Research on the Integration of IT Network Technology and TV Production and Broadcasting System

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Abstract: In recent years, based on the development of China's economy and the progress of science and technology, China's TV industry has made great progress and provided a new platform for residents to understand the social situation. In this situation, in order to protect the efficiency of the TV system and the steady improvement on quality, technical staff have strengthened the rational use of IT technology, and as a basis to promote the sound of television production system. Based on this, this paper focuses on the connotation of IT network technology, and discusses the integration of the design and TV production system, hoping to realize the sustainable development of China's TV industry.

1. Introduction

At present, China's television stations in the process of solving the video image information, generally it use the non-linear system does data processing. In such a situation, the system often has a higher demand on the workstation graphics card running. Under normal circumstances, the system graphics card in the process of running summary can often use the PCI bus and the system CPU between the memory of the effective contact, but because the PCI device in the 33MHz standard operating frequency of the process, the PCI bus bit length of 32bit, So the system can not achieve a large number of video image resources optimizations, and easily lead to traffic bottlenecks and other issues.

2. Data Exchange Technology

In such a situation, in order to further protects the efficiency of television production system, the technical staff in the relevant operations, needs to add video editing board in the system. In fact, the board in the process of running, in order to further promote the video capture, cod compression and other work has carried out, and thus promote the PCI bus flow bottlenecks to deal with the problem. Not only that , the use of the device can be carried out by the board video editing work , thereby reducing the occupation of CPU resources , and promote the full play of the PC platform data nonlinear processing features .

Although the use of the board can promote the handling of traffic bottlenecks, but the PC + boards mode in the implementation process also often leads to the emergence of various problems. On the one hand, the board as the core of video images information editing, in the course of the operation requires not only the data codec work, but also need to promote the synthesis of editing functions. In such a situation, the degree of internal hardware complexity of the TV system needs to further to enhance, resulting in reduced system stability . Not only that , the board supports the video format is unique , so in the process its TV video resources will lead that various types of compressed file format is not compatible with the situation , only by transcoding way to promote all types of resources between the conversion . In such a situation, it will lead to further increase the television production and broadcasting processes, reducing the efficiency. In addition, the transcoding system as a data exchange

core links often need to use a large number of materials transcoding exchange services.
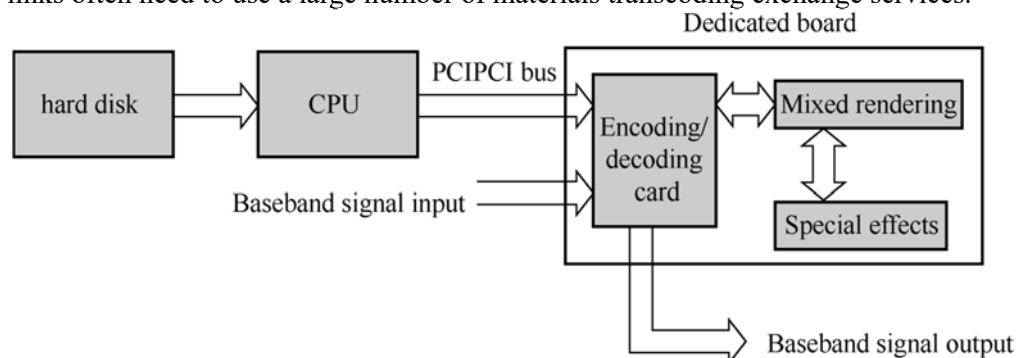

Figure 1 the non-compiled principle profile based on professional video board.

In this context, in order to further promote the efficiency of television production system to enhance the efficiency of the staff to strengthen the use of PCI-E bus technology, the technology in the process of running a point-to-point serial method will connectthe PCI-E16X uplink and downlink transmission to belt, so as to meet the PC graphics on the video image real-time synthetic transmission requirements. Not only that, the emergence and use of the PCI-E bus, can ensure that the computer with the ability to calculate and broadcast video in the use of the process information.

3. Network Storage Technology

At present, the TV companies in the process of operating the core storage, they often use NAS, SAN methods for related operations. The so-called NAS, refers to the Network-Attached Storage, that is, network access storage, the method mainly through the network TCP / IP technology for related operations. In general, the technician uses the connection between the network switch and the storage system and the server hosts in order to build a storage network for data storage. The so-called SAN refers to the Storage Area Network, that is, storage area network, In the process of running the main use of Fiber Channel technology to switches and storage Fiber Channel arrays, to connect the server host, to build a data storage area network.

In fact, the largest difference between the above two methods of the implementation process is the NAS system in the process of running it has its own file system management , and in the process of running NAS needs the Ethernet TCP / IP protocol storage architecture file management System for the related processing .

4. The Integration of Technology of the Television Production System

In order to further to promote the optimal operation of the television production system, the staff in the actual process needs to strengthen the use of various types of technical means. In this regard, the author carried out a summary, the specific content is as follows. First, the digital technology, the technology in the actual operation of the various types of information can be encoded conversion, and with the O / I form of data transmission, In order to achieve the data transmission efficiency improvement, and solve the problem of information distortion. Second, TCP / IP protocol, the framework of the agreement can effectively promote the point-to-point and point-to-multipoint data transmission operations to achieve the information interconnection and interoperability. Third, optical communication technology, the technology in the process of running can ensure that the system has sufficient bandwidth and transmission speed, to achieve stable transmission of network signals.

In addition, with the help of IT technology for the construction of television production system, the staff needs to strengthen the Internet, broad and TV system construction. Based on this, technical staff need to strengthen the use of IP technology, and thus enhance the television system interaction.

5. IT Network Technology and Television Production System Model

In order to further promote the steady development of China's television production and promote the

realization of various benefits, China's electric power technical personnel of the actual operation of the process has achieved the organic integration between the IT networks technology and television production system. On the IT network technology and television production system model, the author made a summary, the specific content is as follows.

5.1 EPON + EOC mode
EPON + EOC mode in the construction process needs to use the optical splitter network which will be involved in the installation of ONU users, and to ensure that the network system in accordance with the EOC way to run. In general, in the use of the process the technology often only need to install an EOC synthesizer, and as a basis for the realization of the CATV and data signal synthesis, and finally the use of HFC network signal transmission to the client, and through the EOC the terminal television signal is once again broken down into CATV signals and data signals, thereby realizing the playback of the television program.

In general, this method achieves efficient use of coaxial cable and branch distributor resources during the application process, and thus achieves savings in network construction costs. In addition, the feasibility of the program is strong, the operation is difficult, so the realization of the transformation time is shortening, to achieve the relevant benefits of the acquisition.

At present, in the two-way EOC technology network transformation, the technical staff can strengthen the passive EOC and the use of active EOC. In general, passive EOC technology is less expensive, but it can not be used in the process of the branch distributor for the penetration, and limits its scope of application. To this end, in the design process of the program, we need to strengthen the use of active EOC technology.

5.2 EPON + LAN mode
EPON + LAN mode in the process of construction and operation, mainly do the related operations through the EPON-OLT sub-front-end fiber and machine rooms optical device. In this process, the technical staff through the optical splitter will be the network access to the corridor of the ONU, and with the LAN number of ways, to achieve the television telegram signaling, broadband Internet access and other network services. During the construction of the home network, the operator can realize the increase in the related network management equipment according to the needs of the users, and then meet the needs of the home business interruption and the use of the sub-end. In general, the model in the course of the operation mainly with two-way home way to do the specific operation. Its specific is based on the original HFC network which based on the construction of broadband networks, and thus the realization of downlink analog, digital signal transmission, while the uplink is the use of optical fiber transmission. Practice has proved that the relevant operation can further to promote the two-way problem solving of the photoelectric digital network. This type of network after the completion of the construction , can ensure that the user line resources and the use of exclusive , and in the process of accepting video-on-demand services without the need for other terminal equipment installation , has save the cost effectively .

6. Television Broadcasting System Construction Prospects
At present, in order to ensure the optimal construction of the television broadcasting system and promote the realization of higher efficiency, our TV station staff in the process of dealing with the needs to strengthen the use of high-tech, television broadcasting system achieves the sustainable development. On the TV broadcast system construction prospects, the author conducted a related summary, the specific content is as follows.

6.1 the Role of the Total Control
The so-called master control system means that in the process of running the main inside and outside the television station can achieve the signal scheduling and exchange work, as the heart of the TV part of the system in the course of the operation is often closed. Based on the development of China's

television industry that can be learned: the total control system in the process of running has the feature of cumbersome and inefficient.   In order to promote the rationalization of the above problems, the staff of our country needs to realize the rationalization of the transmission system and the master control in the process of problem processing, and the control system can promote the relative stability of the master control system during the operation process. In order to further strengthens the signal exchange function.

6.2 Media Center and the Network of Network-Core Relationship
At present , China's television stations in the production process of the program , often do the relevant operations with the media system , in order to achieve the work and television daily production , broadcast business integration . In fact , the implementation of the relevant integration operations can effectively integrate the broadcast and video production , news , broadcast , management and other work to the maximum extend , and thus promote the " data exchange platform " concept implementation . In fact, all television stations in the process of carrying out the process are often able to achieve the video image resources included, collection, production, storage, management which are carried out on a platform. At present, the TV stations staff gradually changed the data exchange platform for the physical core business system concept, and thus promote the "server cluster" concept implementation. Under normal circumstances , the staff in the integrated network based on the news , production and other work production , the server cluster of parallel work also improve the processing speed of each system , and thus drive the effectiveness of the realization of television stations to meet the residents ' demand of the TV .

7. Conclusion
In order to further to promote the sustainable development of China's television industry, China's technical staff in the process of the actual operation has strengthened the rational use of IT technology. Based on this, this paper focuses on the analysis of data exchange technology and network storage technology, and then discusses the integration of TV production system, and IT network technology and television production system model (EPON + EOC mode, EPON + LAN mode) Analysis, and finally discussed the television broadcasting system construction prospects (the role of the master control and media center and the network of network-core relationship). I believe that with the implementation of relevant measures and the use of technology, China's television will be developed by leaps and bounds, and thus promote the realization of the benefits to meet the needs of China's social development and residents' needs for television entertainment, lay the foundation for the prosperity of cultural undertakings.

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