Life support Challenges for Human Space Exploration (10)
Supporting Crews for Exploration Missions (2)

Author: Prof. strogonova lubov
Moscow Aviation Institute (State Technical University), Russian Federation, strogonova@comtv.ru

Mr. Maxim Terentyev
Moscow Aviation Institute (State Technical University), Russian Federation, kaf609@mai.ru
Ms. Sofya Makarova
Moscow Aviation Institute (State Technical University), Russian Federation, itssony@mail.ru

# REALIZATION OF PERMANENT 24-HOUR MEDICAL CONTROL OF PSYCHOPHYSIOLOGICAL STATE AND REGISTRATION OF SPATIAL COORDINATES WITH THE USE OF WIRELESS SENSOR NETWORK

**Abstract**

Health control, valuation of physical capability and functional backup at all flight stages are the major part of health and efficiency support and spacecraft crew reliability. Modern methodology of health control on permanent orbital station and during human interplanetary flights is based on electrophysiological signal transmission by radio channel. This makes it possible to receive necessary medical and psychophysiological information during professional activity in real time. At present available medical devices build on data collection and data transmission at the given time. Developed in MAI monitoring system enables to do wireless registration both electrophysiological signals and spatial coordinates of cosmonauts. For this purpose space station or interplanetary spaceship are equipped with Wireless Sensor Network which receives and transmit signal on medical computer. Received information allows to make true and efficient decision on correction of work-rest ratio, health support activities, psychological crew support. The carrying of approbation of wireless sensor system detector test unit is planned in collaboration with Institute for bio-medical problem. During this experiment will be received data of psychophysiological status of operator during realization of complex of operator and physical tests, and also will be done metrological certification of metering technique. Successful completion of developed monitoring system allows to include this one in system of medical control and in system of medical support of decision making in spacecraft medical backup. The proposed system is usable not only in space biology and medicine, but also in sports medicine for correction and optimization of work-out session.