information was recorded after the creation of the first generation and references to objects were stored.

Further, the conditions under which the individual was unable to pass into the next generation were identified. An abstract class was created with a single purely virtual method called function(), which implements the selection stage. In derived classes this method was redefined and the quality of the resulting solution was evaluated. The first condition checked whether the received number of hours was included in the interval of the minimum and maximum of the teacher, while the second took into account the ability of this teacher to teach certain disciplines.

Conclusion. As a result of the research, an automated system has been developed to generate the workload of the teaching staff using a genetic algorithm. We have shown that at the initial stage of solving the problem, the genetic algorithm allows you to quickly "scatter" the data, and the criteria provide information about correctness, which will help to make up the next generation.

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DEVELOPMENT OF A CONNECTING LINE USING
A FIBER-OPTIC COMMUNICATION LINE

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Keywords: optical technologies, fiber optic cable, communication line, primary digital stream, transmission system, regeneration section.

Today, communication plays a major role in our world. And if earlier copper cables and wires were used to transmit information, now the time has come for optical technologies and fiber-optic cables [1, 2].

The bandwidth of optical channels is an order of magnitude higher than that of information lines based on copper cable. Optical fiber is considered the most perfect medium for transmitting large amounts of information over long distances. In addition, optical fiber is immune to electromagnetic fields, which eliminates some of the typical problems of copper communication systems [3].

The purpose of the work is to calculate the optimal parameters and develop a communication organization scheme for a fiber-optic transmission system using a fiber optic modem (MOF) E1x32 modem.

Material and methods. The material of the study is an optical cable of the optical cable trunk and intrazone type, the parameters and properties of a fiber-optic connecting

line, as well as the main characteristics of the MOF E1x32 fiber-optic transmission system. The work was based on computational-analytical and comparative methods of research.

To select the necessary transmission system, the method of calculating the primary digital streams (PDS) on certain transmission paths was used:

$$N_{PDS} = \frac{N_{FC}}{q_{PDS}} + N'_{PDS},$$

here N_{FC} – the number of voice frequency channels on a certain trajectory;
q_{PDS} – bandwidth of primary digital streams in voice frequency channels;
N'_{PDS} – a given number of primary digital streams between stations.

Findings and their discussion. The main condition when choosing a transmission system is the need to cover the numerical distribution and multicast digital streams on certain trajectories, as well as the availability of a reserve for expansion. As a result of calculations and identification of types of analysis of various fiber optic modems, an export optical transmission system MOF E1x32 with the corresponding switching stations was determined.

One of the main parameters of a fiber-optic communication line is the regeneration section – this is the entire section of the line through which the signal will be transmitted only in the form of optical radiation [4]. The attenuation of the regeneration sections must be within the limits: $5\ dB \leq A_{reg.site} \leq 31\ dB$. As a result of the study, the permissible length and parameters of regeneration sections in the MOF E1x32 transmission system were determined and it was concluded that the attenuation is within the normal range and, therefore, additional regenerators will not be used on transmission lines.

The quality of digital communication was calculated by the probability of occurrence of errors, which, in accordance with the standards of the division of the International Telecommunication Union, at a maximum distance cannot be more than $0.001 \cdot 10^{-3}$. From the above value, a probability of $0.0002 \cdot 10^{-3}$ is allocated to the section of the international network and $0.0004 \cdot 10^{-3}$ to national networks. Using comparative methods of processing the results of calculations, it can be argued that the expected probability of the appearance of distortions in all areas under consideration will be equal to 10^{-17}, which is an excellent indicator.

Before creating the connection organization scheme, the initial data were taken into account and the composition of the equipment we needed was determined. Since initially we worked with three digital stations and one analog one, in the connection organization scheme for switching between digital and analog equipment, analog-to-digital interface units (BADCs) were used, which allow one digital stream to be formed from 30 voice frequency channels [5]. The required number of fiber-optic modems in all directions was also calculated, while realizing that the considered MOF E1x32 transmission system allows distributing up to 32 primary digital streams. Figure 1 shows the found number of transmission systems (one system in all directions) and the placement of fiber-optic modems in directions.
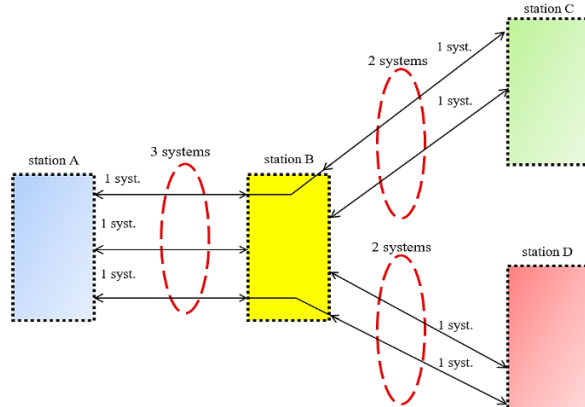
Figure 1 – Layout of fiber optic modems

Conclusion. As a result of the study, the basic principles of fiber-optic technologies were considered, the type of the MOF E1x32 fiber-optic transmission system was determined, and a communication organization scheme was developed taking into account the types of stations under consideration and the technical capabilities of the studied E1x32 MOF transmission system. In addition, it was concluded that the expected probability of distortion does not exceed the allowable value, which means that the connection will fully comply with all fiber optic standards.

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WEB RESOURCE OF FOLK CRAFTS

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Keywords: web application, folk crafts, information systems, internet platform, electronic trading platform.

Nowadays it is difficult to find a platform on which you can quickly, and most importantly, conveniently register as a participant in an exhibition. This web resource is just designed to organize, promote handicrafts and their manufacturers. The site has a nice design, a news section, as well as extensive functionality for moderating and administering content.

Material and methods. The main technologies and methods used to create this system were HTML, CSS, JS, PHP, Laravel, MariaDB. The entire visual part for the