International Civil Aviation Organization

Sixth Meeting of the ICAO Asia/Pacific Search and Rescue Working Group (APSAR/WG/6)

Video Teleconference, 03 – 06 May 2021

Agenda Item 3: Global update

REVIEW ON SEARCH AND RESCUE SERVICES INVOLVING BEIDOU NAVIGATION SATELLITE SYSTEM

(Presented by China)

SUMMARY

This paper presents summarizes the development status of Beidou Navigation Satellite system and the services provided in SAR.

1. INTRODUCTION

1.1 The BeiDou Navigation Satellite System (hereinafter referred to as BDS) has been independently developed and operated by China with an eye on the needs of the country's national security as well as economic and social development. As a temporal-spatial infrastructure of national significance, the BDS provides all-time, all-weather and high-accuracy positioning, navigation and timing services to global users.

1.2 China attaches great importance to the BDS construction and development, and has been exploring a path to develop a navigation satellite system suitable for its national conditions since 1980s, and gradually formulated a three-phase development strategy. By 2000, the construction of BDS-1 was completed to provide services to China; by 2012, the construction of BDS-2 was completed to provide services to the Asia-Pacific region; by 2020, the construction of BDS-3 was completed to provide services worldwide.

1.3 BDS-3 constellation consists of 24 satellites in Medium Earth orbits (MEO), 3 satellites in geostationary orbits and 3 satellites in 55° inclined geosynchronous orbits. BDS-3 can provide global users with positioning, navigation, timing, international search and rescue services, etc.

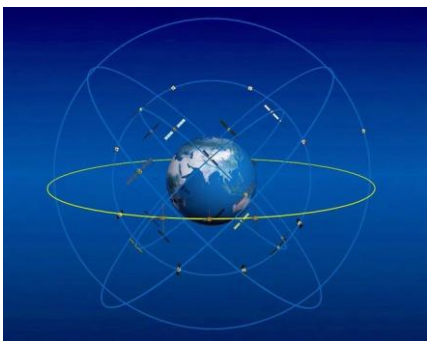

Fig. 1 the Figure of BDS

2. DISCUSSION

Ratification of the BDS by International Standards

2.1 In recent years, China has been devoted to advance the ratification of BDS by international organizations, such as International Civil Aviation Organization (ICAO), International Maritime Organization (IMO), COSPAS-SARSAT and others. the China Satellite Navigation Office (CNSO) has completed the communication with those organizations.

2.2 In the field of international civil aviation, positive efforts have been made to draft the BDS standards under the ICAO framework. The technical specification validations of B1C, B2a and B1I signals have been completed.

2.3 In the field of international maritime, BDS has been recognized by the IMO as the third World-Wide Radio Navigation System (WRNSS). BDS is advancing the drafting and revision on the SBAS standards under the International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA).

2.4 In the field of international search and rescue, efforts are made to include technical parameters and specification information about the BDS SAR payload into relevant documents of COSPAS-SARSAT. The SAR payloads have completed the construction and in-orbit tests, and are carrying out commissioning tests as planned.

The International Search and Rescue Services of BDS

2.5 In BDS-3 Constellation, there are currently 6 satellites in MEO orbits equipped with SAR payloads providing SAR service for global users. The international search and rescue services will be offered by a global MEOSAR system jointly supported by BDS and other navigation satellite systems in accordance with the COSPAS-SARSAT standards.

2.6 Distress alert services based on return links will also be provided, which will greatly enhance the efficiency and capability of search and rescue services.

3. ACTION BY THE MEETING

3.1 The meeting is invited to note the information contained in this paper.

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