



THE UNIVERSITY *of* EDINBURGH

## *News Release*

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### **Humanoid Valkyrie robot begins preparations for Mars missions**

A human-sized robot is being developed in preparation for missions to the Red Planet.

Experts will seek to improve the physical and computational abilities of the 1.8 metre, 125 kg machine – named Valkyrie after the female spirits of Norse mythology – in a collaboration between NASA and the University of Edinburgh.

Currently, the humanoid machine can walk on two legs and perform basic movements, such as holding and manipulating objects. Researchers will work to give the Valkyrie a much more sophisticated set of skills, enabling it to better understand and respond to its surroundings.

University scientists will seek to improve the robot's handling and walking capabilities, and use Valkyrie's sophisticated on-board sensors to help it make sense of its environment, and improve its manoeuvrability.

Researchers will also aim to further develop the robot's ability to interact closely and safely with humans and other machines.

The Valkyrie is the only robot of its type in Europe, and one of three prototypes in the world. NASA hopes to equip the Valkyrie to go to the Red Planet many years before astronauts are able to make the journey, for pre-deployment tasks and to maintain assets on Mars.

Valkyrie's human-like shape is designed to enable it to work alongside people, or carry out high-risk tasks in place of people.

The Valkyrie project is supported by the Engineering and Physical Sciences Research Council, and is conducted at the Edinburgh Centre for Robotics, a joint initiative between the University of Edinburgh and Heriot-Watt University.

Professor Sethu Vijayakumar, of the University of Edinburgh's School of Informatics and Director of the Edinburgh Centre for Robotics, said: "Valkyrie is a huge scientific undertaking. We are looking forward to tackling the many technical challenges involved in developing a large-scale humanoid robot, and pushing the state of the art in humanoid robotics."

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