COMPASS Innovative Application

China National Administration of GNSS and Applications
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COMPASS Satellite Navigation Demonstration System

In 2003, COMPASS Satellite Navigation Demonstration System was in operation.

The system features:

- Quick positioning
- Timing with high accuracy
- Position monitoring
- Combination of positioning and short message communication
COMPASS Application Fields

- Mobile target monitoring
- Rescue activity
- Marine
- Fishery
- Surveying
- Disaster forecast
- Electricity monitoring and controlling system
- .......

It plays an important role in the national economic and social development. It is an important tool in navigation, timing and communication especially when terrestrial communication systems are not available.
Registered users
COMPASS in Forest Fire Prevention

Background

Forest Resource Overview

- Forests are distributed in Northeast, Northwest, Southeast China
- There are about 130 million hectares of forest
Background

- Damage of Forest Fire
  - Forest fires break out every year
  - Huge damage to people, wild animals, natural resources and environment

- Forest Fire Prevention Problems
  - Defectiveness of current fire detecting devices
  - Lack of effective communication devices

- COMPASS-based fire prevention system
  - An efficient forest fire prevention (FFP) mechanism by taking full advantage of various technologies, especially of COMPASS System has been established.
Why choose COMPASS?

- COMPASS System covers the entire area of Chinese forest with no blind area
- Provides positioning and short message service at the same time—efficient commanding
- Qualified COMPASS terminal devices—portable, low-energy consuming and high temperature resistant
Fire truck equipped with COMPASS Terminal

Beidou Terminal
When to use COMPASS?

- Stage I: Fire risk analysis and fire detection
  - COMPASS-based fire indicator collection
  - COMPASS-based fire risk analysis

- Stage II: Fire fighting process
  - Positioning: fire and fire fighter
  - Communication: fire fighter ↔ command center
    - fire fighter ↔ fire fighter
    - fire fighter ↔ mobile phone
  - Fire fighting route plan----based on navigation and GIS

- Stage III: Post-fire assessment
  - Damage area surveying
  - Data collection automatically
What is COMPASS-based Forest Fire Prevention System Composed of?

- COMPASS Satellite
- Command Center
- COMPASS Data Collection Device
- COMPASS Handset
- Temperature and Humidity Sensor
Functions of the sub devices

- COMPASS Satellite
  - Communication,
  - Navigation
- Command Center
  - risk analysis
  - dispatching fire fighters
  - fire fighting command
- COMPASS Data Collection Device
  - located in forest
  - transfer sensor detected data
Functions of the sub devices (continue)

- COMPASS Handset
  - communication
  - positioning
  - emergency alarm
  - search for help
- Temperature and Humidity Sensor
COMPASS-based Forest Fire Prevention System

Dispatch
Fire Fighter Position Tracing
### Fire Alarm

**Short Message**
- danger alarm
- search for help
- fire damage
Features

◆ For Command Center
  ◆ Data Collection
  ◆ Fire Alarm
  ◆ Fire Fighter Tracing
  ◆ Fire Fighting Dispatch

◆ For Fire Fighter
  ◆ Fire Field Position Display
  ◆ Navigation
  ◆ Fire Fighting Route Plan
  ◆ Emergency Alarm

Positioning and communication are essential for Forest Fire Prevention.
COMPASS System is competent for Forest Fire Prevention.
COMPASS-based Forest Fire Prevention Solution is effective and irreplaceable.
COMPASS application in water resources

- There are many water monitoring stations—monitoring rainfall, hydrological change, disaster prevention and transmitting collected information.

- Short message function—The signals of COMPASS system, combined with mobile phone signal, will be rapidly transmitted through short message after receiving rainfall and hydrological information.

- It helps to evacuate downstream people, protect the safety of life and property at the earliest attention, reduce the possible damage of flood disaster.
What is COMPASS-based Water Resources Monitoring System Composed of?
COMPASS application in meteorology

- COMPASS-based digital message transmission for meteorology has been developed.
- The system can mainly:
  - collect the digital message automatically.
  - Transmit the message to National Meteorological Department and local weather stations.
  - Provide visualization of the distribution of weather stations on GIS platform.
COMPASS-based solutions in other industries

- Fishery industry
- Water hydrology
- Special vehicle safety information
- Container safety and information service
- Travel safety in remote area
- Long-distance safety monitoring
- ......

What are the future applications of COMPASS?
THANK YOU!