

Method for organizing wireless computer network in biological tissue

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Abstract

Method for organizing wireless computer network in biological tissue. This invention relates to computer technology and biophysics, and can be used for the establishment and operation of a wireless computer network in biological tissue. The nodes of this network are computers connected to the vibration meters and vibration generators. The contact surfaces of vibration generators and vibration meters are brought into contact with the biological tissue. The invention is method for organizing wireless computer network in biological tissue, comprising the fact that the transmission of electronic messages from one node to another node of this network is produced through communication channel of this wireless network, created in the biological tissue which is organized by connecting a source computer to the vibration generator, bringing the contact surface of the vibration generator in contact with the biological tissue, creating and transferring the controlled mechanical motions to the biological tissue through the contact surface of the vibration generator by means of the operation of the vibration generator in accordance with the finite sequence of settings modes of vibration generator representing electronic message transmitted from the source computer and which is received from the source computer, and by connecting to the receiving computer a vibration meter by which the parameters of mechanical motions are registered and which are received by the vibration meter from biological tissue through the contact surface of the vibration meter which is brought into contact with the biological tissue, and through which, on the receiving computer, the results of registration of parameters of mechanical motions are received, and the electronic message is restored from the results of registration of mechanical motions parameters. In addition, each node of this wireless computer network confer capabilities to receive electronic messages through the connected vibration meter from another node of this wireless computer network, and transmit electronic messages through the connected vibration generator to another node of this wireless computer network through communication channels of this wireless computer network, through biological tissue. The technical result is that the radio systems are not used in each wireless communication channel of this wireless computer network in the biological tissue.

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Description of invention:

Title of the invention.

Method for organizing wireless computer network in biological tissue.

Technical field of the invention.

This invention relates to computer technology and biophysics, and can be used for the establishment and operation of a wireless computer network in biological tissue.

Background of the invention.

There is a well known way of organizing wireless computer Wi-Fi network. The nodes of this network are computers with connected radio transmitters and radio receivers. The transmission of electronic messages from one node to another node of this wireless network is produced via wireless transmission link designed for sending electronic messages from the source computer to the receiving computer. Each wireless communication channel of this network is organized in such a way that a source computer is connected to the radio transmitter, and the receiving computer is connected to the radio receiver, and the radio receiver is tuned with the help of special programs on the signal reception to be sent in the form of radio waves, and subject to the radiation by the transmitter connected to a source computer. Then, with the help of special programs the electronic message is transmitted from the source computer via a radio transmitter transmitting via a signal representing the electronic message, and transmitted in the form of radio waves. On the receiving computer, the recipient receives the transmitted signal through radio receiver, then by means of special programs, from the received signal an electronic message is obtained.

Summary of the invention.

The invention is a new way of organizing wireless computer network in a biological tissue. The nodes of this network are computers connected to the vibration meters and vibration generators. The contact surfaces of vibration generators and vibration meters are brought into contact with biological tissue. Each vibration generator confers the ability to create and transmit controlled mechanical motions to the biological tissue via its contact surface through the implementation of its work in accordance with the set of parameters of its operating modes. Each computer confers the ability to control the operations of the connected vibration generator via the transmission of vibration parameters to this vibration generator. Each vibration meter confers the ability to detect parameters of mechanical motions which it receives from the biological tissue via its contact surface, and transfer the results of registration of mechanical motion parameters to the connected computer. The transmission of

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electronic messages from one node to another node of this computer network is produced over the wireless communication channels, designed for the transmission of electronic messages from the source computer to the receiving computer through biological tissue. Each wireless communication channel of this computer network is organized in such a way that a vibration generator is connected to the source computer, and the vibration generator is set up to receive mode parameters of its work from the source computer and implement the work of the vibration generator in accordance with the received parameters of its modes of operation. The vibration meter is connected to the receiving computer, and the vibration meter is set up for the registration of parameters of mechanical motions which it receives from the biological tissue via its contact surface.

At first, an electronic message, which is transmitted, is encoded with the help of special programs in the form of a finite sequence of symbols, using a code satisfying the unique decoding condition. The obtained sequence of symbols is encoded with the help of special programs in the form of a finite sequence of parameters of vibration modes of the vibration generator using a code satisfying the unique decoding condition. Then, the finite sequence of parameters of vibration modes of the vibration generator is transmitted to the vibration generator connected to the source computer. Then, the controlled mechanical motions of the biological tissue are created and transmitted through the contact surface of the vibration generator through the implementation of its work in accordance with the parameters of the finite sequence of its operating modes.

To obtain an electronic message transmitted, a vibration meter is connected to the receiving computer. This vibration meter is designed and set up to receive and record the parameters of the mechanical motions which are received by this vibration meter from biological tissue through its contact surface. Then, vibration meter connected to the receiving computer, is set up for the registration of parameters of mechanical motions received by the vibration meter through its contact surface from the biological tissue, and carry out the registration of parameters of these mechanical motions. Then the receiving computer with the help of special programs is set up to the mode of acquisition the results of registration of the mechanical motion parameters received by the vibration meter from the biological tissue. On the receiving computer, the results of registration of parameters of mechanical motions received by the vibration meter through its contact surface from the biological tissue are received. From the results of registration of the mechanical motions received, with the help of special programs, the finite sequence of parameters of the vibration generator is obtained. The obtained finite sequence of the vibration generator mode parameters is decoded to obtain a finite sequence of symbols. Then the resulting finite sequence of symbols is decoded. As a result of this decoding, the transmitted electronic message is obtained.

The essential condition for the organization of this wireless computer network is that each node of this wireless network confer capabilities to receive electronic messages through the connected vibration meter from another node of this wireless network, and transmit electronic messages through the connected vibration generator to another node of this wireless computer network through communication channels of this wireless network, through biological tissue.

The technical result, which is the achievement of the claimed invention, is that the radio systems are not used in each wireless communication channel of this wireless network in

biological tissue. This technical result is ensured by the fact that the vibration generator connected to a source computer is used as the transmission device in each wireless communication channel of this wireless network in a biological tissue intended for the transmission of electronic messages from the source computer to the receiving computer through the biological tissue, and the vibration meter connected to the receiving computer is used as a receiving device.

Embodiments.

This invention is a new way of organizing wireless computer network in a biological tissue. Each computer which is used in this wireless network as a node of this network is connected to the vibration generator and to the vibration meter, wherein the contact surfaces of the vibration meters and vibration generators are brought into contact with biological tissue. The vibration generator capable to create and transmit of a controlled rate vibrational mechanical motions through its contact surface may be used as an example of the vibration generator. The vibration meter capable of recording the frequency of mechanical motions which it receives via its contact surface can be used as an example of vibration meter. The transmission of electronic messages from one node to another node of this computer network is produced over the wireless communication channels, designed for the transmission of electronic messages from the source computer to the receiving computer through biological tissue. Each wireless communication channel of this computer network is organized in such a way that a vibration generator is connected to the source computer, and the vibration generator is set up to receive mode parameters of its work from the source computer and implement the work of the vibration generator in accordance with the received parameters of its modes of operation. The vibration meter is connected to the receiving computer, and the vibration meter is set up for the registration of parameters of mechanical motions which it receives from the biological tissue via its contact surface.

Then the transmission of electronic messages from the source computer to the receiving computer through the biological tissue is implemented. At first, an electronic message, which is transmitted, is encoded with the help of special programs in the form of a finite sequence of symbols, using a code satisfying the unique decoding condition. The coding of the electronic message as a finite sequence of symbols consisting of 0 and 1, by writing it as a binary file using special software on a storage device which is connected to the source computer, can be used as an example of such a coding. The obtained sequence of symbols is encoded with the help of special programs in the form of a finite sequence of parameters of vibration modes of the vibration generator using a code satisfying the unique decoding condition.

As an example of such a coding may be used the following coding comprising that each number 0 is assigned the ordered pair of numbers (10, 5), whereby the parameters of the operating modes of vibration generator are set up, and in which the first number 10 is the frequency of the vibrational motions generated and transmitted by the vibration generator through its contact surface, which is set to 10 Hz, and the second number 5 is set equal to 5 seconds of duration of the work of the vibration generator, according to the first parameter

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of the operating mode of the vibration generator; each number 1 is assigned the ordered pair of numbers (20, 5), whereby the parameters of the operating modes of vibration generator are set up, and in which the first number 20 is the frequency of the vibrational motions generated and transmitted by the vibration generator through its contact surface, which is set to 20 Hz, and the second number 5 is set equal to 5 seconds of duration of the work of the vibration generator, according to the first parameter of the operating mode of the vibration generator. Then, from the source computer, the obtained finite sequence of parameters of the vibration generator is transmitted to the vibration generator. Then, the controlled mechanical motions of the biological tissue are created and transmitted through the contact surface of the vibration generator through the implementation of its work in accordance with the parameters of the finite sequence of its operating modes.

To obtain an electronic message transmitted, a vibration meter is connected to the receiving computer. This vibration meter is designed and set up to receive and record the parameters of the mechanical motions which are received by this vibration meter from biological tissue through its contact surface. Then, vibration meter connected to the receiving computer, is set up for the registration of parameters of mechanical motions received by the vibration meter through its contact surface from the biological tissue, and carry out the registration of parameters of these mechanical motions. As an example of the results of registration of mechanical motion parameters may be used a vibrogram. Then the receiving computer with the help of special programs is set up to the mode of acquisition the results of registration of parameters of mechanical motions received by the vibration meter from the biological tissue. On the receiving computer, the results of registration of parameters of mechanical motions received by the vibration meter through its contact surface from the biological tissue are received. From the results of registration of the mechanical motions received, with the help of special programs, the finite sequence of parameters of the vibration generator is obtained. The obtained finite sequence of the vibration generator mode parameters is decoded to obtain a finite sequence of symbols. Then the resulting finite sequence of symbols is decoded. As a result of this decoding, the transmitted electronic message is obtained.

The essential condition for the organization of this wireless computer network is that each node of this wireless network confer capabilities to receive electronic messages through the connected vibration meter from another node of this wireless network, and transmit electronic messages through the connected vibration generator to another node of this wireless computer network through communication channels of this wireless network, through biological tissue.

Claim:

What is claimed is:

Method for organizing wireless network in biological tissue, comprising the fact that the transmission of electronic messages from one node to another node of this network is produced through communication channel of this wireless network, created in the biological tissue which is organized by connecting a source computer to the vibration generator,

bringing the contact surface of the vibration generator in contact with the biological tissue, creating and transferring the controlled mechanical motions to the biological tissue through the contact surface of the vibration generator by means of the operation of the vibration generator in accordance with the finite sequence of settings modes of vibration generator representing electronic message transmitted from the source computer and which is received from the source computer, and by connecting to the receiving computer a vibration meter by which the parameters of mechanical motions are registered and which are received by the vibration meter from biological tissue through the contact surface of the vibration meter which is brought into contact with the biological tissue, and through which, on the receiving computer, the results of registration of parameters of mechanical motions are received, and the electronic message is restored from the results of registration of mechanical motions parameters, characterized in that each node of this wireless computer network confer capabilities to receive electronic messages through the connected vibration meter from another node of this wireless network, and transmit electronic messages through the connected vibration generator to another node of this wireless computer network through communication channels of this wireless computer network, through biological tissue.

Remark.

This article is identical to the patent application "Method for organizing wireless computer network in biological tissue" with number: 2015108012, which was published in Russian and filed at Russian Patent Office: Federal Institute For Intellectual Property, Federal Service For Intellectual Property (Rospatent), Russian Federation (See: [1]).

References.

1. A.I. Bodrenko."Method for organizing wireless computer network in biological tissue". Inventor and Assignee: Andrey I. Bodrenko (RU). Application number: 2015108012. Priority date: 06.03.2015. Filed: 06.03.2015. Publication date: 27.09.2016. Bulletin № 27. URL: <http://www.fips.ru/Archive4/PAT/2016FULL/2016.09.27/DOC/RUNWA/000/002/015/108/012/document.pdf> [in Russian].