Thus, this article considers various technologies for creating elements of augmented reality as one of the most important operations of the technological process of creating augmented reality publications, the choice of the most rational – creation with special markers, because it was the least time consuming and fastest among those presented, and also developed a scheme of relationships between flows in this process. As well as due to the fact that the process is entirely in electronic form, at each stage there is a constant interaction of information, energy and material flows.

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MODELING OF A HIERARCHICAL ORDERED MODEL OF PARAMETERS OF INFLUENCE ON THE PROCESS OF PROCESSING AND INPUT OF AUDIO INFORMATION

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Modern digital technologies are rapidly becoming used by modern people [1]. This year, the global virus-caused pandemic has given a big impetus to the further development of such technologies. The public felt the need to use digital technologies not only to find out the news through the online media or to spend their leisure time watching Youtube-channels, blogs, actively maintaining social networks. The use of digital technologies for work, business meetings or meetings with friends, as well as training has become

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relevant [2]. If we consider the publishing and printing industry, it is also no exception. Audio books and podcasts have become quite popular in the last few years [3].

In general, the use of audio information helps the user to perceive and understand the material more deeply. When listening to audio, a person concentrates on the key points of the presented information, which is transmitted by correct intonations, accents and accents. When preparing this type of information, a lot of attention should be paid to the parameters that affect the quality of recording and sound processing. Therefore, a very important issue is to determine the parameters of influence on the process of processing and input of audio information [1].

The processing and input of audio information includes not only the processing of sound using various parameters, and placement in a multimedia publication or distribution platforms, if they are audio books or podcasts, but also directly the process of creating sound.

Creating audio is a professional sound recording in recording studios (narrator reading, recording music, etc.) using software and hardware. Or use text-to-speech technology. As text-to-speech technology is still evolving and gaining popularity, and it has a number of significant shortcomings that affect sound quality, professional audio recording is used to create audiobooks, podcasts, and multimedia publications in general.

Audio is recorded in several stages:

Stage 1 – Preparation for recording. The preparation includes the choice of the book, the preparation of the book by the editor for recording, namely the arrangement of all the emphasis in the book, followed by the choice of speakers who will voice the book.

Stage 2 – Record the book. At this stage, only duplicates are recorded for the future audiobook.

Stage 3 – Installation and completion of the record. At this stage there is a rather painstaking work on the audio recording. The draft version is mounted, the sound director chooses the doubles that will make up the future book, cut out extra pauses, extra sounds, remove noise.

Stage 4 – Listening to the draft. At this stage, listeners and editors listen to the audiobook in order to check the text of the book, check the accents in the words, to decide definitively whether the actors have succeeded.

Stage 5 – Processing the recording for further placement of the audio recording. At this stage, settings such as bitrate selection, sampling rate, audio file format are set.

Stage 6 – Distribution of sound recording.

From a technical point of view, the 5th stage has a great influence on the quality of sound recording. But in addition to the specified parameters that

apply directly to the sound, you must also pay attention to such indicators as sound card, software, RAM, bit DAC and ADC. Because these characteristics affect the work on the sound in general. Hardware performance depends on them.

To determine the factors influencing the quality of audio processing, a number of criteria have been identified to establish a comprehensive relationship between them. To do this, based on graph theory and methods of systems analysis, we can build a mathematical model of the hierarchy of influence of factors [4].

The following parameters are selected for analysis:

C1 – the amount of RAM (RAM);

C2 – sound card (SC);

C3 – bit DAC and ADC (DAC, ADC);

C4 – software (S);

C5 – bitrate (B);

C6 – sampling frequency (SF);

C7 – audio recording format (F).

The selected parameters were analyzed and the relationships between them were established, and a graph of relationships between the parameters was constructed.

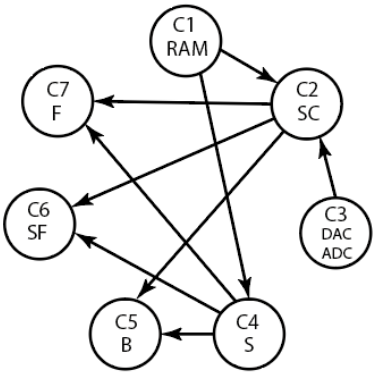

Figure 1. Graph of relationships between parameters that affect the quality of audio processing

Based on the iteration of the analysis of the binary reach matrix, a dominant hierarchical ordered model of parameters of influence on the process of input, processing and reproduction of audio information was created.

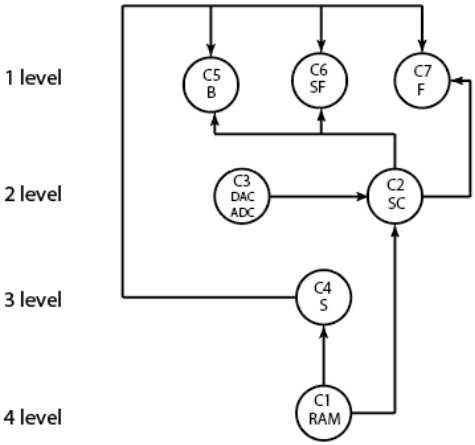

Figure 2. Dominant hierarchical ordered model of parameters of influence on the process of processing and input of audio information

To obtain the weight values of the parameters of the hierarchical model, they are assigned conditional numerical values that reflect the weight of the parameter in the general scheme. Let the fourth level of the hierarchy correspond to the number 15, and the value of each higher level will increase exponentially. The result of such assumptions is the vector = (15, 60, 60, 30, 120, 120, 120).

According to the principles of graph theory, the resulting weight of factors is obtained, which is the basis for establishing the level of priority of their influence on the quality of input, processing and reproduction of audio information. The mathematical model of factors on priority of their influence on quality of input and processing of the audio information which can be applied to calculation of alternative variants of realization of technological process of creation and processing of audio information is synthesized.

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ALGORITHM OF CREATING VIRTUAL TOURS

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Today, virtual tours are very popular, which due to their interactivity has the ability to fill the tour with a variety of information. From text aids, animated illustrations, graphics, background music or an audio route guide to the use of maps and geolocations. Virtual reality mapping is of interest to many areas of our lives. The entertainment and gaming industry was one of the first to make extensive use of virtual reality. Real estate, advertising and marketing, tourism and many other areas are interested in the development of virtual tours. A virtual tour is a way to realistically display the surrounding space on a flat screen. It is a powerful and effective advertising and marketing tool. Also it allows you to get complete information about a service or product.

Virtual tour is one of the most effective and convincing ways to present information at the moment, as it allows you to make exciting virtual tours and create a complete illusion of the viewer's presence.

Creating a quality product is possible through the use of modern equipment and software, qualified personnel, automation of production processes.

At first, the general technology of creating virtual tours was defined. Virtual tours are based on several 3D panoramas connected by navigation buttons. To create a tour, you must first determine the specification of the object. It is necessary to deal with a number of issues, namely: what tour should be; what it is set up for and what topics; filling; how many locations should be; number of frames of panoramas. After the technical task is developed, the necessary multimedia information is selected and processed, such as text, animation, audio, video content. In parallel, the basic objects are

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