10 Safety	
Operating Environment/Phases of Flight	All airborne flight phases	
Applicability Considerations	Benefits increase whilst traffic density and complexity increase. Not all ground-based safety nets are relevant for each environment. Deployment of this module should be accelerated.	
Global Concept Component(s)	CM – Conflict Management	
Global Plan Initiatives	-9 Situational awareness systems	-16 Decision support and alerting
Main Dependencies	None	
Global Readiness Checklist		Status (ready now or estimated date)
	Standards Readiness	Not applicable
	Avionics Availability	Ready now
	Ground Systems Availability	Ready now
	Procedures Available	Ready now
	Operations Approvals	Ready now

- None

Module N° B0-102 – Change Brought by the Module

- ***Element 1 ✈ Short Term Conflict Alert (STCA)***

  – preventing collision between aircraft by generating an alert of a potential or actual infringement of separation minima

- ***Element 2 ✈ Area Proximity Warning (APW)***

  – Warn the controller about unauthorised penetration of an airspace volume by generating an alert of a potential or actual

- ***Element 3 ✈ Minimum Safe Altitude Warning (MSAW)***

  – Warn the controller about risk of controlled flight into terrain accidents by generating an alert of aircraft proximity to terrain or obstacles.

Safety	Significant reduction of the number of major incidents.
CBA	The business case for this element is entirely made around safety and the application of ALARP (As Low As Reasonably Practicable) in risk management.

Module N° B0-102 – Necessary Procedures (Air & Ground)

- The relevant PANS-ATM (Doc 4444) provisions exist.

Module N° B0-102 – Necessary System Capability

- ***Avionics***
  - Aircraft should support cooperative surveillance using existing technology such as Mode C/S transponder or ADS-B Out.

- ***Ground Systems***
  - Short Term Conflict Alert, Area Proximity Warnings and Minimum Safe Altitude Warnings are proposed

- Controllers must receive specific ground-based safety nets training and be assessed as competent for the use of the relevant ground-based safety nets and recovery techniques.

Module N° B0-102 – Regulatory/standardization needs and Approval Plan (Air & Ground)

- ***Nil***

- ***Standards***
  - EUROCONTROL Specifications for STCA, APW, MSAW and APM, available at http://www.eurocontrol.int/safety-nets

- ***Procedures***
  - PANS-ATM (Doc 4444), section 15.7.2 and 15.7.4

- ***Guidance Material***
  - EUROCONTROL Guidance Material for STCA, APW, MSAW and APM, available at http://www.eurocontrol.int/safety-nets

- ***Approval Documents-*** *Nil*

- **Increased Effectiveness of Ground-Based Safety Nets**

Benefits - Main Key Performance Areas (KPA)					
KPAs	Access	Capacity	Efficiency	Environment	Safety
Applicable	N	N	N	N	Y

Elements

- Short Term Conflict Alert (STCA)

- Area Proximity Warning (APW)

- Minimum Safe Altitude Warning (MSAW)

To be reflected in ANRF

ICAP SIP 2012-ASBU Methodology