

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

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ENVIHAB – THE NEW MODULARLY DESIGNED RESEARCH FACILITY FOR MEDICAL  
RESEARCH AT DLR, COLOGNE, GERMANY**Abstract**

:envihab is a new modularly designed research facility for medical research to study the effects of different (extreme) environments on humans and possible countermeasures. At the same time :envihab is a highly sophisticated research platform for international and interdisciplinary cooperations of scientists of a wide field of research disciplines; additionally, a special focus is put on public outreach in general and on inspiring the next generation of scientists in particular. Therefore, key to :envihab is taking a combined approach of bringing together scientific as well as industrial and educational communities under the topic of :envihab. The facility measures insides some 3,500m<sup>2</sup> in size for research. Up to 12 test subjects can be housed at the same time. Basically, :envihab is designed according to the house-in-house-principle, which means that :envihab encompasses a total of eight different modules such as a newly developed scientific human centrifuge, physio-lab with e.g. O<sub>2</sub> reduction and hypobaric area and sleeping facility with adjacent MRT/PET, and psycho-lab for stress simulation and rehabilitation, and bio-lab for microbiological and molecular biological research. Principally, the modules can be strictly controlled, e.g., with regard to temperature, humidity and/ or strictly hermetically sealed from the environment/ from other modules. :envihab also includes a public outreach area. These modules can be combined individually and strictly controlled according to the requirements of a specific study protocol. :envihab offers a wide range of new and trend-setting research opportunities and perspectives. Thus, :envihab enables sustainable innovation and helps meeting the future challenges of human spaceflight as well as those of terrestrial applications. :envihab is currently under construction at the campus of the German Aerospace Center (DLR) in Cologne, Germany and will be operational in 2013. The official opening ceremony of :envihab will take place July 5, 2013 with the opening of the Humans in Space 2013 Congress in Cologne, Germany, two days later.