

Application Research of Electronic Technology in Communication Engineering

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Abstract.

Positive effects of electronic technology on improving communication engineering quality. Its uses in the context of big data are mostly seen in the resource allocation for communication engineering. It may create an intelligent allocation model for electronic communication resources, which is also the foundation of communication engineering to carry out large-scale data transmission. Based on prior work experience, this article provides a summary of the marriage of electrical technology and communication engineering.

1. Introduction

People now have higher expectations for communication engineering building in the big data age, which opens up additional prospects for electronic technology development in this field. This makes it possible for electronics and communication engineering to work in concert. The only way to improve interaction between multi-level development needs in huge data agents is through multi-level development requirements in the big data era. People need to do a thorough investigation at this point since electronic technology has been included into the field of communication engineering.

2. Combined Overview of Electronic Technology and Communication Engineering

2.1. Electronic Technology Overview From the actual electronic technology analysis, it can be seen from the physical perspective, the theoretical foundation of the entire electronic technology belongs to the scope of electronics. In physics research, electronic technology can be divided into two aspects of electronic information technology and power electronics technology. It can also be seen from here that electronic technical content covers two major areas of electricity and information. When applied, it can carry out specific electronic signal maintenance processing for electronic information engineering signals. For

ensure a targeted conversion operation of the signal [1].

2.2. Communication Engineering Overview The entire communication area is covered during the operation of the communication engineering. Its main links include contents such as fiber optics, numbers, and Internet communication. It can effectively handle the communication information between people and people to ensure that they can be fully maintained during the propagation process. In addition, communication projects have a great relationship with people's daily lives. Among them, modern information technology is also applied.

Only in this way can better ensure the analysis and processing of information. For communication engineering, there are many elements, light, and electricity such as collected and processing every day, and there is a big relationship between each element and the relevant program code. Moreover, each element can also be stored in the electronic chip to ensure that the new signal system is constructed. As shown in Table 1, the data communication system is basically attribute.

example, on a specific function display, electronic technology needs to perform a target of signal to

Table.1 Basic Properties of Data Communication Systems

	data communication	telephone, telegra
communication object	man-machine, machine-machine communication	people - communication between people
communication signal	letters, numbers and symbols with a certain meaning of binary form	continuous speech sense of meaning
communication reliability	the error rate is high	the error rate is low
communication complexity	need strict protocol to control complex	control simple

2.3. Relationship Between Electronic Technology and Communication Engineering

The combination between electronic technology and communication engineering is mainly reflected in the field of electronic communication engineering. Among them, the main industry types involved include electronic industries, fiber optic industries, and software service industries. For the relationship between electronic technology and communication engineering, it is mainly based on "mutual promotion". Electronic technology is required for electronic technology in the development of communication engineering. Electronic technology can also resolve the problem of internal exchange devices in communication engineering, and ensure that the switching equipment is always under the condition, thereby creating favorable conditions for communication engineering development. In addition, many core hardware involves a lot of core hardware on the operation of communication engineering, which require technical support for electronic technology. Only in this way can we ensure that it is always in normal operation. Overall, China's communications project has been in a state of continuous development, and people have also generated great dependence on high efficiency information exchange technology. The communication engineering is a carrier that is effectively propagated throughout the information technology, which can provide many opportunities for electronic technology development.

3. Characteristics of Electronic Technology

3.1. Communication Time Short

Applying electronic technology into communication areas can significantly decrease the information transfer time. It can also ensure optimization of communication efficiency while strengthening communication quality. For electronic communication, the information data transmission time must be clear. At this stage, with China's development of electronic technology research, the communication call time has been greatly reduced. This is also the effect of electronic technology applications. This can make communication faster when the call speed is improved [2]. Figure 1 is a 5G electronic communication network architecture.

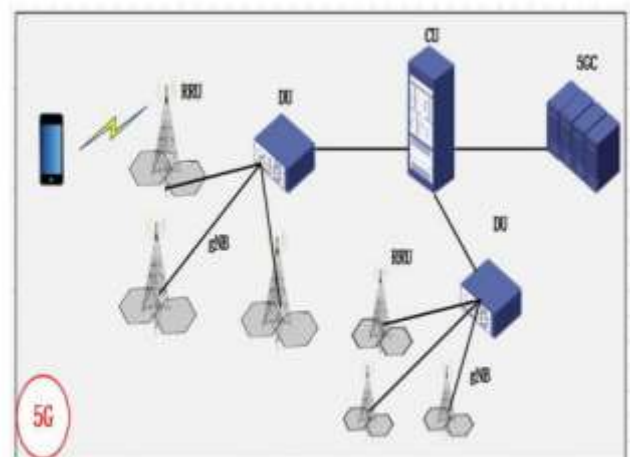


Figure.1 5G Electronic Communication Network Architecture

3.2. Diversified

It is mainly targeted from information and data from actual electronic technology. It can perform related processing operations by signaling and passing the information data that has been processed. During the above process, electronic technology can present a variety of forms of information such as image form, sound form, and the like. In the development of communication, it can provide more opportunities for electronic technology, but also enhance the public's understanding of electronic technology. Through a variety of electronic technology applications, China's electronic technology can be guaranteed towards innovative direction, which in turn lays a foundation for the progress of the communication industry.

3.3. Efficiency

Throughout the development of the entire communication industry, the development of electronic technology is the focus of public concern. Among them, the most direct display is the transmission efficiency of information data. In contrast, language simulation data is generally lower than digital transmission efficiency. Therefore, in the development of the entire communication industry, people can provide more complete communication services to users through electronic technology applications. This also guarantees that the communication between the people is more convenient, and sets the electronic information communication work procedures across regional cross-time. This is also one of the best means of expanding the application of electronic technology applications.

4. The Advantages of Application Electronic Technology in Communication Engineering

It can be seen from the history of China's entire communication engineering development, and each change and innovation are all inseparable from electronic technology support. In the development of actual communication engineering, people's requirements for communication projects are also constantly updated. This also makes electronic technology and communication projects have made great contributions in the sustainable development of my country's information industry [3].

4.1. Make Information Exchange in Communication Engineering more Convenient The communication project is in operation, mainly around the exchange of information. If electronic technology can be applied to communication engineering, the entire information exchange process will become simpler. At the same time, complex procedures can be discarded. This can also enhance the convenience of information exchange, so that the entire scope of information exchange can also be greatly expanded. This not only enriches the exchange path, but also enables information exchange on a global scale.

4.2. Significantly Improve the Quality of Information Transmission in Communication Engineering Except to improving the convenience and operating efficiency of information exchange in communication engineering, electronic technology can also improve the anti-interference ability of the entire project, avoid external

interference when information is transmitted, and make the information transmission process more complete. In most home or civilian markets, the usage and penetration rate of coaxial cables is much higher than that of optical fibers. This is the advantage of the low price of coaxial cable. In terms of data transmission, taking the general standard definition image as an example, the latter can also meet the needs of users in terms of data stability and data size. Optical fiber is mainly to solve two problems: one is transmission distance, and the other is environmental interference. Coaxial cable can only solve the problem of monitoring image transmission in short distances and small areas. If you need to transmit image signals over a distance of several kilometers or even hundreds of kilometers, you need to use optical fiber transmission. Figure 2 shows the principle of optical fiber communication.

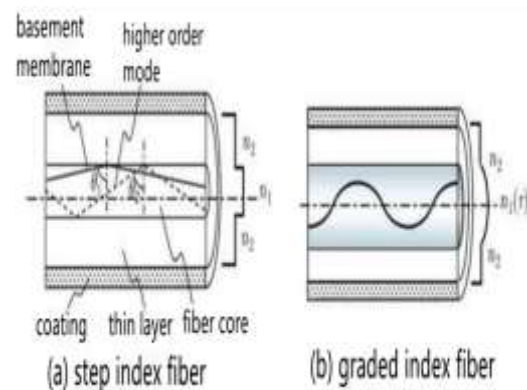


Figure.2 Principles of Optical Fiber Communication

4.3. Extend the Life Cycle of Communication Engineering Products

In communication, once electronic communication products are damaged, in addition to increasing the user's use cost, new environmental pollution problems will also arise due to the littering of electronic communication waste products. This environmental damage is irreversible. If electronic technology is applied to it, it can help communication engineering to conduct in-depth research on communication products, make up for its shortcomings, and extend the product life cycle. This is also the basis for reducing the production cost of electronic communication products.

5. Application of Electronic Technology in Communication Engineering under the Background of Big Data

From the perspective of current communication engineering development, data transmission still has the characteristics of large throughput and slow transmission speed. Affected by these problems, situations such as loss of communication information and engineering paralysis often occur. In order to solve the above problems, people can filter out the information noise with the help of filtering technology in information and electronic technology. Subsequently, people can use the control functions of information electronic technology to ensure that the communication roadbed is reasonably selected, to ensure that the data transmission is always in a stable state, and to strengthen the communication transmission efficiency. Although the main form of electronic technology in China for communication engineering is information electronic technology, there are also a small number of power electronic technologies applied in communication engineering. The most common one is the integrated circuit, which strengthens the reliability of the operation of communication engineering circuits [4].

5.1. Application in Resource Allocation of Communication Engineering In the context of big data, communication projects need to transmit a huge amount of data, and each transmission of data requires certain communication resources. At this time, if there is an uneven distribution of communication resources, it will have a great impact on the development of the entire communication engineering information transmission task. The application of electronic technology can realize the reasonable allocation of internal resources in communication engineering and ensure that the data is always in an effective transmission state. First of all, we need to combine electronic technology with the channel communication protocol in communication engineering, as well as the distribution rules to establish a new intelligent distribution model of electronic communication resources. For the convenience of research, this article assumes that N is the line geometry of resource allocation in communication engineering. In this paper, M represents the set of electronic communication data nodes, (a, b) are the communication lines of output a and input b in the electronic communication network, and C represents the surrounding data nodes of the output a of the electronic

communication network. D represents the adjacent data node at the input terminal b of the electronic communication network resource. The actual relationship between node C and node D can be expressed by the following formula.

$$C = a: (a, b) \in l_b$$

$$D = a: (a, b) \in l_{out_b}$$

In this formula, l_b represents the communication line geometry of the output node of the communication project in the electronic communication network, and l_{out_b} represents the line set of the entire input node in the electronic communication network. If the channel set can be applied in the electronic communication network, at this time, the entire electronic communication resource can only be reflected by the allocation model. For example, in the application process of a moderate function, people can use this type of function as a basic condition to carry out the evaluation operation of resource allocation interval and allocation rate to the allocation plan in the model. This can ensure that the intelligent allocation of communication engineering resources can be realized with the help of electronic technology.

5.2. Application in Communication Engineering Information Transmission Control

Under the requirements of the big data background, communication engineering should continue to improve the efficiency of information transmission on the basis of the previous, and ensure the effect of data convergence. However, it can be seen from the application of existing communication technology that this goal is difficult to achieve well. As a result, people need to use electronic technology to comprehensively control the transmission of communication engineering information. In the actual information transmission process, many choices of communication transmission paths are often involved. If most of the data information leads to the same communication path, the overall information transmission speed will be affected. Moreover, other paths will cause a lot of waste of communication resources due to the small amount of information transmission. The specific

communication transmission path structure diagram is shown in Figure 3.

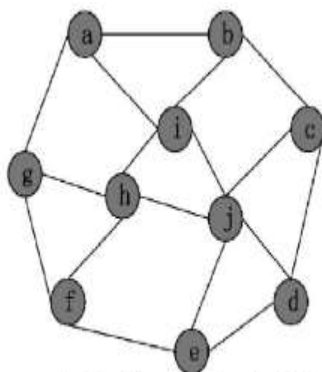


Figure.3 Communication Transmission Path Structure Diagram

In general, the main application object of electronic technology in the control of communication engineering information transmission is the electronic control system. When working, the electronic control system can rely on the filter device to ensure that the communication engineering channel can get a reasonable noise reduction. This can ensure that the channel environment is always in a reasonable state, and then use the controller to achieve effective control of the entire data transmission path. Subsequently, the staff can use electronic technology as the core to realize the noise reduction of all channels. This process also needs to be applied to the filtering device to determine the appropriate network communication node [5].

5.3. Billing Management

Generally speaking, the accounting management module is involved in the operation of the entire modern electronic communication system. The electronic accounting function used in the design of the actual electronic communication system accounting management module has strong professionalism. The actual storage space is even greater, and multiple content storage operations can be completed at the same time, with strong high efficiency characteristics. In addition, relevant companies can use advanced electronic communication systems to develop a series of personalized services. From the perspective of functional design modules, people can often use electronic communication systems to combine scientific configuration and combination work. Companies can develop billing management system designs for different user needs and provide

specific services to users. This can ensure that users' diversified billing management needs are met. Moreover, user communication needs and specific methods can be integrated into this model, making billing management more diversified. At this time, it can also ensure the rationality of the entire construction work, and strengthen the scientific and efficient billing management. This can also ensure the smooth progress of billing management. Figure 4 shows part of the functional flow design diagram of the charging system.

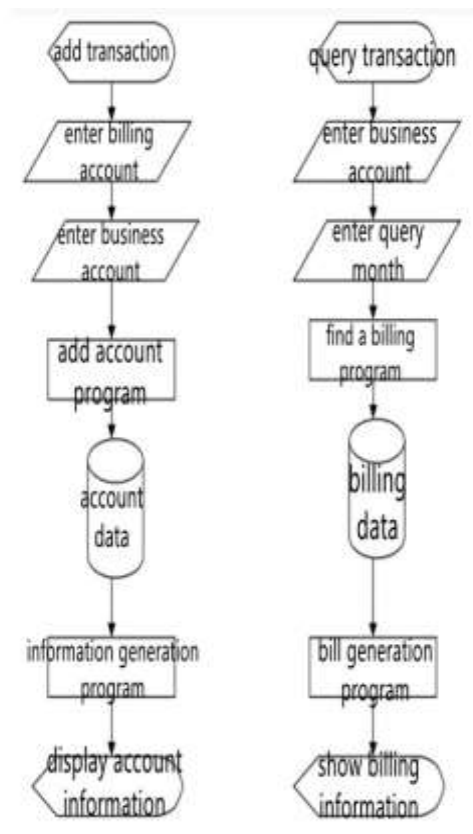


Figure.4 Billing System Adds User Process Design Diagram and Bill Query Process Design Diagram

5.4. Collaborative Application

In fact, communication engineering and electronic technology do not belong to the same technical field, but there are many connections between the two to achieve coordinated development. This can be reflected in the fields of electronic information technology and communication network technology, making contributions to China's overall scientific and technological development. First of all, from the perspective of engineering construction technology at this stage, the synergy between electronic technology and communications engineering can be demonstrated in broadband and

satellite communications, optical communications, and artificial intelligence. In communication engineering, if the full application of electronic technology can be achieved, information transmission and interaction can be made more concise to the greatest extent, so as to improve the efficiency and integrity of information transmission. Secondly, from the perspective of electronic technology, the application of communication technology can ensure more diversified characteristics and comprehensive functions of component types. It can not only better meet the needs of users, but also reduce the failure rate of electronic products in use, and control the maintenance cost of electronic products. It can also be seen from here that the application of electronic technology in the field of communication engineering is particularly important. It can ensure the efficient operation of data transmission of the entire communication project, and provide quality assurance for the subsequent development of the overall communication project.

5.5. Application of Information Electronic Technology in Communication Engineering

Looking at people's production and life at this stage, the Internet has become an indispensable part, and the main function of this technology is to disseminate information. The in-depth development of the Internet and information technology has given people a strong dependence on information technology. In the field of actual information technology, electronic technology is widely used in communication engineering, and information dissemination also needs to be based on the characteristics of actual communication technology. This can ensure that electronic information technology can provide a medium basis for communication technology. Generally speaking, the development of communication engineering is reflected in the social and economic development and is directly related to the development of the entire industry. For example, in the field of communications engineering, if we want to fundamentally ensure that electronic technology plays a role, we need to fully demonstrate the application value and role of electronic technology. In today's social development, people's requirements for communication data management have greatly increased, and communication needs have become more and more obvious. In this case, people should

ensure the timeliness and effectiveness of communication, which is also one of the main goals of the development of 5G technology. At present, 5G technology is gradually spreading in my country, and some cities have already carried out commercial 5G applications. The development of this communication technology not only means the efficient display of electronic technology, but also ensures that the construction of communication projects has more communication performance. It can improve the communication efficiency while ensuring that the information content remains stable during transmission [6].

6. Communication Engineering Integrated Circuit Based on Electronic Circuit Simulation Technology

During the operation of the communication project, due to the large amount of data transmission, it is easy to cause a sudden increase in the power consumption of the entire communication project circuit. This affects the voltage stability of the entire circuit and threatens the safety of the entire system. In order to strengthen the stability of integrated circuits in communication engineering, people have obtained electronic circuit simulation technology through in-depth research of electronic technology. This technology can not only ensure the stable operation of integrated circuits in communication engineering, but also make up for the shortcomings of integrated circuit debugging. The application of electronic circuit simulation technology mainly focuses on the detection and optimization of integrated circuits in communication engineering. With the help of electronic circuit simulation technology, people can simulate specific circuit operating parameters such as voltage and current, and finally display the operating status of communication engineering integrated circuits in digital form. Later, people use data analysis to observe whether the integrated circuit is in normal operation. Once an abnormal situation is discovered, people can understand the point of failure according to the information prompt and repair it in time.

More importantly, the staff can also simulate the operation scenarios of different lines based on the integrated circuit simulation information, and carry out the inspection of the integrated circuit operation efficiency of the communication engineering. Staff can formulate integrated circuit optimization

strategies through data summary and analysis to ensure that the circuit can be better applied to communication projects.

7. Conclusion

In summary, as the application of electronic technology in communication engineering becomes more and more extensive, people need to use big data as the background to conduct research on the application of electronic technology in communication engineering. This can ensure a comprehensive integration between electronic technology and communication technology. Furthermore, with the help of electronic technology, previous development problems in communication engineering can also be effectively solved. This can also meet people's data needs, which is also a boost to the development of the entire country.

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