BDS Applications in the Transport Industry

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01

Brief Introduction

Introduction of CTTIC

China Transport Telecommunications & Information Center (CTTIC) is the 1st basic telecommunication service operator in China for mobile satellite communication services. CTTIC operates the Beijing Satellite Access Station and also the business of Inmarsat in China, therefore has accumulated rich experience.

Complete Infrastructure

Self-owned and operated high standard facilities with reliable power supply, cyber security and O&M systems, etc..

Inter-connected with terrestrial mobile communication network such as China Telecom, China Mobile and China Unicom

Significant Duties

Responsible for Maritime distress alert monitor and relay to SAR related agencies

Connected to CNMRCC and CRS of MOT via dedicated high-speed network

Service Operation

Responsible for the demonstration, promotion and internationalization of BDS applications in the transport industry

Complete, standard and orderly service system, including sale, subscription, accounting, customer service, technology development and so on

Introduction of CTTIC

Transport - Key BDS Application Industry

Transport Industry:

- Numerous units, long distances, wide areas and high mobility;
- Biggest civilian user of BDS;

Ministry of Transport (MOT):

- Competent ministry of the transport industry;
- Long-term supports for BDS application and industrialization.


02
Application in Road Transport

Road Safety Service

Road Transportation Safety Service System

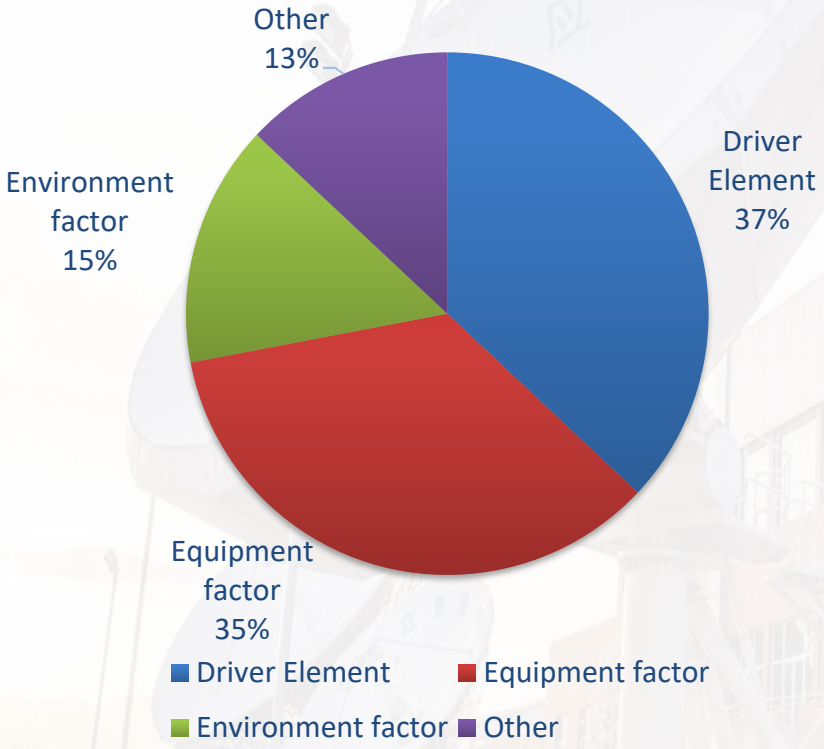
Main Functions

- Real-time Monitoring
- Driving safety warning
- Road information distribution
- Data statistics

Nearly 8 million registered, biggest Internet of Vehicles

Road Safety Improvement

Road Accident Cause



- Over 8,500 million driving risk warnings delivered since its operation in 2013
- Overspeed correction: 97%
- Fatigue driving correction: 57%

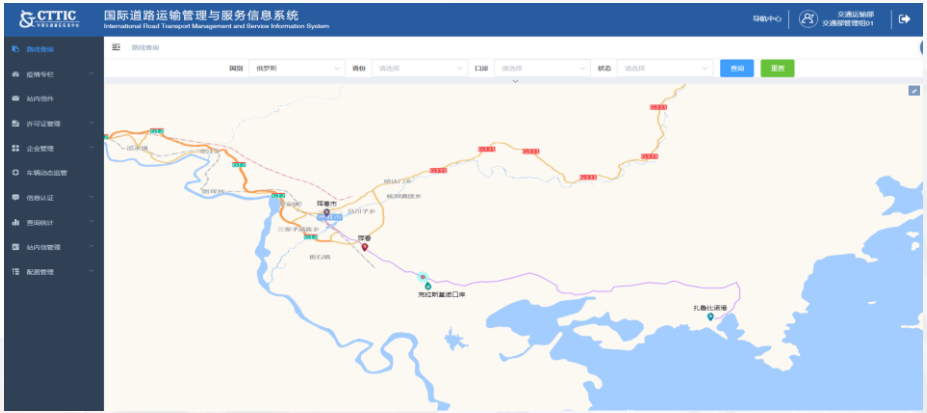
Cross-border Transportation

Facilitating BDS applications in cross-border road transportation

- Improving custom clearance efficiency
- Improving monitoring and inspection capability in cross-border transportation
- Providing data support for border trade
- Improving public service capability

International Road Transport Management and Service Information System

- GIS map based search, inquiry and demonstration of international road transport routes;
- Direct dynamic route and track preview supporting online command and control.
- Mobile app supported.




03
BDS Application in Maritime

BDS Maritime Terminals

BDMSS Maritime Mobile Terminal

BDMSS Shipborne Terminal

BDS Maritime Intelligent Terminal

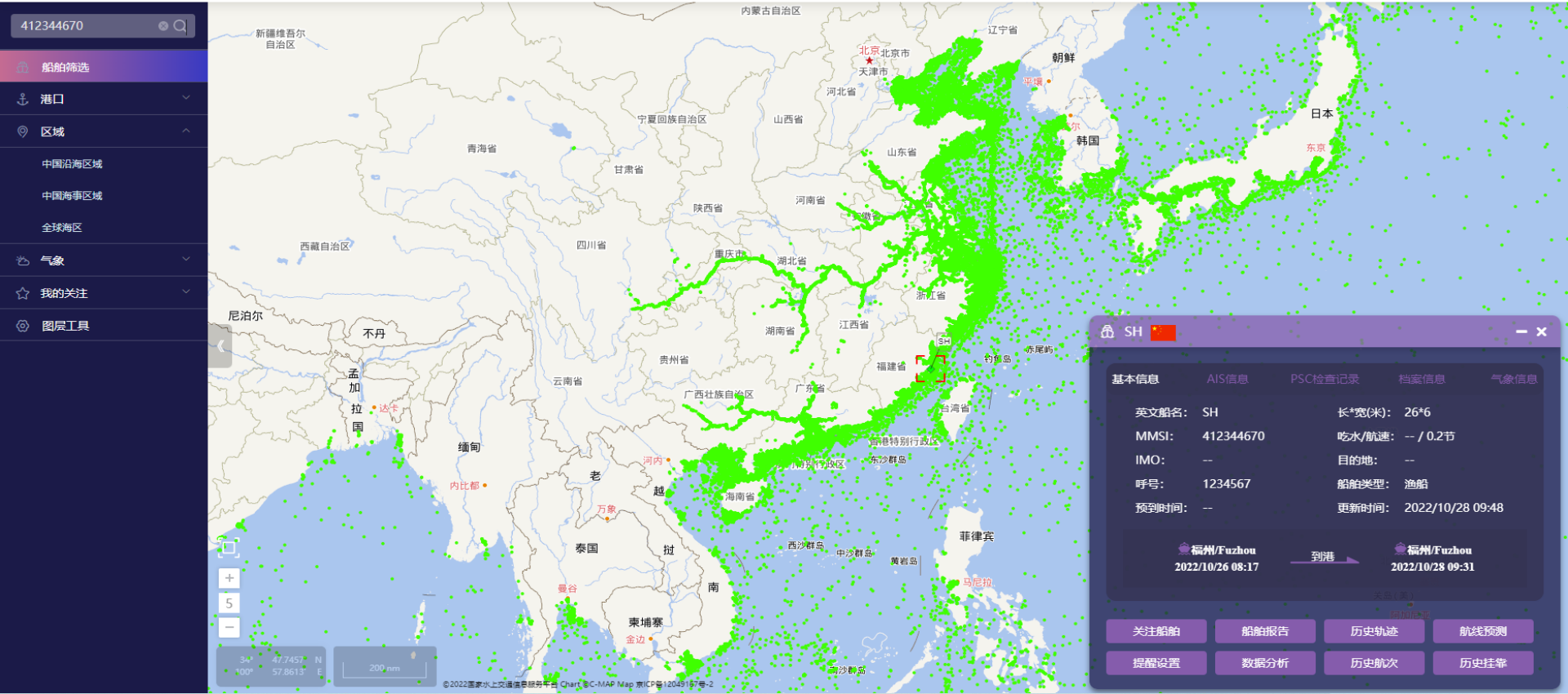
BDS EPIRB

Maritime Information Service

CTTIC

国家水上交通信息服务平台
www.myships.com

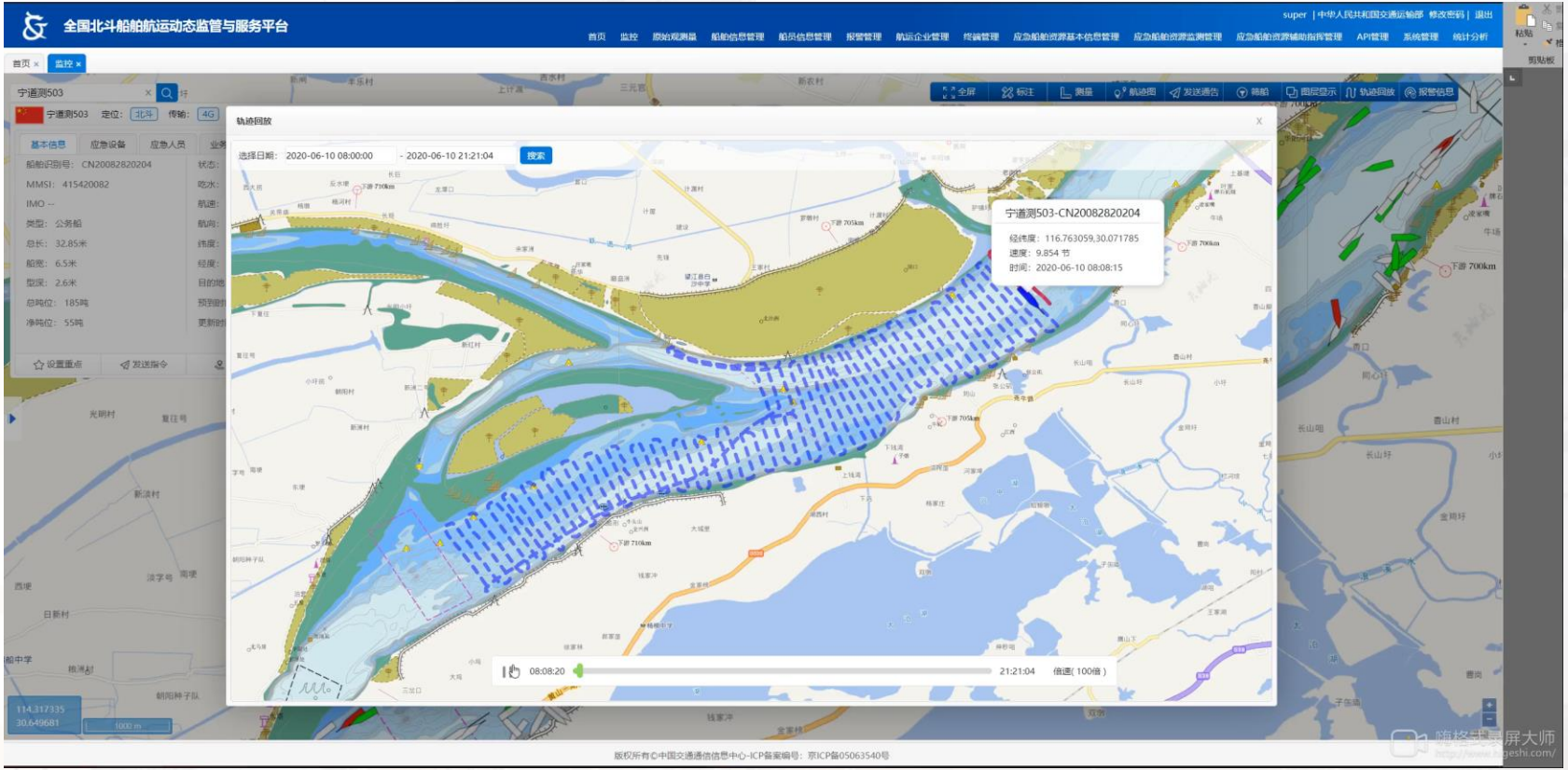
首页　船舶可视化　回到旧版　安全退出



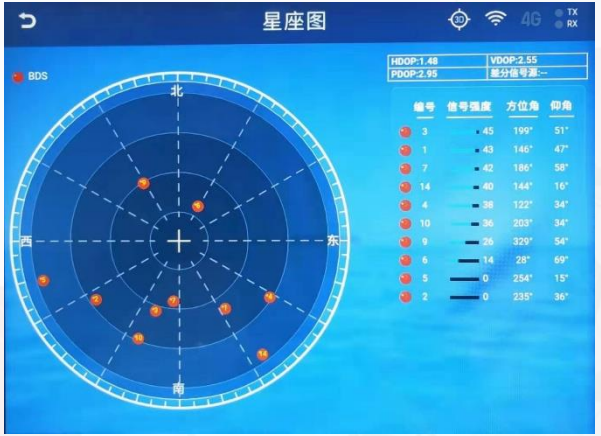
BDS Ship Dynamic Service System

The system enables active and passive alerting when distress or man overboard happens. Diverse communication connections help improve the efficiency of SAR operation.

BDS Ship Dynamic Service System



Terminal Interface



Smart Port Construction

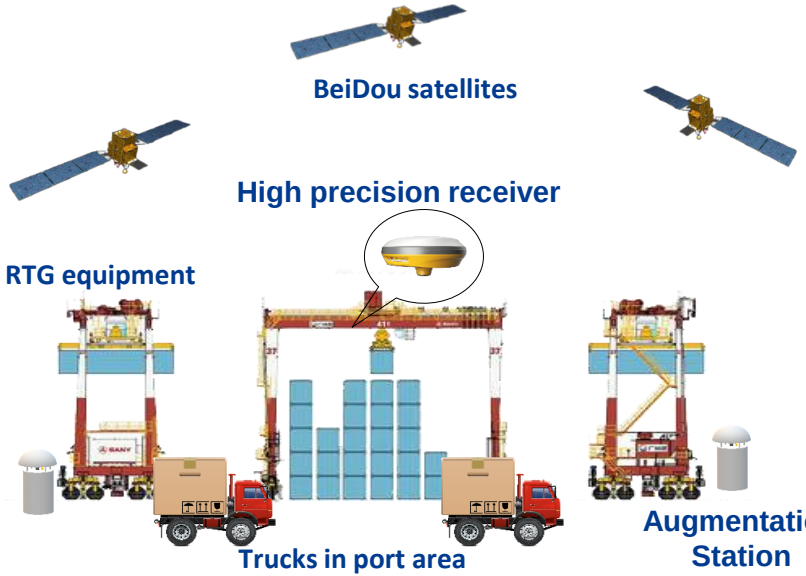
Application demands

- High construction and maintenance cost of traditional magnetic nail navigation
- Labor costs increase the demand for automated operations in ports
- Demand in improving operational efficiency and safety
- Demand in port transformation and digitalization

Precise positioning is an essential foundation for the construction of smart ports, and location data is the cornerstone of intelligence.

Smart Port Construction

BDS high precision service supports the transformation and digitalization of mechanical automation in port operations. With BDS high precision positioning terminals installed on trucks in the port area, intelligent freight transport dispatch, visual and digital monitoring and automatic loading and unloading of goods in port yards could be realized.



Automated Port Operation

BDS antennas installed in Ningbo Zhoushan Port areas

Automated operations via remote control

Intelligent Ship Lockage




By building BDS based intelligent ship lockage system and installing shipborne intelligent BDS terminal, ETC intelligent ship lockage is realized with high efficiency and service quality to enable “non-stop reporting, tolling and consecutive lockage”.

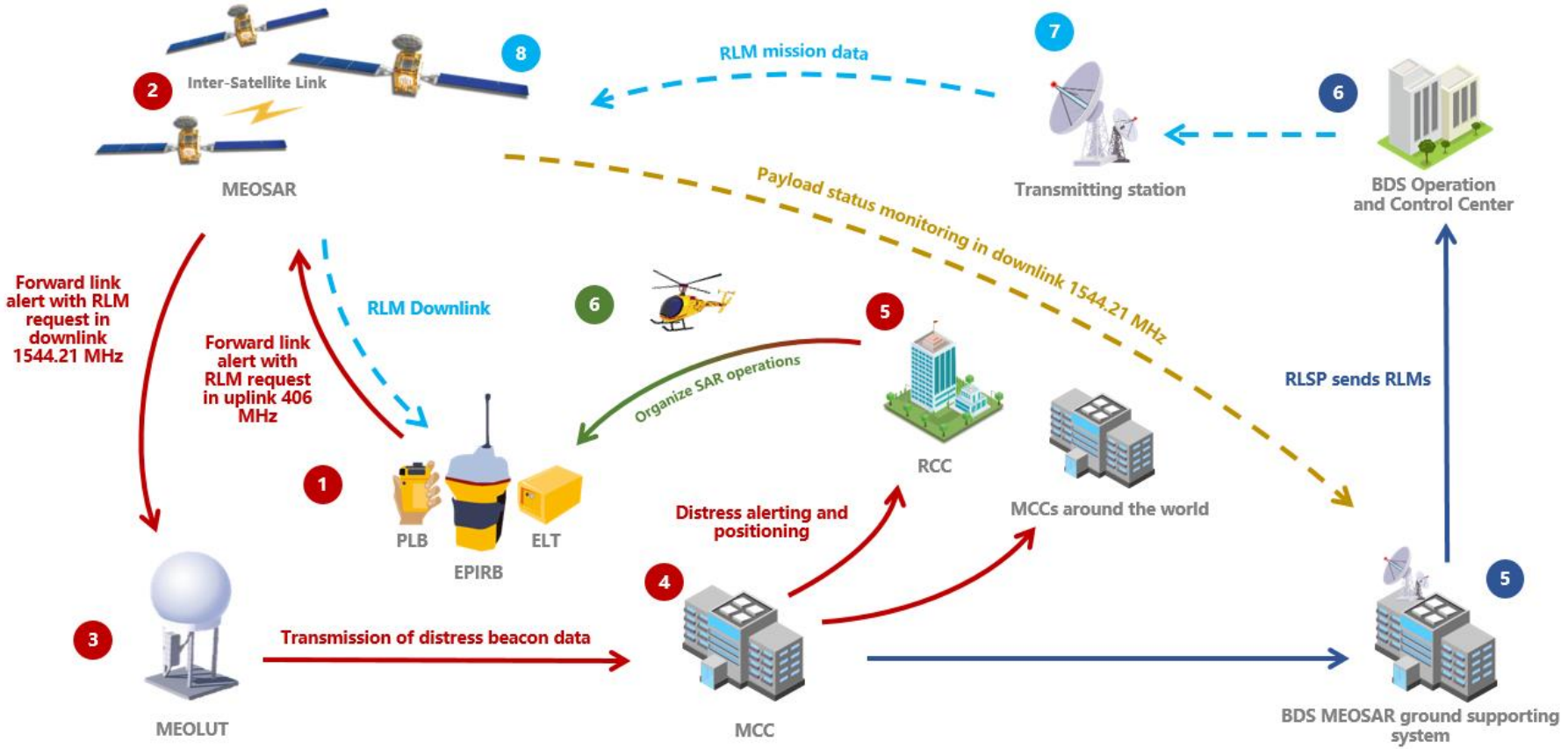
04

BDS International Services

BDS Internationalization

To promote the application of BDS, MOT has been facilitating the internationalization of BDS under the structure of international organizations such as IMO, ICAO, IEC and Cospas-Sarsat.

MEOSAR Service Process



Ground segment in China

Beijing MEOLUT

CNMCC

BDS MEOSAR Internationalization

2019.06

The inclusion of BDS into Cospas-Sarsat entered into the assessment period.

2019.11

6 BDS MEOSAR payloads were deployed. Ground supporting system was constructed to support regular monitoring on payloads status.

2022.03

Technical review on BDS MEOSAR payloads were successfully completed at CSC 66.

2022.06

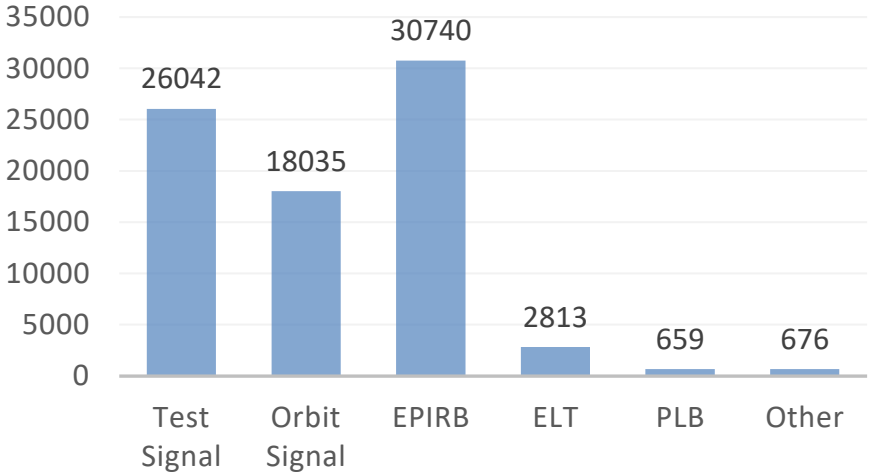
Revisions to Cospas-Sarsat operational and technical documents to include BDS information were completed at JC 36.

2022.11

The Declaration of Intent was signed.
At CSC 67, China become a space segment contributor of Cospas-Sarsat through BDS MEOSAR.

Applications of BDS SAR Service

SAR live exercise



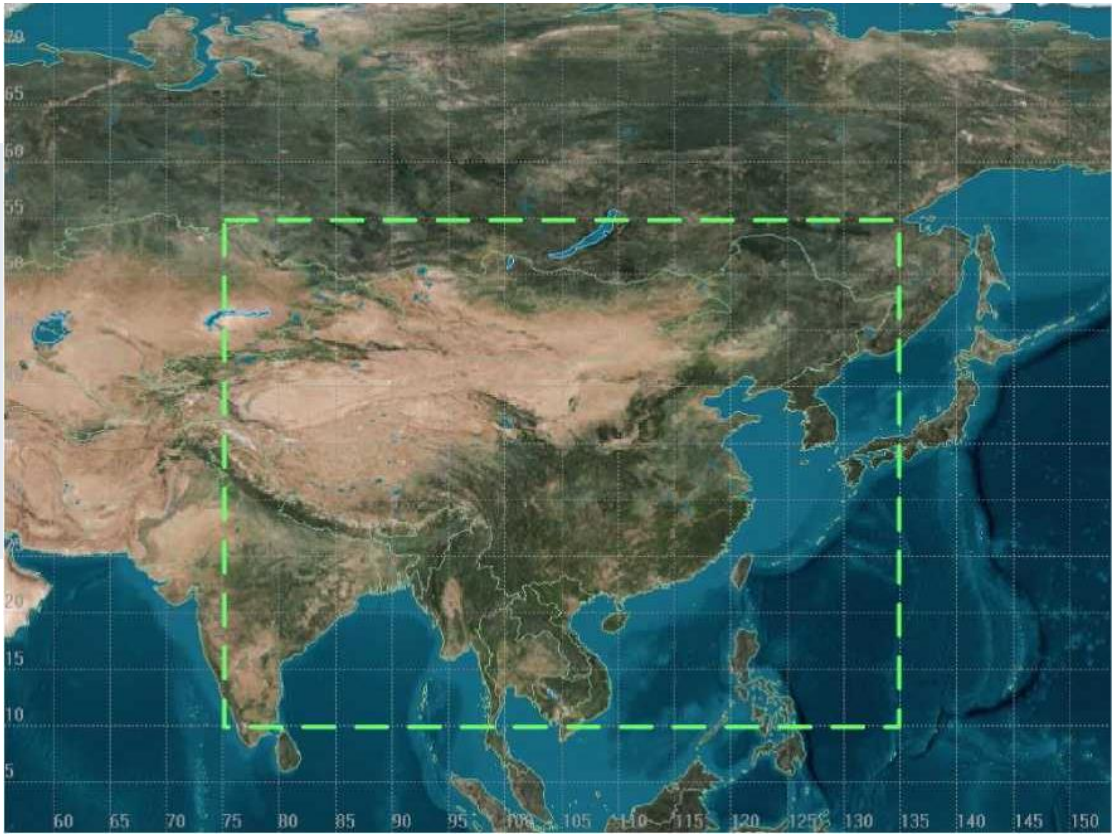
Statistic of signals received during test operation

In 2021, China carried out the national SAR live exercise. The functions and performance of BDS international search and rescue service in practical conditions were demonstrated and the full service and whole process of distress alerting were verified.

By October 2022, the BDS MEOSAR System had received a total of 34,212 distress alert signals (including repetitive alerts) from 1,902 beacons during its test and trial operation.

BeiDou Message Service System

Capable of providing GMDSS compliant services for countries in the Asia Pacific region such as Cambodia, Malaysia, Philippines, Viet Nam and so on.



Application in multiple scenarios

Position Report

Dynamic Vessel Monitoring

Meteorological Warning

Safety Information Broadcasting

Emergency Response and Search and Rescue

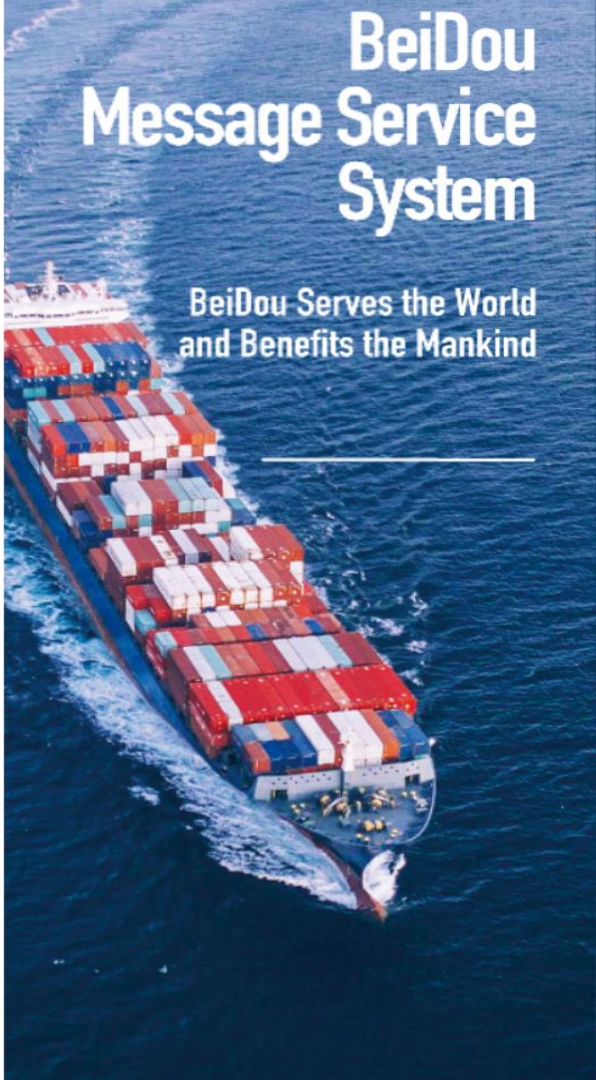
Maritime Distress Alerting

Terminal Interface

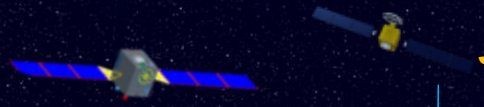
BDMSS Maritime Mobile Terminal

Recognition of BDMSS into GMDSS

- A functional component of BDS providing message communication service with priority features, distress alerting service and Maritime Safety Information broadcast for vessels to enhance navigation safety.
- BDMSS was recognized as a GMDSS mobile satellite system at MSC 106 with CTTIC as a recognized GMDSS service provider (MSC.529(106)).



Progress Chart



May 2018

Submitted the application for the recognition of BDMSS into GMDSS at the 99th session of MSC.

January 2020

IMO approved the self assessment and invited IMSO to conduct technical and operational assessment.

July 2020

CTTIC and IMSO signed the agreement on technical and operational assessment to initial the assessment process

January 2022

Submitted information papers to IMSO and held online technical meetings.

February 2022

Conducted an online assessment and developed an assessment report for review by NCSR 9.

June 2022

IMO NCSR 9 reviewed the assessment report.

July 2022

Conducted the on-site assessment to verify BDMSS functions.

Future

To provide GMDSS services after the recognition by IMO.

BDMSS Application

- In service since 2003
- More than 700,000 users in total
- Serving more than 150,000 maritime subscribers
- Delivering 450,000 messages and position reports per day on average
- Single message length: 14,000 bits
- Service priority: distress, urgency, safety and routine
- Capable of MSI broadcast

Vision and Mission

China’s BeiDou, World’s BeiDou

*** Modernized**
*** Intelligent**
*** Green**
*** Efficient**
*** Digital**
*** Safe**

TRANSPORT

Benefiting human life!

Thank you!

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