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Research Article

Display Design Model Based on the Internet of Things Prototype System

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The display design of the Internet of Things prototype system is the top priority of the design of the display space, and it is also a problem to be studied in the future development of the display space. However, the current research on the display design direction of IoT prototype system is not deep enough. This article mainly studies the display design model based on the Internet of Things prototype system. This article mainly uses the related technology of IoT heterogeneous protocol to analyze the structure of the IoT prototype system and proposes to use the heterogeneous network to speculate the future development trend of the IoT. In the aspect of display design, applications such as network information retrieval and data mining at the level of missions are accelerated in depth so that the arrangement of multiple factors is more reasonable. Finally, the data conversion function is used to design each port in the IoT accessor architecture. The protocol is adapted and converted, and the parsed protocol is uniformly encapsulated and uniformly transmitted on the platform. The model in this article integrates various heterogeneous detection networks, realizes the standardized operation of top-level applications, and completes the decoupling of top-level applications. It is encapsulated in a unified protocol and meets the standard operation requirements of web applications. The experimental data in this article show that the frequency of the audio signal designed by the system under normal working conditions is mostly concentrated at about 180 Hz, and the highest frequency value is less than 800 Hz; when the system has a partial discharge failure, the frequency of the audio signal is mostly concentrated between 1400 Hz and 1800 Hz. The experimental results of this article show that the prototype system of the Internet of Things can identify and judge the state of the display design model. Applying it in practice can effectively solve practical problems such as large-scale data storage of the Internet of Things.

1. Introduction

1.1. Background and Significance. In recent years, the Internet of Things, an important part of the new generation of information technology, has received widespread attention from the technology community. The basic characteristics can be summarized as overall perception, reliable transmission, and intelligent processing. In order to understand the spread and diffusion of information, the objects in the environment are connected. In the development of modern science and technology, the extension of the Internet is called "Internet of Things." The terminal can be extended to certain objects. In order to effectively process and distribute relevant information within the scope of the network, information can be exchanged with each other to achieve communication between different projects. The main responsibility of the system display design lies in the development and enrichment of multiple dialogues and communication possibilities between the IoT product configuration system and the audience group. In the communication activities, the design of the display should reflect the cultural characteristics of the display design system while conveying the information between the franchise store and the consumer group.

The Internet of Things itself is a complex network system. In addition, the application fields cover all walks of life, and there is inevitably a lot of overlap. The Internet of Things makes full use of various application programs, intelligent terminals, and sensing equipment, through identification, development of data, data collection, processing, and communication and other technical equipment and links. Display design involves multiple fields. It covers multiple disciplines such as visual arts, marketing, materials science, design psychology, and ergonomics. It is a creative act that transforms design concepts, ideas, and intentions into visual images [1, 2]. Display design is also a new visual expression technique produced in it. It is a creative act that transforms the idea, thought, and intention of the product to be displayed by the informant into a visual image [3]. In the visual sense, the design of the display in the prototype system of the Internet of Things is crucial, which determines the standardization and order of the visual process of the consumer group [4, 5].

1.2. Related Works. In recent years, many scholars have conducted research on the application of the Internet of Things. Li et al. [6] believed that the Internet of Things (IoT) can change people's lives by connecting everyday objects together. For example, in a grocery store, all items can be connected to form an intelligent shopping system. In this IoT system, cheap radio frequency identification (RFID) tags can be attached to each product and placed in a smart shopping cart, which can be automatically read by a shopping cart equipped with an RFID reader [6]. However, the application range of the system he designed is not enough, and a large amount of data is needed to verify the feasibility in real life. Yang et al. [7] found that the rapid growth of mobile IP and the emerging IoT and cloud-based applications are driving a paradigm shift in wireless networks. By taking full advantage of the freedom of space, large-scale multiple-input multiple-output (MIMO) technology ensures a significant increase in data rate and link reliability. He proposed a 128-antenna massive MIMO prototype system based on a time division duplex (TDD), which was designed to operate on a 20 MHz bandwidth. He realized the uplink real-time video and downlink data transmission according to the system hardware design of the demonstration [7]. Guo et al. [8] proposed an IoT architecture based on transparent computing to build scalable and manageable IoT applications. The proposed architecture includes five layers, namely end user layer, edge network layer, core network layer, service and storage layer, and management layer. It can provide centralized management of various resources (such as operating systems, services, and data) for IoT applications and enable on-demand services to be executed on heterogeneous IoT devices [8]. Previous studies have explored the construction of IoT prototype systems through cloud computing, biometrics, blockchain, and other technologies, but the development process is extremely complex, posing severe challenges to technical capabilities. At the same time, due to the complexity of the development process, the investment in development has increased. These studies have discussed the technical scale of the Internet of Things in many aspects, but with the continuous acceleration of technology updates, these studies are difficult to guarantee in terms of system performance and reliability.

1.3. Innovation in This Article. The main innovations of this article include the following: (1) Analysis of the Internet of Things technology and functional analysis of thematic exhibition display, combined with the discussion of multiple disciplines. (2) Finding the combination of information interaction, exhibition display, and Internet of Things technology and proposing the design principles and strategies of thematic exhibition display centered on the Internet of Things technology. The research in this article can provide ideas for related research on the Internet of Things and can also provide new research directions for demonstrating the improvement of design models.

2. Related Methods of Constructing Prototype System of Internet of Things

2.1. Analysis of Related Technologies of IoT Heterogeneous Protocols. The IoT heterogeneous sensor network (the small-world network theory is applied to the field of wireless sensor networks, and a statistical method of small-world feature quantities in wireless sensor networks is established) is a network composed of many different sensor nodes; otherwise, the network composed of the same nodes is called the same kind of sensor network [9, 10]. For example, in agricultural applications, since a variety of objects are to be detected, changes in the environment will have different contents to collect information, so it is necessary to collect temperature, humidity, soil salinity, and sunlight information. The function and energy consumption of each sensor node are different, and the node performance is also different [11, 12]. Therefore, this type of sensor network is called a "heterogeneous network," and a wireless sensor network is one of the most representative networks.

In the Internet of Things, the main development trends of home systems for exchanging information are generally as follows: Information communication is mainly to provide information to ensure proper communication between family and the outside world [13, 14]. Network contracts include software and hardware interfaces. This is because many manufacturers have the premise of cooperation in this industry. If they dominate, there is no unified standard [15]. The goal of the standard composition is to change the current "self-government" situation and establish its own tailor-made system. The integrated module can modify the interface between the modules, thereby achieving a high degree of scalability. At the same time, electrical appliances are switched to sleep mode at night, to avoid the long-term operation of electrical appliances, to save a certain amount of electrical energy, and to ensure home safety at night. Safety and convenience include the safety and start-up of alarm systems and technical equipment in emergency situations [16, 17]. Energy management includes the efficient use of energy and the management of HVAC (heating, ventilation, and air conditioning). Comfortable controls include automatic switching of home appliances, home access control, and remote control. Communication services include PBX and ISDN. Multimedia services include movies and TV, media and other related systems, remote video transmission, interactive TV, interactive order-based, and other services

[18, 19]. The general development trend of the Internet of Things is shown in Figure 1.

2.2. RDF Sentence Structure Importance Calculation Based on Link Analysis. Link analysis comes from the multidimensional analysis of hyperlinks in the web structure. At present, link analysis is mainly applied to the deep acceleration of network information retrieval, data mining, and web structure modeling in verification points [20]. Link analysis, simply put, is a referendum. The higher the vote rate of the target keyword, the higher the ranking of the keyword in the search engine. As a necessary means of optimization, external links are irreplaceable in their important position. The relevance of search engines has that web pages mainly depend on two factors: one is the location of keywords and the density of web page links of keywords; and the other is the analysis, also known as the popularity of links. Required classification [21, 22]: the principle of link analysis is that the more backlinks a web page has, the more likely it is to become a high-quality or important web page. Closely related to link analysis are the hub value and authority value. These two values interact with each other. The authority value refers to the sum of the authority values of all links exported to the page. This value is the sum of the pivot values of all pages where the import link is located [23, 24].

This article introduces the link analysis technology for evaluating high-quality or high importance RS in the IoT ontology. The structural importance of each RS in the ontology can be determined by its pivot value in GBM or EBM, the authority value of each term in T or T′, and the value of each RS in the calculation path of S or S pivot value [25, 26]. The calculation method of the structural importance of s judgment in RDF is shown in the following formula:

$$\mathbf{I_s}(s)\mathrm{Hub}(s), \tag{1}$$

where Hub (s) is the hub value of the RDF sentence s in GBM (EBM), which is the sum of the authoritative value Au (t) of all the exported links of s in GBM (EBM) to the term 1. The calculation method of Hub (s) is shown in the following formula :

$$\begin{gathered}\mathrm{Hub}(s)=\sum w_s * \mathrm{Au}(t_1)\sum w_p * \mathrm{Au}(t_2)\sum w_o * \mathrm{Au}(t_3)\\ t_1\in T,\ (s,t_1)L_s t_2\in T,\ (s,t_2)\in L_p t_3\in T,\ (s,t_3)\in L_0,\end{gathered} \tag{2}$$

where w_s, w_p, and w_o are the weights corresponding to the three connection types $\mathbf{L}_s$, $\mathbf{L}_p$, and $\mathbf{L_o}$ between s and t, respectively. Generally, the value of w_s is higher than the values of w_p and w_o, which means that if t is the subject of s, then the authoritative value of t has a higher contribution to the pivot value of s. Referring to the experimental research of Zhang et al., this article also sets the weights of the three to 0.6, 0.2, and 0.15, respectively. Au (t) is the authoritative value of the term t in GBM (EBM), where the authoritative value refers to the sum of the hub value (s) of s to which all imported links of t in GBM (EBM) belong. The higher the $\mathbf{L_o}$ significance, the greater the corresponding weight value. When the authority value of the web page increases, it will directly affect the ranking performance of the website on the search engine. The more authoritative and the higher the score, the easier it is to obtain a good ranking. The calculation method of Au (t) is shown in the following formula:

$$\begin{gathered}\mathrm{Au}(t)=\sum w_s * \mathrm{Hub}(\mathbf{S}_1)+\sum w_p * \mathrm{Hub}(\mathbf{S}_2)+\sum w_o * \mathrm{Hub}(\mathbf{S}_3)\\ s_1\in S,\ (\mathbf{S}_1,t)\in L_S\mathbf{S}_2\in S,\ (\mathbf{S}_2,t)\in \mathbf{L}_p\mathbf{S}_3\in S,\ (\mathbf{S}_3,t)\mathbf{L}_o.\end{gathered} \tag{3}$$

The structural importance degree RS (s) of RS can be calculated from formulas (1)–(3); the initial values of Hub (s) and Au (t) in the link analysis process are set to 0.5 after iteration These two values will be normalized in the calculation process. The sum of the square values of each Hub (s) is 1, and the sum of the square values of each Au (t) is also 1.

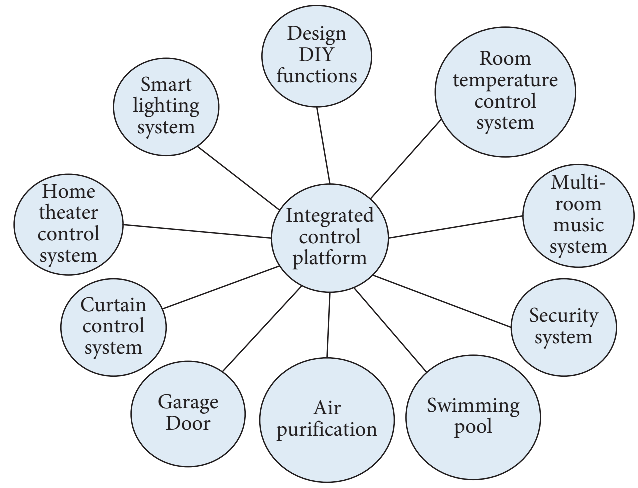

Figure 1: The direction of the Internet of Things.

2.3. Data Conversion Function Design. In the IoT accessor architecture, the adaptive protocol module is responsible for analyzing and converting heterogeneous and nonuniform mappings of various protocols, completing the adjustment protocol, and ensuring unified packaging of transmission protocols for accessing heterogeneous and protocol analysis and a unified IoT gateway or service platform. Among them, the heterogeneous protocol interface in the protocol adaptation module is responsible for adapting to various heterogeneous protocols, and each type of protocol interface mainly supports a specific protocol. The heterogeneous protocol interface adopts a modular design, and specific function modules can be loaded or downloaded to achieve reasonable utilization of resources and reduce resource consumption of devices with limited resources. This project mainly analyzes the problem of equipment connection and unified transmission. In the sensor network communication protocol, the use of device and data routing mapping gate is completed, and different data objects (conceptual data, logical data, and physical data) are selected for unified encapsulation and routing installation. This module promotes the unified processing of protocols and data, converts and protects the heterogeneity of sensitive-end protocols, and prepares for the intelligent cooperation of the next layer of gateways. The main functions of the heterogeneous protocol adaptation module are as follows:

2.3.1. Heterogeneous Protocol Communication Analysis. The analysis object of the device's communication protocol is the communication system, which is the key to the heterogeneous Internet of Things, especially for different network protocols, analysis type protocols, new protocol analysis, source address analysis, destination address analysis, etc. The unification of wireless communications such as Wi-Fi, 3G, ZigBee, etc., is analyzed to ensure the smooth access of heterogeneous protocols and prepare for the next protocol encapsulation.

2.3.2. Heterogeneous Protocol Packet Analysis. In addition to the analysis of the heterogeneous communication protocol, another key is to analyze the communication system between information objects and the accessor of the Internet of Things, mainly for a variety of different communication messages, how M3M develops COAP, etc., and to analyze the communication protocol and load response of the Internet of Things. The data can be analyzed in a unified encapsulation protocol.

2.3.3. Port Mapping Design. Port mapping requires the establishment of a port routing table, which contains the mapping between objects and routing ports. The mapping relationship can be one-to-one, more commonly one-to-many, that is an object corresponds to multiple ports according to different data types. When loading the collected data, it is necessary to modify or update the port routing table according to the change of the port information; when sending the control data, you need to refer to the port routing table. When canceling and adding objects, the port routing table must be modified. At the same time, the channel scheduling system also performs channel scheduling according to the port routing table.

2.3.4. Protocol Unified Encapsulation. Unified protocol encapsulation is the key to integrating various heterogeneous networks into IoT accessors. It mainly integrates various heterogeneous detection networks, protects the heterogeneity of the network, realizes the standard operation of top-level applications, and completes the decoupling of top-level applications. The model is encapsulated in a unified protocol to meet the standard operating requirements of web applications and provide a more effective functional operation mechanism.

2.3.5. Content Streaming. According to the identification and analysis results of the specific information received, based on the data conversion channel transmission, the size of the data packet and the format of the information need to be preprocessed to maintain the heterogeneous effectiveness of the information. For short action control command packets, the processor needs to use a single small packet structure to process the command and immediately make the data packet contain a close command to ensure the channel communication strategy. When accessing information such as video, audio, and monitoring sensors, content needs to be transmitted to convert the traditional soft-flow structure into an encapsulable unified description model package for unified encapsulation and analysis. The stream information structure is stored using a chain storage structure. The information structure of the command is stored and packed using the heap storage structure.

3. Simulation Test of the IoT Prototype System

3.1. Experimental Environment. The system is mainly composed of a controller based on the prototype system of the Internet of Things and a motor monitoring module. The motor monitoring module is mainly composed of two parts: a power parameter measurement module and a sensor parameter collection module. The power parameter measurement module completes the collection and measurement of motor voltage and current parameters, and the sensor parameter collection unit completes the motor temperature, vibration, abnormal noise, and other related indicators.

3.2. Experimental Procedure. The controller has a multichannel AD sampling I/O port, so this design can directly convert the high current and high voltage of the motor into a low-voltage signal and directly input it into the controller for collection and measurement. The principle of energy parameter measurement and the specific design process of the module are as follows.

The data collection of the controller should strictly follow the provisions of the sampling theorem. During the sampling process, when the sampling frequency fsmax is greater than 2 times the highest frequency fmax in the signal, the digital signal after sampling completely retains the information in the original signal. In application, it is to be ensured that the sampling frequency is 5 ~ 10 times the highest frequency of the signal. According to circuit theory, the calculation principle of AC electrical energy parameters is as follows. The effective current value is

$$I = \sqrt{\frac{1}{T}\int_0^T i^2 \mathrm{d}t}. \tag{4}$$

The motor is powered by AC. From $i(t) = I_m \sin(\omega t + \varphi)$, the effective current value is

$$I\sqrt{\frac{1}{T}\int_0^T I_{m^2}\mathrm{Sin}^2(\omega t + \phi)\mathrm{d}t} = \frac{\sqrt{2}}{2}I_m. \tag{5}$$

Similarly, the effective value of the available voltage is

$$U = \sqrt{\frac{1}{T}\int_0^T U_{m^2}\sin^2(\omega t + \phi)\mathrm{d}t} = \frac{\sqrt{2}}{2}U_m. \quad (6)$$

In the actual application process, discrete sampling sequences are usually used to replace the continuous time-domain changing values to calculate the corresponding electrical energy parameters.

$$I = \sqrt{\frac{1}{T}\sum_{N=0}^{N-1} I_{m^2}\Delta T}, \quad (7)$$

where ΔT is the AC sampling time interval, N is the number of sampling points in a cycle, and I_m is the value of the sampled current sample.

3.3. Data Collection. In this design, when measuring the voltage and current of the motor of the prototype system of the Internet of Things, it is necessary to convert the collected data to a valid value after conversion. When the SCM sets the sampling frequency, the frequency is too high, the sampling interval is short, the amount of data required to be stored is large, and the calculation time is long; if the frequency is set too low, the measurement error will become larger, and comprehensive consideration is taken to determine the sampling setting for each cycle for 130 times.

4. Functional Analysis of the IoT Prototype System

4.1. Analysis of the Real-Time Distribution Function of the Internet of Things Prototype System. In the manufacturing of the Internet of Things environment, the distribution function solves the communication problem between the circulation resources and the information system and reduces the deviation between the circulation plan and the circulation solution. Dynamic manufacturing resources can realize ubiquitous recognition, which is the basis of the optimization of the workshop material allocation. The material allocation process mainly includes three parts: raw material resources, logistics resources (forklifts, BMX, etc.), and circulation tasks. The so-called material resources refer to the necessary parts, supporting parts, purchased products, raw materials, etc., in the production of the seminar. This is to ensure that production is completed normally. Allocating resources is the core of the material resource allocation of the work meeting, and is the executor who completes the task. The demand for material resources generated during the manufacturing process is met by circulating resources. In this unit, the modeling problem of dynamic manufacturing resources, assignment of tasks, in order to optimize the context, reflect resource information, and release resources and materials, and distribution tasks provide detailed instructions. Table 1 shows the description information of the allocated resources.

From the allocation resource description model in Table 1, we can know the task attributes and specific task content and service status of the IoT prototype system when it realizes the resource allocation function.

Material index description: the display design model information is shown in Table 2, and the specific image is compared using six sets of data as shown in Figure 2.

It can be seen from Table 2 that the materials used in the display design model in this article include copper coils and gaskets. According to different design requirements, the specifications of the two materials are also different.

The execution process of the distribution task is as follows: the distribution task matches the corresponding distribution resource service, and the distribution resource obtains the material resource requirements from the distribution task to complete the task from the material storage, and then according to the task requirements, the materials and resources obtained are be allocated, and after the materials are carried to the designated location of the task, the task is completed.

4.2. Determination of the Alarm Threshold of the Monitoring Index of the Internet of Things System. In order to the Internet of Things monitoring system to correctly identify the abnormal state of the display box-type substation, it is necessary to correctly set the threshold of the system monitoring index. Alerts are triggered when monitoring reaches a certain threshold. The threshold setting of the electrical energy parameter index is mainly based on the national restrictions on electrical energy parameters, actual user needs, and related requirements for relay protection. The system mainly measures and collects the electrical energy parameters of the low-voltage side loop. The national standard stipulates that the deviation of the 220 V single-phase power supply voltage is +8%, and the nominal voltage is −15%. The frequency deviation is set according to the actual system capacity, and the threshold is ±0.2 Hz ~ ±0.5 Hz. The threshold setting of the force rate needs to be set in the range of 0.7 ~ 0.9 according to the actual situation of the user. The current threshold needs to be flexibly set according to the actual project relay protection requirements. The setting of the nonelectric energy monitoring index threshold is mainly based on relevant domestic specifications and product specifications of box-type substation equipment. According to national standards and product specifications, the ambient temperature threshold is −15°C, which is set to 40°C, the humidity threshold is set to 90% RH, and the temperature threshold is set to 85°C. Relevant threshold points are connected, and the temperature is set at 75°C. Since the fire detection is output as a switch, the threshold is 1. The smoke threshold is set according to the actual test results, and the threshold is set to 1.2 V. In the National standard audio monitoring indicator, only the working sound of the device is less than 60 dB. If the fault is affected by the use of the box-type substation, there is no corresponding limit on the voice threshold, and further investigation is needed. In cooperation with relevant departments of Dongying Electric Power Company, the voice signals of the normal operation of the box-type substation were collected on the spot and the corresponding waveforms were obtained through software analysis, as shown in Figure 3. At the same time,

Table 1: Distribution resource description model.

Static attributes of resources	Resource context information
ID: forklift number, used to identify resources	Service status: three working states: idle, normal work, and fault state
Type: explain what function	Real-time location: location information obtained by reading location tags
Rated capacity: indicates that the distribution resources can carry material tasks	User ID: operator ID
	Distribution task sequence: the distribution tasks undertaken
Maximum capacity	Used capacity: the capacity of the task carried

Table 2: IoT construction material index information table.

Material index	Material number	Material name	Material location	Quantity of materials required	Unit material volume
5	4	Copper coil	(30, 40)	15	20
5	3	Gasket	(30, 40)	10	2

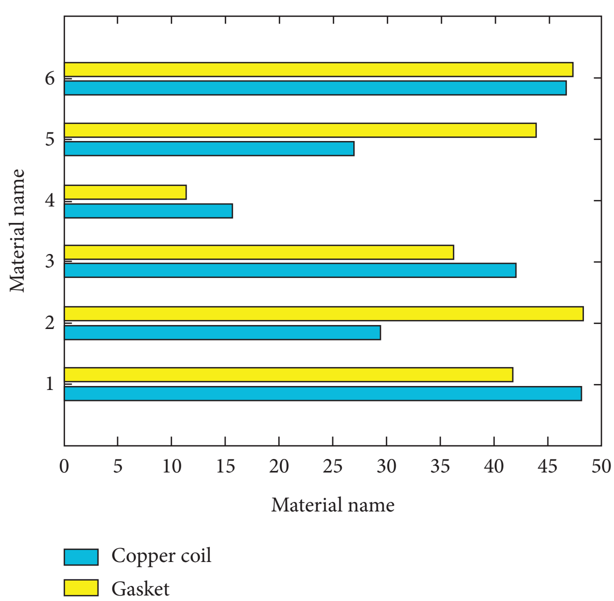

Figure 2: Comparison of six groups of IoT construction materials.

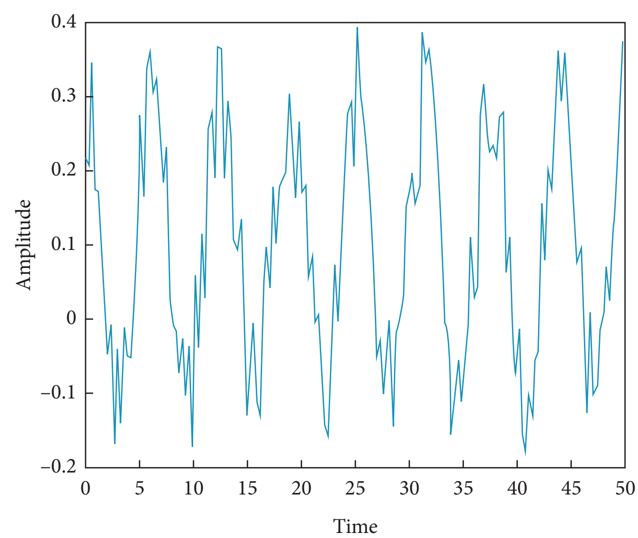

Figure 3: The audio waveform of the box becoming normal.

you can refer to the relevant reference materials to master the typical voice data of partial discharges and mechanical failures of box-type substations.

Two typical fault audio waveforms are mixed in the normal working audio signal of the box transformer, and the corresponding waveforms are obtained through software analysis as shown in Figures 4 and 5. Through comparison, it is found that the amplitude of the audio signal waveform of the normally operating box-type substation is much smaller than that of the two typical fault states. In normal operation, the amplitude of the audio signal waveform of the box-type substation is between ±0.4 V.

Because the audio signal is extremely susceptible to interference from external environmental factors (environmental factors, layout factors, and sound reflection factors), actual testing found that only the amplitude of the audio signal waveform is used to determine whether the system's operating sound index is normal, and there is a large error. To this end, consider converting the time-domain audio signal into a frequency-domain signal for analysis by fast Fourier transform. It includes information on the phase shift of each sinusoid in order to be able to recombine the frequency components to recover the original time signal. Through the analysis of the frequency-domain waveform diagram, it can be obtained that the frequency of the audio signal of the box transformer under normal working conditions is mostly concentrated around 180 Hz, and the highest frequency value is less than 800 Hz; when a partial discharge fault occurs, the frequency of the audio signal is partly concentrated between 1400 Hz and 1800 Hz; when a mechanical failure occurs, the frequency of the audio signal is distributed between 0 and 1800 Hz, and it shows obvious irregularities. After analysis, it can be concluded that the threshold of the audio signal in the frequency domain is set to 0 Hz and 800 Hz.

After the threshold is set, the audio signals in various operating states of the box-type substation are respectively applied to the time-domain criterion, the frequency-domain

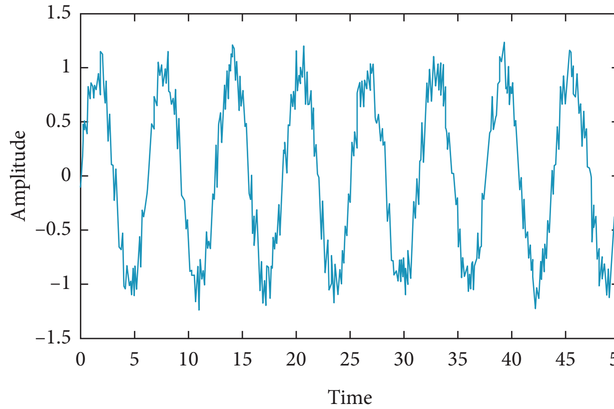

FIGURE 4: Mixed normal and partial discharge audio waveforms.

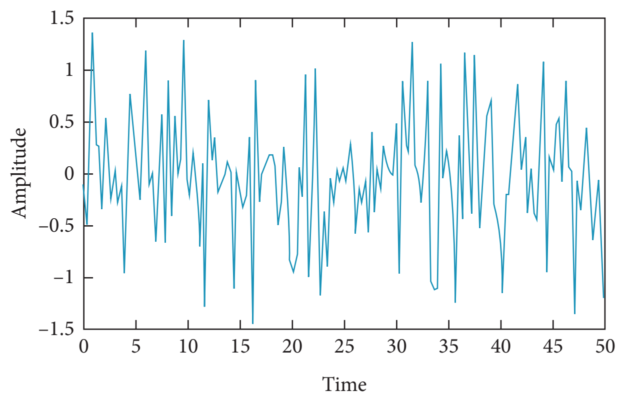

FIGURE 5: Normal and mechanical fault mixed audio waveform.

TABLE 3: Comparison of audio signal status recognition results.

Application criterion	Operating status	Number of samples	Correct number of samples	Accuracy (%)
Time domain	Normal status	15	12	80.00
	Fault state	20	16	80.00
Frequency domain	Normal status	15	13	86.00
	Fault state	20	17	85.00
Set of two	Normal status	15	14	93.00
	Fault state	20	18	90.00

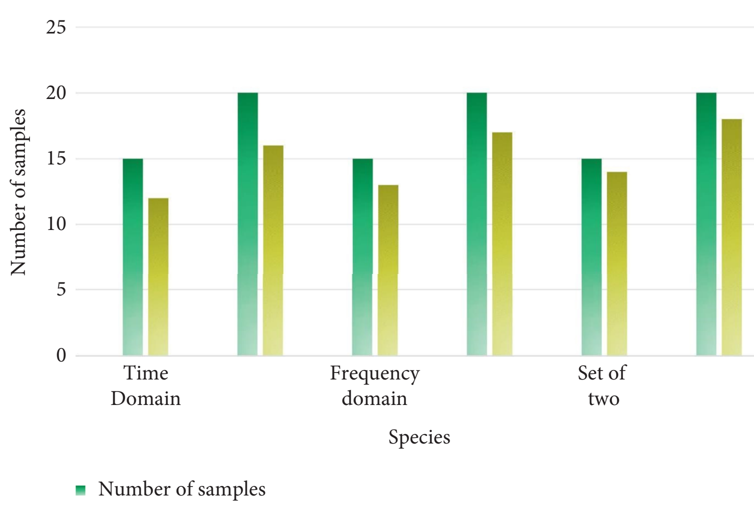

FIGURE 6: Comparison of audio signal status recognition results.

criterion, and the combination of the two criteria to identify and judge their status. The specific results are shown in Table 3. The highest recognition accuracy reaches 90%. The image is shown in Figure 6. The analysis can be concluded that with the combination of the time domain and the frequency domain of the IoT application criterion, the final state recognition accuracy rate is higher than the former two, and the average recognition accuracy rate can reach more than 88%. It meets the accuracy requirements of the Internet of Things prototype system to judge and identify faults based on audio signals. Under the condition that the number of samples in the fault state is 20, the maximum number of correct samples that can be determined by the IoT prototype system in this article is 16 and the accuracy is 90%. It greatly improves the recognition accuracy and the practical application value of the IoT prototype system.

5. Conclusions

This article designs and implements an IoT application prototyping system that improves data sharing to a certain extent and separates device developers from application developers, reducing the development limitations of IoT applications. This not only improves user convenience but also provides opportunities for the popularization of IoT applications. At the same time, it also describes the IoT manufacturing technology and environment, proposes service-oriented technologies and related definitions, and makes relevant theoretical preparations for the dynamic modeling of IoT manufacturing resource services in the IoT environment.

In this article, through reading and analyzing some typical engineering application cases at home and abroad, we have an in-depth understanding of the application characteristics of the discrete production system and the Internet of Things technology in the scheduling process and the key technologies involved in the display design model based on the Internet of Things technology; carried out research and analysis; and provided a theoretical basis and design basis for establishing an effective system architecture.

Various performance tests on the data storage model of the Internet of Things have verified the reliability, efficiency, and high scalability of the solution. Based on the storage model, a prototype of the Internet of Things data management system is constructed, which verifies the feasibility and practicability of the scheme in this article. It provides theoretical reference and application value for large-scale data storage solutions of the Internet of Things. The intervention of the Internet of Things technology has broken the limitation of time and space and become an important tool for connecting spaces and people. The Internet of Things technology will surely be the development trend of our future exhibitions. There are still some shortcomings in this article. The construction of the display design model needs continuous improvement. In the future research work, we will continue to use the existing technology to conduct in-depth research from different angles.

Data Availability

No data were used to support this study.

Conflicts of Interest

The authors declare that they have no conflicts of interest.

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