GNSS Application & Practice in Fishery and Timing in China

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BeiDou Navigation Science & Technology
4 GNSS

BeiDou  Navigation Science & Technology
BeiDou (COMPASS)

- RNSS
- RDSS two-way ranging capability
  - Short Message Service
  - Timing
- 9 satellites
Fishery application

• Strong requirement for
  – maritime safety
  – Real time production information
    • 480K fishing boats, including 280K maritime fishing boats
    • 2010, 15.16 Million tons
  – Location

• GNSS + GIS + AIS
Fishing Information System

- BeiDou SMS
- BeiDou&GPS positioning
- Multi-Sensors
- Mobile communication & Internet
- AIS

Fishery Service
Primary functionalities

- Collect Fishing information
- Dispatch and monitor fishing boat
- Acquire and analyze fishing record and sea-surface temperature
- Communicate between fishing boat, center and mobile
- Historic record
- Emergency response
Control Center

- Fishery data collection, storage and analysis;
- Boat surveillance;
- Auxiliary information service (weather, news, SMS);
- Rescue dispatch;
Onboard devices

- Camera
- BD+GPS
- Panel
- AIS
- Emergency button
- Sea-surface temperature sensor

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Panel Functions

- Diary;
- Navigation;
- Geographical information;
- SMS;
- Warning;
- Video
Electric power timing application

• Traditional electric power system
  – 1 microsecond

• The new generation smart grid
  – 100 ns
Local area time synchronization management system based on BeiDou
Distributed time synchronization and control system.
Customer’s requirements on GNSS

• PVT → LBS

• Multi-GNSS
Conclusion

• Beidou has been in large scale applications in fishing and timing since 2007
• It has been increasingly proved to provide additional safety and information services to many users.

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