

Multi-Terminal Realization on Construction Engineering Safety and Quality Supervision Integrated Platform Based on Real-Time Image Information Collection Network

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Abstract: In this paper, the whole system is designed as two parts separated from the front and the back. The Android smartphone is used as the hardware platform to realize the information collection, and the centralized processing and persistent storage of the collected data is realized by building a server in the background. According to the characteristics of engineering quality and safety information and the needs of management personnel, mobile terminal technology and Internet of Things technology are applied, software platforms are developed, a mobile terminal-based engineering quality and safety information collection system is established, and practical engineering applications are combined. Strengthen the construction of quality supervision teams, improving professional quality, establishing a restrictive mechanism, etc., and put forward suggestions for improvement.

Keywords: Multi-Terminal Realization, Construction Engineering Safety, Quality Supervision Integrated Platform, Real-Time Image Information Collection

1. INTRODUCTION

Quality control and safety control are the main control contents in the construction phase of construction projects. Whether the quality of a unit project meets the requirements is usually determined by the quality acceptance of all the inspection batches that constitute it [1], and the project safety control is mainly composed of safety inspection and acceptance of sub-item projects that are more dangerous. On September 4, 2014 [2], the Ministry of Housing and Urban-Rural Development held a national video and teleconference on the two-year project quality control action, and issued the "two-year action plan for project quality control" (hereinafter referred to as the "two-year action plan") [3]. In order to promote the construction of national construction market supervision informatization, the Ministry of Housing and Urban-Rural Development took the two-year project quality control action as an opportunity to [4] strive to complete the construction of 31 provincial-level construction market supervision and integrity integration work platforms in three batches before the end of 2015 [5].

The workload is also getting bigger and bigger. If all these tasks are done manually by the staff, there will be a lot of troubles, such as errors occur [6], errors are not easy to be retrieved, files are easily lost, and so on. It will be much better, it can help the staff to work, the workload will be reduced, and the work process will be simplified [7]. The reason for the frequent occurrence of engineering quality accidents is inseparable from the formation process and characteristics of the engineering quality itself. First of all [8], the engineering project has a long construction period. Characteristics, project quality is formed in each stage of the construction process, and each stage of project construction is closely connected, restricted and influenced each other [9]. This paper analyzes the current status of government quality supervision of construction projects at home and abroad by studying the quality supervision and management mode of construction projects [10], put forward the reform thinking of

the government supervision and management mode of construction project quality [11].

In view of the new situation of construction industrialization, a new mode of engineering quality behavior supervision [12], engineering entity quality supervision and innovation supervision is proposed. So as to provide theoretical reference for related research, and also provide reference for the improvement of construction project quality government supervision mode [13]. The main functions of the system are: 1) Receive the wireless broadcast signal from the base station, decode the signal in the baseband receiver part of the system, and separate out the calibration point data information that can establish a positioning aid database [14] 2), the system software terminal is completed Data interaction with the baseband. The air interface of GSM adopts TDMA (Time Division Multiple Access, Time Division Multiple Access) technology [15], which simply means that different users are carried by dividing time slots. Each time slot is 0.577ms, and 8 time slots constitute a TDMA frame, that is, the interval for the user to receive the next round of information is 4.615ms [16]. The allocation of TDMA frames and time slots is shown in Figure 2.1. my country's self-developed Beidou satellite navigation system Beidou Navigation Satellite System, BDS) is the third mature satellite navigation system [17] after the US Global Positioning System (GPS) and Russia's GLONASS Satellite Navigation System (GLONASS) [18].

In actual projects, the personnel who fill in the quality and safety acceptance materials are often not the acceptance personnel [19], and the filling time of the acceptance materials often lags behind the actual acceptance time, which leads to the disconnection between the inspection and acceptance materials and the project [20], which is not timely and accurate, and cannot be true. Reflect on-site engineering quality and safety. Making full use of the achievements of the original "Sichuan Province Construction Project Information Disclosure and Integrity System Management Information Platform" [21], a unified work platform for the integration of construction market and project quality and safety supervision

in the province has been built (hereinafter referred to as the "Integrated Work Platform in Sichuan Province"), completed the data docking work at the provincial and ministerial level [22]. The market share of the construction industry will gradually decrease. As far as the current total supply and demand in my country's construction market is concerned, the number of employees in the construction industry grows faster than the number of investment [23], and the growth of fixed asset investment is lower than that of the number of employees in the construction industry. After joining, with the entry of foreign construction enterprises, the main body of the construction market will increase greatly. The US government believes that in order to effectively control the government's quality management, it must formulate relevant laws and regulations [24].

2. THE PROPOSED METHODOLOGY

2.1 The Offsite Data Center Cloud Backup

The key is to effectively implement the system, to establish the quality awareness of all parties involved in the project, and the government can directly participate in the supervision of the quality of the construction project. The three-tier C/S structure divides application functions into three parts: presentation layer, functional layer and data layer. The solution is to separate these three layers clearly and make them logically independent. The original data layer has been independent as a DBMS, so the key is to separate the presentation layer and the function layer into independent programs, and to make the interface between the two layers concise and clear. The system is not timely enough. The positioning process involves the use of AT commands to exchange information with the base station. At the same time, it is necessary to receive GPS satellite data regularly and reach a certain amount. If the GPS signal cannot be received in a short time, or the received GPS satellite data is insufficient, the GPS satellite data will be received. It will affect the timeliness of the entire positioning process.

According to the main functional requirements of the information collection terminal, this paper divides the information collection terminal into three functional modules: base station information collection module, location information collection module, and data upload module.

2.2 The Innovative Architecture of College Sports Online Training Data

Sharing and tracking management, so as to carry out integrated management of practitioners, practitioners, engineering projects, and credit information, and realize the linkage management of construction market and on-site. For the testing of engineering materials, the contractor is generally responsible for sending it to a nationally recognized engineering quality testing agency for testing. When there is a project quality or a dispute between the owner and the contractor over the engineering materials and construction quality, the quality supervision engineer shall entrust a nationally recognized engineering quality inspection agency to conduct inspection, and the inspection fee shall be borne by the contractor, the owner or the responsible party in the quality supervision company. Establish construction market credit files.

Bad Behavior Recording Applications. In order to strengthen the construction of the integrity system in the construction industry and standardize the construction market behavior, the Ministry of Construction has issued a series of measures for the management of integrity behavior. Through the

establishment of the integrity files of the responsible subjects of all parties involved in the construction, the bad behaviors of individuals or enterprises in the process of project construction are publicized, and bad records are formed, and an access and removal mechanism is set up in the engineering field. The data path algorithm mainly collects a certain amount of data (usually hundreds of groups of data) at the point to be measured, separates the multipath information of the signal from the measured data, eliminates the great error in the data, and obtains a representative Signal characteristic information of the signal at the current measurement point.

The MVC pattern was first proposed in the programming language Smalltalk-80 in the 1980s. Because this pattern has the characteristics of low coupling, high reusability, and high maintainability, it has been widely used and is the mainstream design pattern of J2EE. The model layer is the core of the entire system and corresponds to business processing. It mainly completes the data processing of submitted requests and feeds back the processing results to the view layer. The corresponding interface of the view layer is displayed. From the two conversion results, the minimum error of the four-parameter conversion is only 2.04m, and the maximum error is 6.39m; the minimum point error of the correction conversion is 2.63m, and the maximum point error is 5.51m. In contrast, the error interval of the corrected conversion result is small, and the conversion result is stable.

2.3 The Off-Site Data Center Cloud Backup for College Sports

The four-parameter conversion has certain requirements for the conversion parameters. In order to meet the conditions, it is not possible to use all the data to solve the four-parameter solution. In order to solve the problem of untimely security data acquisition, this study proposes a mobile terminal-based security data acquisition system.

When conducting inspections on sub-projects with high risks at the construction site, hidden dangers can be discovered in time, feedback can be reported in a timely manner, problems can be rectified in a timely manner, and a rapid and effective rectification and emergency response mechanism for hidden safety hazards can be established. The competent department completes the approval, supervision, management, and law enforcement supervision of the project, and the enterprise completes its own declaration, filling, and supervision work, and controls the preconditions of the business process according to the relevant laws, regulations and management methods, so as to ensure that the project supervision link is free of charge to the greatest extent. There are no omissions and no omission of project information. The internal supervision content and internal management of the supervisory agency have a relatively fixed scope and relationship. Its organizational structure should be combined with the division of functions and project division of labor, and a matrix organizational structure can be used to ensure internal business contacts. Integrity, and can adjust the supervisory personnel in time according to the number of engineering projects. The construction unit shall contract out the project to a design and construction unit with corresponding qualifications.

It is not allowed to change the construction drawing design documents without authorization. If it is really necessary to change, the change procedures shall be handled in accordance with the regulations. Major changes involving structural safety, use functions, changes in assembly rates, etc., shall be

re-examined by the original drawing review agency. Strictly inspect the prefabricated components closed.

3. CONCLUSIONS

This research has established a new model of engineering quality and safety control based on mobile terminal information collection technology. After the project implementation, preliminary results have been achieved, but it is still being explored and matured. Mobile terminal technology is in the stage of rapid development, and the use of mobile terminals necessary for manpower and combined with this system platform is used to carry out engineering quality. Build an information platform that meets the requirements of the new nature, through the internal management of the information system, establish an information database, and maintain it in time.

4. REFERENCES

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