



Interested candidates please contact KBR Wyle GmbH for a full job description
Please apply via email to: jobs@wylelabs.de

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Job Description

Biomedical Engineer (BME)

About Us:

KBR GmbH (Wyle GmbH) was established in October 2000 to provide requested human spaceflight medical support services to the European Space Agency's (ESA) Space Medicine Team (SMT) at the European Astronaut Center (EAC) in Cologne, Germany. Wyle GmbH specializes in biomedical engineering, space medicine, health care administration, psychology, nutrition, radiation, medical informatics and technology, fitness and rehabilitation, physiotherapy, medical education maintenance and capacity building, project/strategy/risk management, medical projects, and consulting support services to aerospace, government and space life science/medical research customers. KBR GmbH's employees contribute to a wide range of important projects including astronaut selection and training, medical operations for the International Space Station, and supporting the SMT of the European Space Agency.

Purpose of the Job

A Biomedical Engineer (BME) is a member of the ESA Space Medicine Team (SMT) and typically within the Engineering & Operations (E&O) unit. The general function of the BME is to ensure astronaut health and well-being by providing medical operational, engineering, and project support to the ESA crew surgeons, the SMT medical project development entity, and other ESA human spaceflight mission support disciplines. This includes medical technology development support, document preparation, operational processes development, flight controller training, continuous coordination with the different ESA Human Spaceflight Integration and Operations entities and the International Partner communicator and medical teams, and console support in the role of EAC Crew Operations Support (ECOS) Flight Controller and/or EUROCOM Flight Controller. As ECOS Flight Controller, the BME ensures the ops preparation and real time implementation of ESA activities assigned to ECOS in the domain of crew support, Astronaut training, and medical operations and technology testing. As EUROCOM flight controller, the BME is responsible for Crew Communications and Medical Operations. The BME ensures that ESA is ready to provide Real Time (R/T) support to the ESA astronauts, the International Partner Communicator and Medical teams, and the ESA Flight Control team during ISS Space Missions. The EUROCOM is also the medical representative to the Mission Control Center in the absence of the ESA crew surgeon. In the EUROCOM role on console, the BME facilitates the communication between the ESA Flight Controllers on the ground and the crew on-board the ISS and represents the ESA crew's interest in the ESA Flight Control Team. He/she ensures the implementation of the ESA Flight Program, monitors, and annotates biomedical, environmental, and other crew-related data, maintains awareness of ongoing on-orbit operations, and ensures the implementation of the ESA Medical Support Program. A large portion of the job corresponding to flight operations involves responding to new situations as they arise.

Background and Experience

The candidate should possess a degree in engineering or science. Specifically, degrees in Biomedical Engineering, Biology, Systems Engineering and Computer Science in the areas of software development, data architecture or system architecture are encouraged. Communication, problem solving, and organizational skills are also necessary.



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A background in physiology is important. A working knowledge of Medical Operations and space program procedures is preferred. Mission Control experience makes the ECOS and EUROCOM Flight Controller more effective.

Additional experience in the following areas is an asset. ISS specific areas are followed with relatable experience obtained through other means:

- ISS Medical Systems: technical aspects of emergency or critical care diagnostics
- ISS space flight procedures development: process development/engineering and developing standardized procedures
- Space flight communication protocols: utilizing strict and concise communication standards
- ISS Astronaut training lesson design, development and implementation: formal lesson planning and execution
- Operations preparation and implementation of an ISS payload: experiment planning and execution within life sciences
- Medical technology development (preferably for human space flight)
- ISS Medical Operations ground segment infrastructure: enterprise systems and data management
- A knowledge of human physiology, life sciences, or medical technology is important

Job Functions (may include the following and other activities as reasonably assigned):

GENERAL functions

- Support the ESA Crew Surgeon with the implementation of ESA crew medical activities during pre-flight, in-flight, and post-flight mission phases.
- Support the COLUMBUS Flight Control Team and the ESA Mission Directors on any astronaut health issue impacting or related to Columbus and ESA payload operations.
- As a representative of the ESA Medical Operations Team support increments as Increment Medical Operations Lead (IML).
- Support the ESA Medical Data Specialist, Fitness, Rehabilitation and Countermeasure expert, Psychologist and other space medicine experts (as necessary) during pre-flight, in-flight, and post-flight mission activities.
- Monitor astronaut health status, bioenvironmental data, crew workload, medical activities, and any ESA activities with potential impact to crew health or to the ISS Medical Program during all mission phases, and coordinate with the ESA Surgeon, ESA, and ISS Flight Control teams the actions needed to ensure ISS crew health and well-being.
- Support the Space Medicine Team for the requirements definition and development of an ESA exploration medical system, and other medical projects.
- Provide operations preparation and console expertise to ESA exploration medical system technology demonstrations and other SMT medical projects in Analogues and on-board the ISS and Gateway.
- Support the development of new operational scenarios for future ESA Human Space Programs.
- Travel within Germany, within Europe and international travel.

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