

SPACE LIFE SCIENCES SYMPOSIUM (A1)
Life Support and EVA Systems (6)

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PROJEKT HYDRONAUT1

Abstract

Abstrakt title: PROJECT HYDRONAUT 1 European Underwater Experimental Station and Scientific Laboratory
Abstrakt text: The project Hydronaut 1 provides unique experimental facilities in Europe, available for European scientists and training center for astronautical activities of all member states of ESA. The Hydronaut1 station will be used for medical, biological, physiological and psychological research, training astronauts, testing equipment and people in long-term stays below the surface in a confined space. Equipment design is based on the technology and scientific knowledge readily available. On this underwater platform can be tested and exercised the procedures applicable for spaceflight, space station equipment, parts and components. Research in scientific areas related to long-term missions can be carried out in this suitable environment simulating some specific aspects of future manned missions to Mars. Astronaut training in cooperation with ESA will be seek upon to address the relevant experiments and the use of this platform for ESA own projects. It can be additionally used for diving activities in the CMAS, IANTD, ITD, NAUI, PADI, SSI, TSA, UDI licenses. Station will allow implementation of a broad range of programs and experiments in simulated conditions: Hyperbaric medicine, methodologies focusing on medical, physiological and psychological research. • Physiological adaptation to isolated and restricted environment, • monitored sleep and circadian rhythm, • studying group dynamics and leadership, (Alternative to Mars 500) • liveability and psychological countermeasures, • Addressing high-risk and stressful situations, • psychophysiology, • medical procedures performed remotely using surgical robots. Biological : • closed artificial ecosystems • hydroponic cultivation of plants, production of O₂, food • behavior of animals for research purposes