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The Design And Construction Of A Flexible Robotic Device

The goal of this project was to create a robotic device that is controlled entirely from a remote computer. The robot should be able to complete the following: A) run any USB device on the market today for data collection, B) provide the operator with a video feed from the robot, and C) allow all operation and control to take place from a workstation (computer and RC controller). The Flex-Bot meets all three of these requirements. It establishes a connection between two computers, one in the robot and another standalone, transmitting data via a connection of choice. Any USB device on the market can be used on the robot for scientific research, and any change can be made to the computer running these devices from the host pc. This combination makes for a uniquely powerful device that is relatively inexpensive yet still competitively powerful. The Robot runs from two drive wheels, and four independent fully rotating wheels. The middle two are omni directional and act much in the same manner as a skid steer. Tires can be changed as does the mission, ranging from off-road tires to streamlined indoor tires. Off road tires for the Flex-Bot are large, yet with lots of relief, imitating shocks but serving the same purpose. The combination of physical strength and technologic power in the Flex-Bot create a uniquely inexpensive, adaptable powerful robotic platform that can be used by any person, for any job, something uncommon in today's robotic world.