A DUAL ARM ROBOTIC PLATFORM CONTROL FOR NAVIGATION, INSPECTION AND TELEMANIPULATION

Control Architecture for CERN Robots

High intensity hadron colliders and fixed target experiments require an increasing amount of robotic telemanipulation to prevent excessive exposure of maintenance personnel to the radioactive environment. Telemanipulation tasks are often required on old radioactive devices not conceived to be maintained and handled using standard industrial robotic solutions. Robotic platforms with a level of dexterity that often require the use of two robotic arms with a minimum of six degrees of freedom are instead needed for these purposes. In this poster, the control of a novel robust robotic platform able to host and to carry safely a dual robotic arm system is presented. The control of the arms is fully integrated with the vehicle control in order to guarantee simplicity to the operators during the realization of the robotic tasks. A novel high-level control architecture for the new robot is shown. The work has been successfully validated through several hours of operation in CERN accelerators harsh environments.

MODULAR CONTROL SYSTEM
CERNbot in different operational configurations

CERNbot Control System | Gallery

Autonomous navigation and environmental measurements
Telemetpulation
Several robotic arms integrated
Fusion of many sensors