# Advanced Data Acquisition and Control System (ADACS)

Leonardo DRS' Advanced Data Acquisition and Control System (ADACS) is designed to prevent electrical explosions caused by "arcing" in shipboard medium- and low-voltage switchboards.

An arc fault is a high-power discharge of electricity between two or more conductors. An arc flash is the pressurized blast of plasma and hot air that occurs when the arc strikes the conductors. The plasma can burn through metal or escape through vents and cracks in a switchboard or through uncovered switchboards during routine maintenance, damaging equipment and property and potentially injuring or killing nearby personnel.

ADACS quickly detects and mitigates an electrical arc before it can damage an electrical distribution system. The system combines a conventional smoke detector's radioactive ionization chamber with custom electronics, allowing it to sense outgassing that indicates overheated electrical insulation. Before the connection can reach temperatures necessary to melt copper (1,981°F) and create an arc or electrical fire (36,000°F), the detector sends an alert that allows operators to maintain uninterrupted power while addressing the problem. In the event of a major incident, ADACS automatically shuts down power to the affected area, thereby reducing the possibility of a major fire or injury to personnel.

LEONARDO DRS

# ADVANCED DATA ACQUISITION AND CONTROL SYSTEM (ADACS)

Evolving from nearly three decades of development for Navy ships and submarines, ADACS is presently installed in all U.S. Navy submarines and nuclear aircraft carriers. The systems are credited to date with preventing catastrophic electrical failures and fires on 10 naval ships and saving potentially hundreds of lives. Leonardo DRS has acquired the rights to market, manufacture and sell this patented arc fault and arc flash detection system through a technology licensing agreement with Johns Hopkins University Applied Physics Laboratory (APL).
gas, commercial marine, yacht, transport, drilling and pumping applications.

## HIGHLIGHTS

- Predicts, detects and mitigates high resistance (impedance) and arcing faults that cause significant damage in switchboards, load centers and turbine generator voltage regulator cabinets
- Leonardo DRS' Advanced Data Acquisition and Control System is comprised of multiple control units supporting up to five zones, each zone providing arc fault protection for 13 or more locations
- Wideband photo sensors determine if an arc is present and signal power disconnect, thus minimizing equipment damage and personnel hazards
- Thermal Ionization Detection sensors support continuous thermal monitoring of switchboard by detecting arc event precursors, thus preventing equipment damage and protecting personal safety
- Autonomous sensor discovery and testing, and user re-configuration of protection zones

## ADACS GENERATION 3

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| Executes the JHU APL Generation 1 and Generation 2 Technology in the same precise manner. |
| Is fully qualified for U.S. Navy Requirements |

## CURRENTLY DEPLOYED ON NAVY VESSELS

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| DDG 51 Modernization Program |
| DDG 1000 Program |
| Littoral Combat Ship |
| LHA Amphibious Assault Ship |
| CVN-79 Ford Class Ship |
| Virginia Class Submarines |

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