Design and Implementation of Financial Business based on DAB System

Ziyan Yuan

Yunnan Technology and Business University, Kunming, 651700, China

237549328@qq.com

Keywords: business; Data broadcast; DAB.

Abstract: with the development of The Times and the progress of science and technology, people's living standard is gradually improved, financial and economic information has also been widely concerned by people, how to make people more convenient to understand the stock market, professionals put forward the idea of DAB broadcast channel. With the steady development of SMG digital audio broadcasting project in Shanghai, the realization of data broadcasting based on DAB system is also gradually explored. Based on DAB system, this paper comprehensively introduces the specific process of integrating financial and economic information business, and elaborates on various problems encountered during the process, so as to explore effective technical improvement strategies.

1. Basic description of DAB and data business platform

China's digital audio has gone through a development process from scratch, from existence to gradual perfection. Although it has gone through a development path of more than a decade, it is still only in a few regions with pilot projects, no large-scale applications, no terminals, and the rich audio broadband has not been fully utilized. Later, Shanghai media group put forward the digital audio broadcasting project and continuously promoted the project. The development of data business based on DAB system has become a new development direction in the new era. Financial and economic information has received extensive attention. Digital audio broadcasting in Shanghai DAB system is actually an advanced technology in Europe. It is also a new generation of broadcasting after FM broadcasting and am broadcasting. By using digital technology, it can transmit stereo programs with DD quality through lower data transmission rate and distortion rate. It can not only overcome the interference problem in traditional broadcasting, but also provide the data service of accessible reception. Compared with traditional broadcasting technology, FM and AF have the following advantages: first, the sound quality is pure, which can reach the quality of CD; Secondly, it has strong anti-interference; In addition, it is very suitable for mobile listening, and has a better mobile reception effect; Finally, in addition to being able to listen to audio programs, it can also provide data, digital multimedia broadcasting services. In 2007, when DD started its business for the first time, it was inevitable that Shanghai media and communication co., ltd. would take charge of the operation of the project. The following are the programmes that have been broadcast by the system to date: three sets of digital audio broadcasts, two sets of digital video broadcasts and one set of data broadcasts. In addition to the audio of these programs using DAB technology free encoding compression transmission format, other video and other data information transmission using digital television class technology, TS stream format, involving DAB multiplexer. In 2007, the system was officially put into use. In order to ensure the application scope of DAB platform business to be further expanded, the next major consideration is to add new data value-added services, such as financial information, etc. In addition, this can also be regarded as the starting point for the development of terminals. The following diagram will show the flow chart of the DAB platform for better representation.

  DOI: 10.25236/iwmecs.2019.018

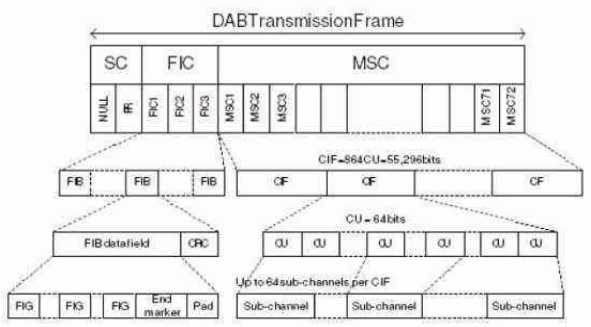

Figure 1 shows the flow chart of the DAB platform

2. Application conditions of financial business coding

In the context of the continuous improvement of China's economic level and the continuous progress of information technology, various kinds of receiving and investment software are emerging in an endless stream, especially the software and business equipment related to stocks, which are widely welcomed. For example, before the stock ticketing machine, stock graphic card, and the current stage of mobile phone stock software, and so on, have a large number of users. In DAB digital broadcasting and other mobile broadcasting platforms, many shareholders who listen to the program hope to intuitively understand the latest stock information and keep abreast of the new news about the decline and rise of the stocks they choose. On DAB digital radio platform, in addition to digital audio business is developing, also need to think about how to play the radio's uniqueness, explore some in line with market expectations and user's value-added services, such as the promotion of DAB digital radio technology widespread application, to grasp the terminal user base, another high-profile value-added business is financial information delivery business. Stock picture-text card is a classic application case in the field of data broadcasting. However, due to the problem of insufficient mobility, it is difficult to improve the user coverage. After the emergence of the mobile stock trading system and stock ticketing machine, the number of users is rapidly shrinking. Because of the influence of broadband and the problem of low frequency of data transmission, the stock exchange machine also has the problem of insufficient data information, and users cannot receive information in time, which will have a serious impact on its revenue. Mobile phone stock trading software is a business system developed in the new era. Although it has strong mobility, it is difficult for front-end data payment service to meet users' actual needs when the number of users reaches a certain level due to its peer-to-peer communication mode. Encountered when the volume of transactions is large, often appear server crash. DAB broadcasting platform broadband is 1.15 trillion, minus two sets of video programs, three sets of audio programs, there are still more than 200 K, can well meet the needs of financial and economic information business. The uniqueness of broadcasting also determines that the number of users will not be limited. When the number of users increases, the marginal cost will be lower. In addition, its front-end server level requirements are not high, all kinds of advantages fully reflect the financial business will have a bright prospect for development.

3. Composition and basic functions of financial and economic business system

Based on the current DAB data broadcast, how to integrate financial services in it without negative impact on the previous system, including how to plan and utilize data broadband reasonably, is a question that financial services system should focus on. The following is a specific exploration on these aspects:

3.1 System composition

The service consists of financial information server, financial information encoder and financial information collector. Firstly, the financial information server is similar to the traditional front-end server system. It can receive the market information of shenzhen stock exchange and Shanghai stock

exchange in real time, and it can also be stored in the hard disk as a database. And as a financial information server, it can be connected to the mobile phone stock trading system. The collector of financial and economic information mainly collects and sorts out the data, and transmits the data to the encoder, designs the historical market data, the latest market information, the history and the latest K chart information, etc. Financial information encoder is to encode and compress the data information that needs to be sent after the collector is integrated, and then transfer it to the data broadcast multiplexer. As a new service of data broadcasting, the operation mode of releasing financial and economic information, traffic information and weather information is the same at the system level.The following is the flow chart of the financial information encoder. See figure 2 below for details.

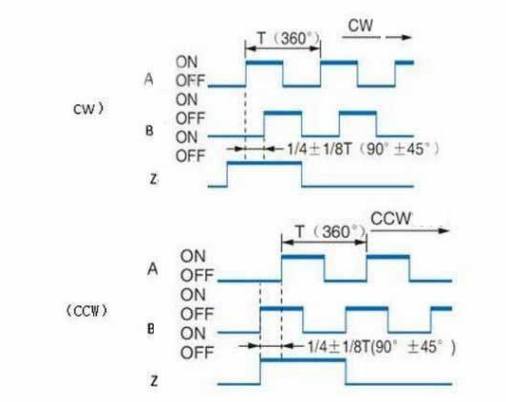

Fig. 2 flow chart of financial information encoder

3.2 coding rules

To ensure that users have a comprehensive and timely understanding of the story information, it is necessary to edit the information in a timely manner and inform the customer in the first time. Coding is a very important work, which can standardize the messy data and strengthen the utilization of broadband. The specific operation methods include information classification, Beijing information transmission and transmission of historical information and five minutes of K line information, stock real-time information and many other content. There are many basic issues that need to be addressed during coding.

3.3 Transmission and broadband utilization

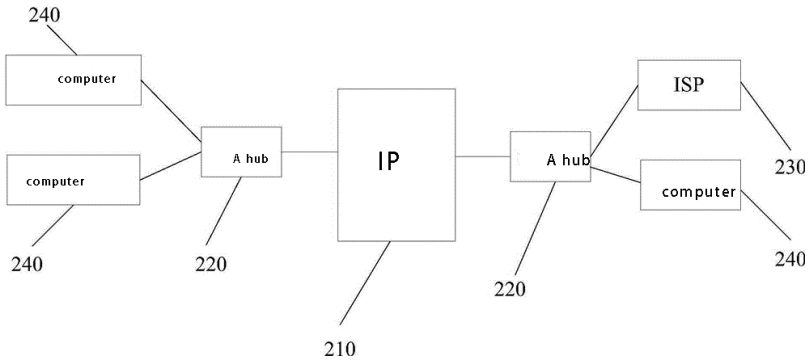

Figure 3 Transmission and wideband transport process diagrams

Based on financial information data and user experience, data types can be divided into several categories and use different transmission bandwidth and frequency to send information. Transmission mode is mainly composed of data rotation mode and real-time transmission mode. The specific operation mode of broadband control is to adjust the data transmission based on the amount of financial information data to ensure its stability. For real-time information, based on its timeliness, it needs to be sent within five seconds as far as possible. For the five-minute K graph, it should be sent within five minutes based on the amount of data. For background data, the transmission frequency

can be adjusted timely based on user experience and broadband. For historical data information, because this kind of information does not have the requirement of timeliness, plus this kind of information belongs to the after-market information, so it can be sent before the opening and after.In addition, transmission and broadband utilization can also be shown in the following figure, as shown in figure 3

4. Late development of financial and economic business

With the development and progress of financial business, although the technical level has been greatly improved, but the terminal software and equipment development still exist many problems, the main reasons are as follows: first of all, supported by the DAB system fundamentally different from the receiving terminal and mobile phone to fry a software, the technology is in preliminary development stage, there are very few manufacturer can produce the technology needed to terminal equipment; Secondly, the non-standardization of data format makes manufacturers reluctant to develop in this field. The last problem is that when the terminal receiving software and the header coding sending system are developed independently, they will have a serious impact on the subsequent system operation efficiency and applicability. In the future work, we should focus on overcoming these problems. First, we need to continuously measure and control the stability of the system to improve the operation efficiency. Secondly, from the perspective of terminal and application, explore the effective path to promote DAB to accept terminal development, so as to ensure the smooth development of the business.

5. Conclusion

Financial data service based on digital broadcasting technology mainly provides real-time financial information, such as stock market quotation, daily K chart and trend chart. The development of financial and economic business has gone through several years. In the later stage, the development direction of this field will focus on two aspects: first, to strengthen the efficiency level and stability of front-end system operation; Secondly, the return function is introduced into the terminal to ensure that it has the function of online real-time transaction. In addition, from the perspective of application, DAB should continue to promote the development and application of DAB acceptance terminals, expand the application scope of DAB, and ensure that the business steps into a benign and sTable development track.

References

[1] Shenwei Zhang, zhou.Chen Traffic information processing and broadcasting system based on DAB technology [J]. Television engineering, 2008, (3):27-29.

[2] YangLiu. Design and implementation of digital broadcasting system based on DAB [J]. China media technology, 2016,(12):49-50.

[3] Xiaolong, Tang Ziwen Luo. Implementation of dab-based message push service [J]. Electronic quality, 2015,(3):12-13.