INTERNATIONAL CIVIL AVIATION ORGANIZATION

TWENTY SIXTH MEETING OF THE ASIA/PACIFIC AIR NAVIGATION PLANNING AND IMPLEMENTATION REGIONAL GROUP (APANPIRG/26)

Bangkok, Thailand, 7 – 10 September 2015

Agenda Item 3: **Performance Framework for Regional Air Navigation Planning and Implementation**

3.4: **CNS**

PROGRESS OF THE BDS DEVELOPMENT

(Presented by the People's Republic of China)

SUMMARY

BDS has been formally providing continuous and stable Open Service (OS) since December 27th, 2012. The ICAO NSP is working on the draft of BDS SARPs. The tests and applications of BDS in general aviation is undergoing inside China. The manufacturers and users are encouraged to push forward their tests, demonstrations and implementations of BDS in various applications.

1. INTRODUCTION

1.1 The BeiDou Navigation Satellite System (BDS) developed by China has been formally providing continuous and stable Open Service (OS) since December 27th, 2012.

1.2 The BDS is currently the only available GNSS constellation which broadcasts GPS L1 compatible signal inside the Asia-Pacific Region. BDS will provide global positioning and timing services to international aviation communities. The development of BDS SARPs is undergoing. The recent progress of BDS system and SARPs development was reported to ICAO APAC CNS-SG/19 Meeting on July 20th, 2015 (IP18 Progress of the BDS System and SARPs Development).

1.3 CAAC is committed to continuously improve the performance of ATM system through technical innovations. The tests and applications of BDS in general aviation is undergoing.

2. DISCUSSION

2.1 On December 27th, 2012, the BDS formally began to provide Open Service (OS) to the Asia-Pacific Region. BDS currently has 14 satellites (5GEO+5IGSO+4MEO) in orbit and broadcasts B1I signal to civil users, which is compatible with GPS L1 navigation signal. An Interface Control Document for these signals was released by China Satellite Navigation Office (CSNO).

2.2 At the current stage, the BDS regional service capability has been achieved, which can provide continuous OS to the area as shown in Figure 1 & Figure 2, including the most part of the region from 55°S to 55°N, 70°E to150°E.

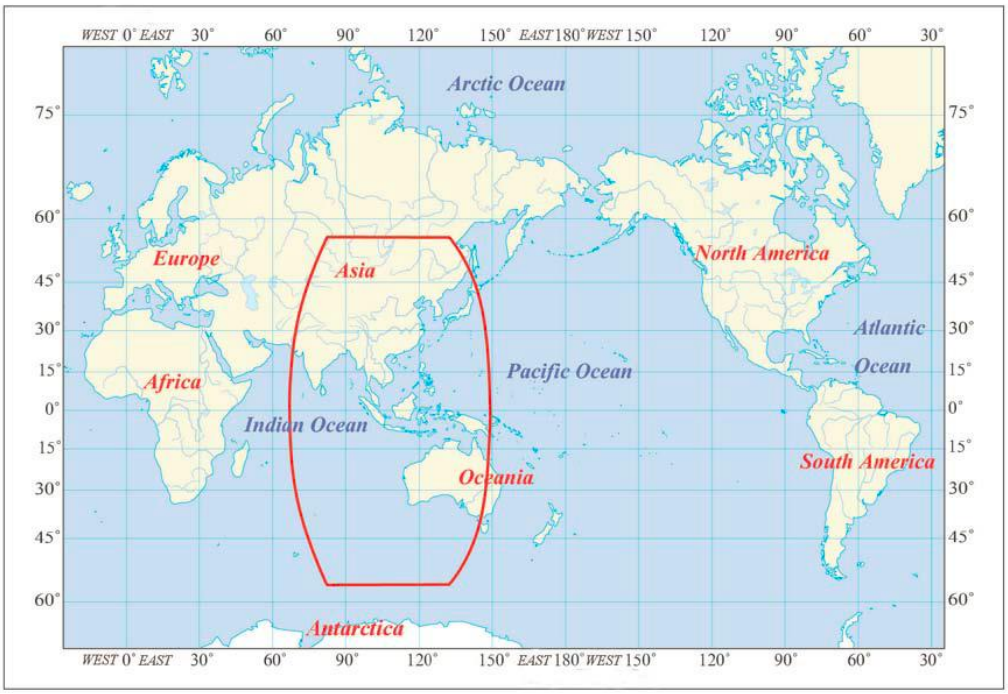

Figure 1 The BDS Service Area

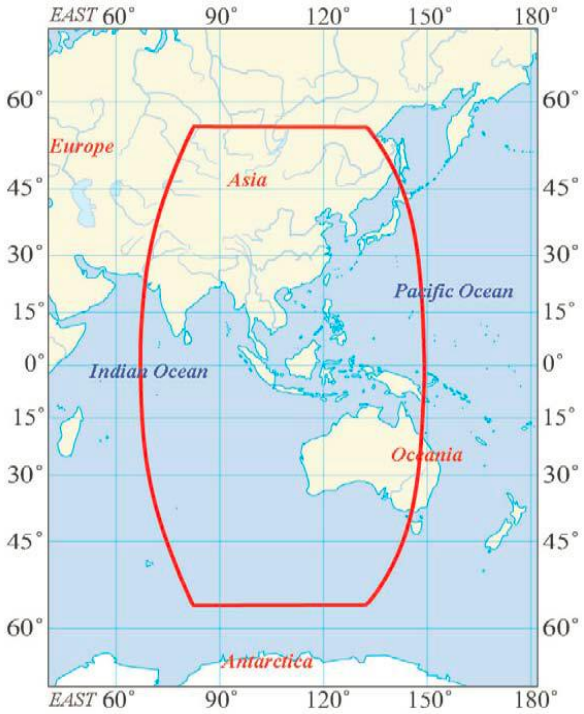

Figure 2 The BDS Service Area (partial enlarged detail)

2.3 The functions and performance of BDS open service are as follows:

- Main functions: positioning, velocity measurement, one-way and two-way timing, short messages;
- Position accuracy: better than 10m;
- Velocity accuracy: better than 0.2m/s;
- Time accuracy: 20ns.

2.4 Organized by CSNO, research institutes and universities of China implemented the verification of BDS OS performance. The verification of BDS OS performance considers international satellite navigation system service performance and verifies the parameters of BDS OS Performance Standard by synthesizing results from simulation and testing.

2.5 BDS has become one of the 4 core constellations accepted by ICAO. NSP is working on the draft of BDS SARPs.

2.6 CAAC is working on the tests and applications of BDS in general aviation using several types of fixed-wing aircrafts and helicopters.

2.7 By providing guaranteed satellite navigation service, BDS gives more options to civil aviation users and helps them to enhance the safety of operations. The manufacturers and users are encouraged to push forward their tests, demonstrations and implementations of BDS in various applications.

3. ACTION BY THE MEETING

3.1 The Meeting is invited to:

a) note the information contained in this paper;

b) encourage the tests and applications of BDS within the Asia-Pacific Region; and

c) discuss any relevant matters as appropriate.

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