BDS/GNSS Applications in Intelligent Transportation System

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Transportation status in China

144,900

3,296

2017 Statistical Bulletin of Transportation Industry development--Ministry of Transport of the People’s Republic of China

14,502,200

27,578

21,000

Transportation is the largest user groups of BDS/GNSS.
Current BDS/GNSS Users in Transportation

- **Trucks**: More than 5 million
- **Buses**: About 80,000
- **Official service vessels**: More than 300
- **Fishing boats**: More than 40,000
- **Postal vehicles**: More than 24,000
BDS/GNSS in Road Transportation

The First BDS/GNSS Demonstration Project in Transportation

- Install BDS/GNSS terminals on vehicles
- Construct a nationwide platform
- Connect more than 5 million vehicles via internet
Using BDS/GNSS to improve road safety

Excellent achievements:

- Deaths and injuries ratio has been decreased by 50%.
- Change the driving behavior to improve road safety.
- Drivers receive real-time traffic information.
Using BDS/GNSS to improve maritime safety

The Second BDS/GNSS Demonstration Project in Transportation

Maritime safety application

- Distribute 400,000 sets of BDS/GNSS water safety equipment, i.e. EPIRB
- 40,000 fishing boats installed BDS/GNSS for RDSS service
- Install BDS/GNSS terminals on the official service vessels
- Construct Maritime Safety Management Platform based on BDS/GNSS
The train started from Xi'an on Sep. 16, 2017 and arrived in Hamburg, Germany on Oct. 21, 2017. The BDS signal will cover the route by the end of this year.
BDS/GNSS applications on aviation

BDS/GNSS test has been carried out on the ARJ21 aircraft.

- Airborne BDS/GNSS receiver function and performance
- Based on BDS/GNSS ground-based augmentation system to achieve class I precision approach performance test flight verification
Ongoing projects
Using BDS/GNSS to improve highway mobility

Using BDS/GNSS on free-flow highway toll collection

Existed toll station problems

Congestions

Accidents
Current free-flow toll collection test using BDS/GNSS

Beidou Free-flow Toll Collection System
Using BDS/GNSS to serve the inland rivers

BDS/GNSS in the field of inland rivers:

- Develop and distribute 16,000 BDS/GNSS terminals
- Strive to take the lead in achieving full coverage of BDS/GNSS high-precision applications of inland river.

Yangtze River
- Vessels dynamic monitoring
- Emergency management and auxiliary command
- Shipping information service

Lancang River
- Cross-border ship safety supervision

Xi River
- Ship lock infrastructure monitoring
Promote BDS/GNSS to serve the international maritime distress management

Improve the COSPAS-SARSAT capability of the international Search And Rescue (SAR) service

- BDS/GNSS has been written into *COSPAS-SARSAT 406 MHz MEOSAR IMPLEMENTATION PLAN (C/S R.012)*.
- Will provide return link function.
- BDS MEO-SAR payloads are in orbit test now.

- **2016** Proposed BDS/GNSS into COSPAS-SARSAT
- **2017** Participated in the 31st Joint Committee Meeting of COSPAS-SARSAT
- **2018** Participated in the 59th Council, and established a multinational expert group.
- **2018** Participated in expert group meeting to deal with BDS/GNSS-GALILEO frequency compatibility problem.
BDS/GNSS in future: Mobility

2020

Provide better infrastructure with BDS/GNSS service

2025

To construct intelligent V2X infrastructure and smart vehicle, to improve the mobility for different transportation choices.

An intelligent transpiration system based on BDS/GNSS
2018

THANKS!