National Defense Center for Energy and Environment

INTELLIGENT BATTERY TRAY FOR SMALL- AND MEDIUM-SIZED EOD ROBOTS

PROJECT OVERVIEW

The battery tray of small- and medium-sized surveillance robots usually consists of multiple standard military battery units. The robot performance will be limited by the weakest battery unit(s); if unattended, it could result in reduced mission time, unexpected mission interruption, high failure rate and increased maintenance cost.
This project developed an intelligent battery tray to monitor and control these standard battery units at the system level to directly address the above challenges.

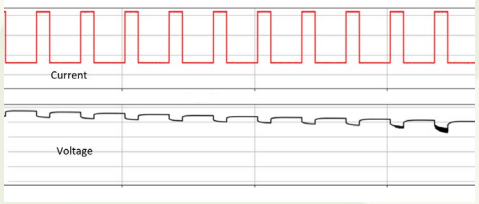
BENEFITS

This intelligent battery tray optimizes battery usage and stress and allows the robot to achieve:

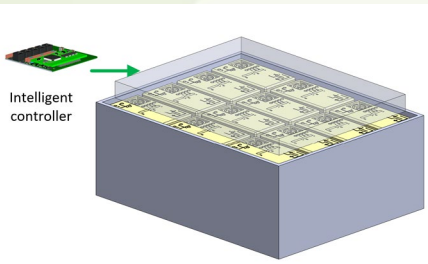
1) Maximized mission time;
2) Reduced operation interruption;
3) Fault tolerance; and
4) Improved battery cycle life (lowers costs)

PATH FORWARD

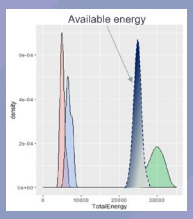
The intelligent battery tray will be tested on small- and medium-size robots to demonstrate the benefits in an operational environment.



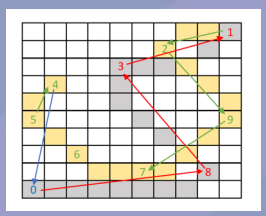
Maximized mission time
(example mission profile shown)



Intelligent battery tray concept view



Reduced operation interruption



Mission planning assistance

DoD Executive Agent
Office of the Assistant Secretary of the Army for Installations, Energy, and Environment

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