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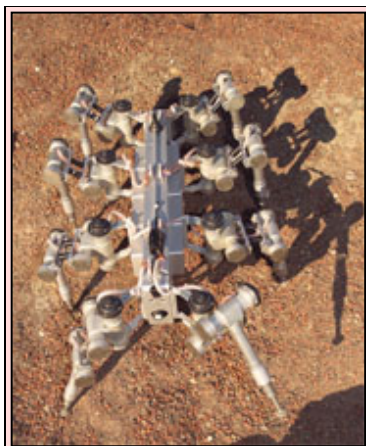
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Published online: 10 February 2005; | doi:10.1038/news050207-14

Scorpion robot could conquer worlds

Jessica Ebert

Walking machine may go where wheeled explorers cannot.



The Scorpion robot mimics the walking style of its living counterpart.

© NASA

Planetary rovers may soon have an eight-legged mechanized side-kick to help them explore distant planets. The Scorpion robot is able to descend steep cliffs, climb rough terrain, and squeeze into crannies that are inaccessible to larger, wheeled vehicles.

The dog-sized prototype is the brainchild of Frank Kirchner, a robotics specialist at the University of Bremen in Germany. It is currently being evaluated at NASA's Ames Research Center in Moffett Field, California.

Some of the most interesting places on Mars are on the faces of cliffs or in areas that are too small or rocky for a car-sized rover to reach, says Silvano Colombano, a NASA scientist and

collaborator on the project at Ames. A Scorpion, however, could "go into these areas, look at the geology and pick up samples", he suggests.

Walking robotics is a relatively new field, and engineers are taking cues from biology to give these machines versatile locomotive capabilities. The Scorpion, for example, moves by following an internally generated pattern based on the movement of its real-life counterparts. "The program has the flexibility to allow [the robot] to adapt to the environment," says Colombano. Essentially, he says, it has "reflexes that take over at the point when the motion is somehow obstructed".

The manoeuvring abilities of the Scorpion come at a price, however. The robot is too small to carry lots of power. "It needs to be connected to a larger robot that can provide it with power, or recharge it," says Colombano. Once this technical kink is ironed out, the Scorpion should aid complex roving missions.



[Click Here](#) for a video of the Scorpion in action.

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Researchers could also use the robot on Earth, to investigate mines or search for earthquake survivors trapped in rubble.

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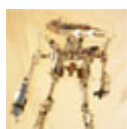
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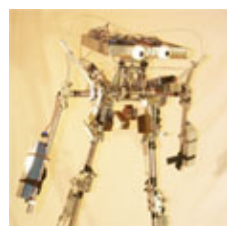
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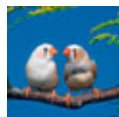
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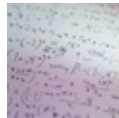
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