Future smart mobile edge computing technology in mobile communication networks

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2021 IEEE Conference on Telecommunications, Optics and Computer Science (TOCS) | 978-1-6654-2498-1/21/$31.00 ©2021 IEEE | DOI: 10.1109/TOCS53301.2021.9688809

***Abstract*—Internet of things and big data era is developing to the naked eye, the future mobile communication network will face a sharp increase in mobile data and traffic, also indirectly bring numerical growth and terminal connection, increased more diverse service scenarios, high efficiency, high reliability has become the future mobile communication system must require.**

Keywords—Future mobile communication, network mobile, Edge computing

I. Introduction

In the era of rapid development, mobile communication network has higher demand in the future, which also promotes the rapid development and realization of the fifth generation communication technology. With the development of mobile edge technology, for high quality network demand index is a rising trend, in the arrival of 5G era, mobile communication network in addition to mobile phone computer can carry electronic products, more increased many new technology business scenarios, such as unmanned, VR technology, etc., more close to the application of the field of life.

II. Mobile edge computing technology application advantages in future mobile communication networks

As the key technology in the future mobile communication network, the core point of mobile edge computing technology is to realize network application convenient and intelligent, not only timely and accurately solve local business, more quickly and efficient span integration in mobile terminal, especially in data analysis, and screening valuable important data transfer to remote data center, can greatly save time to improve efficiency.

In the future, mobile communication networks have put forward higher requirements for the application of mobile edge computing technology, and the advantages of mobile edge computing technology are also reflected one by one. The mobile edge technology located at the edge of the network can obtain information about the user location in real time, compute and analyze the massive information data in time, and use the obtained information to determine the location of the connection device in the network.At the same time, it can conduct self-perception to help users determine location points more quickly and improve user experience. In addition, the mobile edge computing technology has higher reliability, and can realize green communication, in the efficient transmission of information while saving resources, to achieve energy saving and consumption reduction, reduce the cost of network resources. Mobile edge computing technology can directly deliver required information to users, solve emergency problems, reduce the time needed for transmit, and more efficiently and reliably process tasks in real time.

III. Challenges facing the future application of mobile edge computing technology in mobile communication networks

A. There is no relevant solution for a large-scale deployment

In recent years, most research work on mobile edge computing technology has focused on its resource management, and many new research directions and possible problems, including the development of mobile edge computing technology, exist in part as a guiding role. With the application and development of mobile edge technology in mobile communication networks, mobile edge technology still has more research and improvement for mobile edge technology.At present, mobile edge computing technology has system deployment. There is no relevant solutions for mobile edge computing technology in a large range. The core of mobile edge computing technology is to expand the function of cloud computing to network edges and realize fast and efficient data processing. How to send big data integration system to required users to correctly deploy mobile edge computing, the location of technology server and correct processing of mobile edge computing technology have become the problems to be solved quickly.The relevant criteria in the current study do not give a definitive solution.

B. Secure and privacy protection is a big challenge for applications

With the rapid development of the era of mobile Internet data, the protection of personal privacy issues has become a part of the attention and great attention of many users.In the scene of mobile edge computing technology content of equipment and data, will make the mobile terminal facing more and more complex network environment and more and more user groups, the traditional network cloud technology may have many security problems, no longer suitable for mobile edge, computing, technology network entities and different levels of gateway authentication, but also need to consider security issues.We can not see in the network, there are often users and personal feedback privacy leakage, the transparency of personal data has received more and more attention, this security problem should be used as mobile edge technology, the important direction considered in future applications, and at the same time based on mobile

edge computing technology communication process involves many content sharing and computing collaboration. How to solve the problem of user privacy protection in the process of efficient and rapid application of mobile edge computing technology will also become a major challenge for the future development of mobile edge computing technology.

C. Mobile terminals cannot guarantee anytime links

Under the current centralized network, all network signals are sent simultaneously by the same site.The mobility problem of mobile edge computing technology will be mainly divided into two situations.First, the mobile terminal moves within a specific server coverage, so that the replacement and adjustment of the mobile edge computing technology server are not involved, and only the normal connection between the mobile terminal and the mobile edge computing technology; the second is the process that the mobile terminal needs to transfer from one server to another server, so that the mobile terminal cannot guarantee to connect at any time.The adjustment of the mobile terminal and the server is limited by the signal and space of the network. When switching the connection between the mobile terminal and the application on the server, it will break at any time. How to maintain the constant connection between the mobile terminal and the application is one of the application difficulties of mobile edge computing technology in the future mobile communication network. The mobility problem of computing technology, the mobile edge of the current major network manufacturers, will also become a key problem, and as the research continues to deepen, it is believed that this problem will eventually be solved.

IV. Future application path of mobile edge computing technology in mobile communication networks

A. Apply mobile edge computing technology in the Internet of Things

The Internet is a kind of based on the Internet platform, has realized the Internet of everything stars.Colenteroscopy from the structure of the Internet of Things, Mobile edge computing technology is a new mode near the edge of the Internet of Things and integrating the storage and optimization, Currently, The increasing number of information data and the rapid increase of network edge devices including constantly complex network architectures have made mobile edge computing technology an increasingly necessary technology, Especially in general for applications in future mobile communication networks, IoT devices are limited by resources in terms of processor and content inventory, Mobile edge computing technology can therefore be used as a unique technology for the Internet of Things, Collect and analyze the massive data and information generated by the terminal together, These data from different channels can be grouped and analyzed in real-time to ensure the timely provision of the data.

B. Mobile edge computing technology is applied to realize massive data computing

The rapid development of mobile Internet of Things technology has enabled the rapid arrival of the 5G era to produce a huge amount of data that is difficult to predict.But with increasing requirements for broadband speed and low rock, the analysis and calculation of massive data in a very short period of time has become a primary demand.For example: the current hot virtual reality technology is a typical real-time application technology. Virtual reality is a kind of technology to restore real scenes through computer simulation and create an immersive sense for users.It uses the computer to integrate a variety of information and physical behavior, and then simulate three-dimensional dynamic and visual scenes.Such a technology needs to collect massive data and real-time information related to the user status, including user location direction, scene setting, and a series of actions may produce when using virtual reality technology, and then processing and analysis, edge computing technology can provide rich computing resources and storage resources cache a lot of video and audio and other content, and the massive data integrated push location information, to ensure that push, push content will be sent to users or quickly simulate three-dimensional dynamic scene and users, to ensure the real-time experience effect.

C. To realize the emerging development of life scenarios

There are many specific scenarios based on the Internet of Things in life, which correspond to a wide variety of services. In such life scenarios, there are a large number of end users and key applications based on intelligent systems, and mobile edge technology can realize the emerging development of life scenarios. This technology promotes the development of driverless technology and virtual reality technology. Mobile edge computing technology to data processing implementation, efficiency can provide more convenient and efficient decisions for specific life scenarios, help more people to solve the different difficulties encountered in life, mobile edge computing technology to life scenarios using the edge service, reduce the invalid occupation of network resources to enhance real-time available broadband and can analyze and deal with a lot of priority events, so not only ensure the smooth life, more can enhance people's life technology happiness.

V. Conclusion

After recent decades of development of mobile communication, the information volume has once been nearing saturation. The future communication technology needs to meet more and more new application scenarios and office lifestyle, and users will also generate more needs. Mobile edge computing technology as an emerging technology has been used by various network manufacturers and researchers are constantly focused on all walks of life.In the process and foundation of the continuous development of mobile communication network, combined with the existing technical scenarios, mobile edge computing technology will also be more typical application. In the life scene, the integration of computing and communication will be further promoted, the direction and purpose of research will be shown one by one, and down-to-earth research while looking forward to the future, to help the future mobile communication network to enter a new stage of multi-technology integration under the multiple needs of new scenarios.

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