

Monitoring mobile network of control functional state of sportsmen

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Abstract - The personal mobile network is offered for monitoring of power indexes of organism of sportsmen – rowers and estimation them the functional state during a training process.

I. INTRODUCTION

During trainings the action of sportsmen is related to the considerable physical and nervous loadings, that causes the necessity of prognostication in time of the functional state of their organism and proper корегування of training process. Subject to the condition, characteristic for boating moving of boat and sportsman or sportsmen which are in him, the effective decision of this problem is possible by the use of wireless network.

II. RAISING OF TASK

Achievement of the indicated purpose in this work is carried out raising of basic task on development of the wireless personal network and research on the physical and channel levels of the open system of monitoring of physiology parameters of sportsman and estimation of him the functional state, and also its realization.

III. BASIC PART

A mobile network which is offered functions in accordance with rules, certain the standard of IEEE 802.11 (Bluetooth). It is oriented to the use of frequency range 2,4 GGc.

Estimation of the functional state of sportsmen – rowers is carried out on the basis of current information, which is read from electronic onometers, measuring device of arteriotony and cardio registrator. By an algorithm processing of data of these devices initial determination of indexes of loud speaker and proper them indexes of piziko-mechanical properties of myocardium of the left ventricle of heart, aorta is foreseen, пересердя, and also indexes of work of valvular vehicle. The enego expenses of sportsman settle accounts and the size of energy which can be maximally utilized a sportsman in the process of his professional actions is forecast [1]. Measurements are executed at once and in 1 minute. There is correlation of sizes of energy at CHSS = 170 shots for a minute and at frequency of heart-throbs (CHSS) of rest approximately 70 shots for a minute, that an index estimates ability of heart of sportsman which executes the functions of producer of energy, to maintain the certain professional loadings. Time of change of power potential of the left ventricle of heart is determined from a size proper CHSS = 170 shots for a minute, to the size of CHSS of rest of sportsman, that an index is that characterizes possibility of the left ventricle to proceed in the possibilities. Obviously, than anymore first and than less than second indexes, the higher sporting form. The complex index of form of sportsman is attitude of the first index toward the second.

Measuring devices of physiology parameters parcel of land of individual of USB – by the adapters of Bluetooth, passing to information through which direction to port of USB of side computer which carries out the role of «server». At physical level of standard of IEEE 802.11 certain speed of exchange of information between mobile devices, type of modulation of radio signal which is passed. At channel level principle of the use of network of general channel of transmission components is certain, the method of connecting to the points of access is inflicted.

Server software will realize collection of results of measurings of frequency of heart-throbs, arteriotony, pulse, leads them compatible treatment after an algorithm [1], forms the results of results and their transmission from a side computer, located on a sporting boat, to workstation of trainer which is on a cutter, «accompanying» sportsman. Getting this information, a trainer by radio of stand «shines» on the side board of boat the proper commands which specify on the necessity of correction actions of sportsman are concerted from by rowers.

Information about the functional state, allows to estimate readiness of sportsman to implementation of the trainings loadings of the set volume and intensity, and also to carry out the correction of the training program, that allows to perfect sporting trade of rowers.

IV. CONCLUSIONS

1.It is certain, that with the purpose of increase of professional results of sportsmen, expediently during trainings real-time to estimate the size of energy which is outlaid, and forecast its diminishing during a training cycle.

2.A monitoring mobile network is offered for monitoring of power indexes of organism of sportsmen – rowers on the basis of the use of side computer and vehicle facilities which serve for the receipt of necessary physiology information of sportsman, allotted individual USB – by the adapters of Bluetooth.

LITERATURE

1.Бойко В.І., Нельга А.Т., Рейдерман Ю.І., Біотехнічний комплекс корегування фізичного стану спортсменів. //Електроника и связь/, №19, 2004.