



Esposizione
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Producing water from thin air: the rover challenge

A robot which takes up humidity from the air and soil and condenses it into water presented at EIMA. The Rover Water, totally autonomous and controlled via satellite, was conceived for the Mediterranean islands with a scarcity of water resources

A tracked robot with an electric motor, sensors and a satellite control system. Presenting the *Rover Water*, a revolutionary irrigation machine capable not only of learning on its own the water needs of each plant and irrigating it at the ideal time but also, amazingly enough, of producing its own water supply from thin air. Right now, the machine is still on the drawing boards and scheduled for development beginning in 2009 by the UNACOMA (Confindustria) Innovation Laboratory and the Caleidos Group, a Ferrara mecatronic design and engineering company. The *Rover Water* concept is based on biomimetics, the study of biological methods to apply to the design of engineering systems. In Bologna this morning, during an EIMA conference on mechanization in Mediterranean dry zones, it was explained that the track of the machine will feature the same structure as the skin of the Thorny Devil, an Australian lizard with a desert habitat capable of taking up the scant humidity in the soil and condensing it into drops. Panels fitted to the "torso" of the robot will be made of materials which replicate the tail of a Namibian beetle that lives in the Namib Desert that survives by using its bumpy shell to draw, through a highly sophisticated aspiration system, drinking water from periodic fog-laden winds. Marco Migliari, on the Industrial Design staff of the Milan Polytechnic, reported, "The *Rover Water* was conceived for a load capacity of thirty liters of water, a quantity sufficient for selective irrigation and in line with the needs typical of a small operation on the Mediterranean islands." In fact, the robot will be guided by satellite providing a reading of the terrain and the state of health of each plant. The machine fits into a line of mechanization research for the Mediterranean islands coordinated by Felice Pipitone, on the Agrarian Mechanics faculty of the University of Palermo and comes as the most technologically advanced answer to the water emergency experienced by farmers specializing in quality horticultural production. "The reduction of rainfall and climatic change are creating more and more of an emergency and require a search for solutions which are ingenious and equally innovative," said Domenico Pumo, a water specialist at the University of Palermo.

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