Research on the Optimization and Application of Intelligent Data Acquisition and Alarm System Based on Internet of Things

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Abstract. In the analysis of intelligent data collection mode of the Internet of things, according to the optimization mode of integrated collection system, the Internet of things with high standards, high performance and high expansion is constructed to expand the application of intelligent data collection mode. Through data monitoring and data collection, the expansion of thinking design mode is effectively implemented to strengthen the application of intelligent technology of the Internet of things. Through effective analysis of data monitoring system mode, control standards under monitoring management can be adjusted, deployment elements of intelligent terminal equipment can be clarified, and the implementation and expansion of work efficiency and safety standards can be continuously strengthened according to the requirements of working mode. Focusing on the optimization of integrated Internet of things technology, this paper will explore the acquisition and analysis of intelligent data mode and alarm system of the Internet of things so as to combine the Internet of things model to expand applications and improve management and control.

Keywords: Internet of Things, Data Acquisition, Alarm System

The Internet of things is based on the transmission of data signal recognition mode, sensor, information positioning system, laser scanning, and other information systems. It’s the basis for building a network to focus on cooperative location, adjustment of data fusion under the Internet, clarifying the impact of information interaction, communication, intelligent identification, tracking, positioning, monitoring, management and other related network data models. According to the development and construction requirements of modern enterprises, we need to integrate the developing and positioning system of Internet of things and implement intelligent data collection. In addition, we should also pay attention to the construction and expansion of resources, ensure the construction needs of all kinds of social equipment, focus on the matching of communication terminal network, and implement remote data monitoring through network serial port. According to the equipment functions, production quality, model standards and other analyses, the data collection and monitoring management mode is adjusted, and the product development is emphasized [1, 2]. Finally, the application of intelligent data collection of the Internet of things should be strengthened according to the market development needs, and the design scheme and system architecture mode should be
clarified.

1. System architecture pattern standard

1.1. Meaning

The Internet of things, based on the data collection and system monitoring mode, strengthens the continuous collection of intelligent data according to the operation and application mode standards of intelligent IoT devices [3]. Through the data terminal, the platform of communication standard mode is acquired, the monitoring and management application of intelligent data mode is deployed, the access of equipment is strengthened, and the data is effectively collected and monitored. In the application of data mode, the system needs to implement effective monitoring and management, pay attention to data distribution of collection and measurement, strengthen multi-function mode analysis of alarm, and improve intelligent perception application. According to the intelligent deployment of the system, attention is paid to the deployment of work efficiency, safety and comfort. The comprehensive selection and allocation of data collection should be analyzed, the information and update of mode application should be adjusted, the intelligent service management of high quality and high standard should be focused. According to the overall configuration requirements of the Internet of things system, it is necessary to provide intelligent development services and applications for enterprises on the basis of system construction and development.

1.2. Architecture pattern analysis

In the analysis of intelligent data acquisition and system monitoring mode of Internet of things, the composition and allocation of software and hardware should be focused. According to the intelligent data collection of the Internet of things, we should strengthen the application of the intelligent equipment of the Internet of things, analyze the remote distribution of embedded system, and implement the integrated monitoring application of the Internet of things data in a combination of the monitoring system mode of the equipment. Through the data collection of wireless mode, we should pay attention to the deployment of sensor data, especially to the analysis of the front-end device data and information collection in the embedded operation mode, clarification of the data analysis and processing applications, determination of the data package conversion, strengthening of the proposition analysis of the response mode, and adjustment of the upper application information and data deployment.

Through system protocol collection, we can determine the IoT analysis of terminal equipment, strengthen data monitoring and intelligent collection, adjust intelligent terminal variables, and determine the actual curve changes and standard requirements of various devices. The analysis of possible anomalies should focus on the query analysis of information and events. Through data matching, the multi-remote terminal control mode under the system architecture is adjusted to ensure the accuracy and rationality of the overall protocol of equipment operation.

2. System construction and design

2.1. Technical standards adopted in system design

OOAD technology is object-oriented analysis and design. Through accurate system-wide framework analysis, it adjusts the unstable requirements, determines the object, clarifies the organizational requirement, and strengthens the comprehensive application of the framework system. It adjusts design elements according to organizational requirements and architectural pattern system. Through IOC data inversion of control, it can adjust the system program code data standard. Combined with the content of the caption, it can carry out effective profile standard analysis and adjust the organizational objects of the reflection system. The installation programming content is determined by the system design. Through the configuration file, OOAD can implement dynamic organization, adjust the system change pattern, determine the configuration standard, and provide the necessary data module coupling
application.

2.2. Analysis based on MVVM design module application
According to the MVC model view controller operation standard, the code is determined through an effective software data acquisition mode. According to the development efficiency, combined with the structural mode, the tight coupling of each module is analyzed, and the extended test standard is adjusted. According to the module involved in MVVM, tight coupling is implemented, the decoupling process of the module is strengthened, and the complex demand changes in R&D are adjusted in time. According to the data collection and monitoring of the Internet of things, necessary view mode allocation is implemented, relevant VM layers of view model are analyzed, standards under the business model layer are adjusted, and the deployment of data binding time is strengthened. Interface services are used to do a good job of data separation and coupling distribution, which improves the accurate division of labor adjustment of the UI design code programming.

2.3. MTCP data model
According to MTCP data model and OSI model, the transfer protocol standard of application layer file is adjusted. By connecting different types of modes, the relationship between network devices can be adjusted, the client-side service communication can be focused, and a feasible mode also can be established to conform to the communication application of automatic devices. By adding structural support, we can adjust standards of TCP/IP data request, define port access patterns, deploy protocol approaches, identify service applications that supply definition code data, and analyze acute PDU data protocol unit by functional request. By collecting the main data codes, the changes of the intelligent collection equipment of the Internet of things will be adjusted, and the application of the module interface can be finished.

| System structure module | Functional advantage |
|-------------------------|----------------------|
| OOAD Modular            | Program code tree conversion, dynamic monitoring, data configuration |
| MVVM Modula             | Fast coupling processing, fast level conversion |
| MTCP Modula             | Simple structure control protocol, strong application of data code variable structure |

3. Design strategy of IoT alarm system under system structure

3.1. Determine the design pattern of interface feedback dependency
According to the system interface programming standards, the analysis of object functions should be focused, the operation mode of equipment and objects applied should be adjusted. Through the unified interface abstract thinking model, the collection object should be adjusted. Through the configuration of standard data collection objects, flexible changes in design need to be focused, and functional requirements can be improved in a combination with the configuration standard. In that way, the coupling of objects can be achieved.

3.2. Configuration standard
According to the multi-resource integration and classification mode, the application of monitoring terminal equipment under different data should be adjusted. Through dynamic configuration compatibility, the terminal standard of equipment needs to be determined. We can adjust the configured theme display interface through different device policy mode allocation to expand the analysis according to the system monitoring function object, make full use of the dynamic device and theme display function, strengthen the function change under different codes, and complete the standard configuration adjustment.
3.3. Countermeasure mode analysis of logical hierarchical design
Three layers are constructed according to the logical layer of the system, and data distribution under the standard of view mode is determined through business simulation layer, logical layer, analysis layer, communication layer, resource layer and intermediate layer. According to the standard of computer server mode, the communication equipment mobile gateway elements of the system can be adjusted, the data analysis under the warning instruction will be focused. The intelligent integration of the Internet of things can be completed through the mobile terminal, and the application of the physical deployment mode can be effectively realized.

3.4. Analysis of system logical structure pattern
According to the relevant data logical structure mode, the data distribution trend of data change and the configuration of different situations in the interactive mode can both be adjusted. Moreover, the operating standards in the view mode can be analyzed, and the data analysis in the encapsulation business layer can also be strengthened. The description content of the visual monitoring device can be adjusted by displaying the response allocation, which makes various resources of the monitoring logic can be allocated, and network adapter standard can be analyzed.

| Classification standard of logic layer design |
|-----------------------------------------------|
| Simulation layer | Analytic layer | Communication layer | Resource layer | Middle layer |

4. Conclusion
In conclusion, the intelligent data alarm system of the Internet of things is analyzed according to different design modules and logical stratification standards. By adjusting the logical mode of data and improving the application effect of logical data monitoring and alarm, the deployment of a security network can be realized, which is in line with the overall development trend of the Internet of things in the future.

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