CASE STUDY

Fuel Cell based Remote Camera Surveillance System

Background

- In the realm of remote unattended surveillance, the paramount challenge lies in efficiently powering a diverse array of surveillance cameras. This includes thermal, night vision, long-range, 360° video monitoring, movement capture cameras and more.

- The operational requirements of these cameras vary significantly, posing a complex challenge for traditional batteries face points of failure in extreme conditions, resulting in poor connectivity and loss of critical data transmission. Additionally, conventional power sources like Diesel Generators struggle with inefficiency and environmental concerns.

- These challenges are particularly pronounced in remote surveillance locations where harsh conditions, poor connectivity, and extreme weather jeopardize data transmission and the reliability of surveillance systems.

Solution

An in-house developed solution was conceived, featuring an insulated rugged case housing a Direct Methanol Fuel Cell, Methanol Cartridge (Fuel), Battery, Control Unit, and Solar Panels. This comprehensive setup, leveraging EFOY Fuel Cells, addresses the limitations of batteries and Diesel Generators, ensuring reliable, efficient, and sustainable power for diverse surveillance cameras.

Result

- Recognizing the vulnerabilities in existing surveillance infrastructure, a comprehensive, in-house developed solution was devised. The solution featured an insulated rugged case, incorporating a Direct Methanol Fuel Cell, Methanol Cartridge (Fuel), Battery, Control Unit, and solar panels.
- Unlike conventional batteries, prone to failures in extreme conditions leading to data loss and poor transmission, this rugged case housing EFOY Fuel Cells ensured a continuous power supply in the harshest environments.
- The drawbacks of traditional power sources, i.e. Diesel Gensets contribute to environmental pollution and are less efficient, especially in remote areas where fuel logistics pose challenges. EFOY Fuel Cells, on the other hand, offer a green energy alternative, emitting no harmful substances and providing efficient, consistent, and reliable power..

- The hybrid surveillance system, powered by EFOY Fuel Cells and solar panels, not only overcame the limitations of batteries and Diesel Generators but also ensured a constant power supply in remote locations. The in-house developed, rugged case with a methanol cartridge and fuel cell allowed for extended autonomy, mitigating the need for frequent manual interventions.
- Security personnel experienced a significant improvement in surveillance reliability, data integrity, and overall system efficiency. The in-house developed solution showcased the adaptability of EFOY Fuel Cells to extreme conditions, reinforcing their suitability for remote unattended surveillance and their ability to provide efficient, green energy in challenging environments.
- This transformative integration, developed in-house, highlighted the benefits of EFOY Fuel Cells over traditional batteries and Diesel Generators, showcasing their role in providing a reliable, efficient, and sustainable power solution for remote surveillance in challenging conditions

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