

Liverpool Scientists To Develop Space Robots With NASA

LIVERPOOL, UK – 18 July 2005: Scientists from the Research Institute for Advanced Computer Science (RIACS) at NASA and the University of Liverpool are working together to develop robotic systems used in space that will reduce the need for human space travel.

Scientists from NASA's Ames Research Centre and computer specialists from the University of Liverpool are investigating ways of improving technology in order to reduce the reliance on humans for space travel and develop the potential for robotic space missions.

University scientists are developing technology that will enable robots to 'think' autonomously, so that they might conduct entire space missions without human supervision.

Professor Michael Fisher, Director of the University's Verification Laboratory, explained: "Autonomy is a major cost driver for space exploration since human missions require large earth-based teams for support. There are also significant risks posed to humans sent into space.

"We are currently studying new forms of software that aim to improve the accuracy of decisions made by space robots so that missions can be completed with greater success. We are also analysing software that will enable robots to work alongside humans in space."

The RIACS scientists will meet with computer specialists at the University of Liverpool this week to discuss the possibilities for joint human and robot deep space missions and investigate the potential of new software to enable such missions.

Autonomous software components used in space are difficult to verify or control due to the diverse environments that they encounter in the cosmos. It is considered essential by space experts to attempt verification of autonomous software before deployment, as these systems are among the most complex and error prone to develop.

More follows ...



Notes to editors

1. Photo opportunity: The RIACS scientists will meet with University computer specialists for the Agents in Space Symposium, being held at the University of Liverpool on Wednesday, 20 July. Photos in the Sherrington Building, Ashton Street, from TIME. The event is sponsored by the University of Liverpool, Science Systems and the Research Institute for Advanced Computer Science (RIACS).
2. The University of Liverpool is one of the UK's leading research institutions. It attracts collaborative and contract research commissions from a wide range of national and international organisations valued at more than £90 million annually.
3. The University of Liverpool's Verification Laboratory aims to develop, apply and exploit high quality formal verification techniques pioneered within the Department of Computer Science at Liverpool, particularly with the aim of increasing industrial, commercial and governmental collaboration at local, regional and international levels. The aim of *formal verification* is to analyse systems in order to ascertain whether users can be sure that such systems will behave in line with high-level, logically defined requirements. The Verification Laboratory is actively engaging with companies, such as Motorola and Marconi, and organizations, such as NASA, to develop practical verification tools.

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