Power System Emergency Command System LBS technology

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Abstract: Through the study of grid emergency command system of LBS technology, using LBS technology in command system, real-time location information gathering equipment and personnel, and for tracking the location and appearance. In the power grid emergency rescue process, to achieve accurate command, real-time scheduling purposes.

Keywords: LBS Emergency Command System Scheduling

1. INTRODUCTION

Emergency equipment and emergency teams to provide emergency rescue and rescue equipment and human resources required, related to the incident site control, recovery and personnel assistance and so on. Emergency equipment, emergency teams of information, network, precision and visualization to improve the power grid emergency rescue system is necessary and extremely important work.

Grid emergency command system uses LBS (Location Based Service) technology. Through the integration of LBS, real-time location information gathering equipment and personnel to achieve their position tracking and display, in the power system emergency rescue process, to achieve accurate command, Real-time scheduling purposes.

2. SYSTEM COMPONENTS

The grid emergency command system consists of the following parts:

Emergency command platform, digital trunking communication system, based on RDSS grid disaster information reporting system,

Emergency mobile APP, application integration gateway (AIGW).

3. LBS TERMINAL TECHNOLOGY DESIGN

According to LBS demand grid emergency command system analysis, LBS terminal primary integrated device includes Hytera handsets, the Electric Division Beidou terminal wizard, emergency mobile terminal APP.

(1) LBS Hytera handsets

Emergency repair center through the successful construction of Hytera digital cluster system, in the face of large-scale natural disasters, public network paralysis, telephone calls are limited, can still be effective and timely reporting of field information to the emergency command center, to make effective decisions at the first time.

The system is constructed using a digital trunk network Hytera X1P handheld units, which is a support IP67, handheld device, the device built-in GPS positioning module, support for GIS applications.

In order to implement X1P handheld station real-time location of visual display, we need to X1P handheld station location information regularly transmitted to the emergency command platform, its real-time tracking and display. Therefore, the need for digital cluster system business integration, the digital cluster system organization information, personnel information and group information together to the emergency command platform, by the emergency command platform to participate in the command and scheduling.

(2) LBS CLP Section Compass Wizard terminal

Beidou Wizard terminal, support communication Beidou satellite S, short message communication, RNSS of B1, L1 frequency combinations geopositioning L frequency point. Beidou Wizard terminal with Bluetooth function, can be used with the smart phone. Mobile phone in the absence of mobile network signal in the case, through the Beidou wizard terminal, can achieve long-distance, all-weather satellite communications.

In order to realize the visual display of the real-time position of the Beidou Elite terminal, it is necessary to transmit the Beidou spirit position information to the emergency command platform to realize the position tracking and display.

(3) Emergency mobile APP of LBS

A. LBS development needs of emergency mobile APP

Emergency command platform construction process video information in emergencies occur on-site emergency response personnel can use the APP in the first time to the emergency command center back to the big screen live pictures.

In order to realize the position information using

the APP rescue personnel monitoring, we need to transform the APP, adding GPS location information acquiring software modules, and synchronize information between location and emergency command platform.

B. LBS functional design of emergency mobile APP

Emergency mobile APP mobile applications deployed on the province's mobile application platform, smart phones via the Internet, VPN, APN access mobile application platform, the platform through the external network and exchange secure data smartphone position information to emergency command platform synchronized. The system architecture as follows:

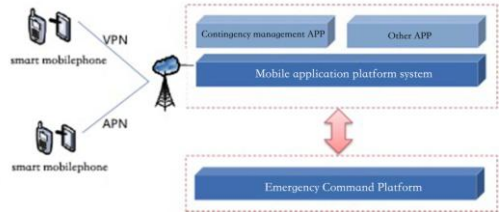

Fig. 1 system architecture

Through the development of location services module, access to current mobile phone GPS location information, location information timing synchronized to the back-end database. While synchronizing the location information, the user account information is also synchronized to the backend database.

(4) Terminal Performance Design

LBS data synchronization interface performance requirements of a single position data the average response time <= 2s / bar, the highest single data response time <= 5s / bar.

Data synchronization cycle can be flexibly set to achieve near real-time location information visualization, minimum synchronization period should be allowed to set minimum and emergency command platform GIS module refresh time consistent.

4. LBS SYSTEM INTEGRATION DESIGN

LBS integration aims to integration Hytera digital cluster management systems, applications and Power Division Communications Gateway system and emergency command platform integration, and achieves Hytera X1P handsets and Compass wizard terminal real-time location information in sync with the command big-screen emergency command platform Visual display. Application integration system architecture diagram .

5. CONCLUSION

Through the research on the grid emergency command system of LBS technology, designed in the chain of command and the use of LBS, it integrates four sub-systems: 1 Hytera digital trunking communication system, responsible for implementing the management cluster terminal, acquisition and management of location information ; 2 based on RDSS grid disaster information reporting system, is responsible for Compass wizard terminal short message access and management, location information acquisition and management: 3 emergency mobile APP, to obtain position information is responsible for the use of emergency mobile APP personnel and management and synchronized to the back-end database; 4 application integration gateway (AIGW).

In short, the use of the power system emergency rescue process LBS, by LBS integration successful emergency command platform to achieve grid emergency rescue process, give full play to the advantages of location information services, to the sight, to planning, to the command of emergency Command effect.

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