Asia Pacific Second Meeting of the Asia/Pacific GBAS/SBAS Implementation Task Force

9 and 10 September 2020
(Video Teleconference)

Agenda Item 3: Presentations on GBAS/SBAS activities

AUSTRALIAN GBAS PROGRAM

(Presented byAustralia)
(Prepared by Jeffrey Benecke (Aerodrome Service Advisor) and Ritesh Kapoor
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SUMMARY

This Information Paper presents an overview of the implementation of Ground Based Augmentation System (GBAS) in Australia.

1. INTRODUCTION

Australia is an early adopter of satellite technology including precision approach capability using Ground Based Augmentation System (GBAS). This paper provides an overview and strategic direction for GBAS in Australia.

2. PRESENTATION

See attached presentation.

3. ACTION BY THE MEETING

The meeting is invited to note the information presented,

— END —

09 & 10 September 2020

GBAS/SBAS IMPLEMENTATION TASK FORCE

Second Meeting GBAS/SBAS ITF/2 (held via web conference)

CURRENT STATUS

SYDNEY

MELBOURNE

GLS IS THE 'EXPECTED' APPROACH METHOD INTO SYDNEY AND MELBOURNE

2
ACTIVE GAST-C INSTALLATIONS

3000+
GLS APPROACHES PER FORTNIGHT (PRE COVID-19)

PRM
GLS APPROVED FOR USE DURING PRM OPERATIONS AT SYDNEY

AIRCRAFT EQUIPAGE

GLS Capable Aircraft at Australian Airports

Destination Airport	Number of Flight Plans	Number of GLS Capable Aircraft	% of Aircraft GLS Capable
Melbourne	117979	46631	40%
Brisbane	100495	32522	32%
Sydney	159503	47016	29%
Hobart	10521	2897	28%
Adelaide	48077	12753	27%
Canberra	21660	5148	24%
Gold Coast	21750	4943	23%
Perth	62818	11615	18%
Sunshine Coast	6238	740	12%
Cairns	32088	3674	11%
Darwin	25077	2823	11%

Based on Flight Plan information (Field 10A) for the period 01 June 2018 to 15 May 2019

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GBAS BENEFITS

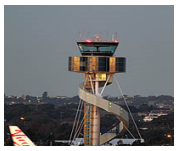
Airports

- Greater operational flexibility
- Increased flow rates into the aerodrome
- Reduced Aerodrome infrastructure
- Flexible siting requirements
- Allows precision approach where ILS is not possible

Airlines

- Improved safety by enabling approach with vertical guidance where none existed before
- Expect no ILS sensitive and critical increasing flow rates
- Less susceptible to interference from buildings, vehicles, terrain
- Seamless transition from ILS to GLS (same path, minima & uses)
- Increased passenger comfort through a stable digital approach path
- Increase in available time slots through reduced Flight Inspection
- Reduced fuel reserves from improved access to destination alternates

Airservices



- Significant reduction in ongoing Maintenance Costs
- Expected reduction in capital investment costs as one GBAS can support up to 48 Precision Approaches with varying Glide Slopes and Displaced Thresholds
- Seamless transition from ILS (minimal phraseology changes)
- Reduce ground movement delay due to no equivalent ILS critical areas
- Community noise abatement and reduced emissions
- Enables wake turbulence management

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RNP TO GLS TRIAL FLIGHT

First RNP to GLS operation involving Qantas 737NG in May 2009

140 KG

FUEL SAVING OVER CONVENTIONAL RADAR VECTORING

440 KG

REDUCTION OF CO2 EMISSIONS

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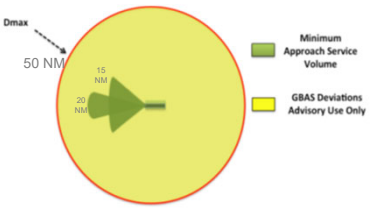
FUTURE ACTIVITIES

EXTEND DMAX

07 OCTOBER 2020

GBAS Maximum Use Distance to be extended from 23 NM to 50 NM at both sites for Advisory Use Only.

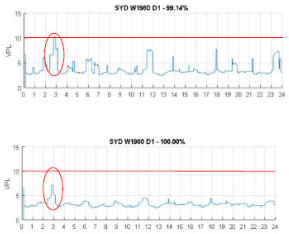


Images sourced from ICAO Working Paper NSP/3-WP 19v2 2/12/16

IONOSPHERE THREAT MODEL

DEFERRED DUE TO COVID-19

Implementation of an Australian specific Ionosphere Threat Model to enhance GLS Service Availability.

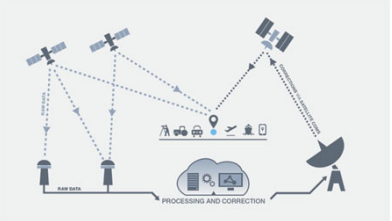


Expected Availability improvements with an Australian specific model

LOW VISIBILITY OPERATIONS

2025+

Australian SBAS (due to be operational in 2025) may be used to support CAT-II approaches on the existing GAST-C system.



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THANK YOU

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