

Designing a Universal Robotic Control System for Military Platforms

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Abstract

The purpose of this paper is to present the design methodology for a universal robotic control system for military platforms that is chassis independent and operator control unit independent. The intent is to provide a control mechanism that is portable between various military robotic platforms in order to eliminate the platform specific operator control unit. With a preponderance of robotic platforms and controllers, the need exists to develop a more generalized controller that will augment or replace existing control systems. Using a universal controller will enable research and development of semi and fully autonomous systems on current military platforms. Our approach is to standardize the controller to platform link, establish wireless Internet connectivity and utilize a web-based graphical user interface to control many of the existing military platforms. We leverage low cost, off-the-shelf components, an existing wireless infrastructure and decreased network latencies to provide the design for a highly programmable and adaptable control system.

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