



Beyond military vehicles: Saft's Xcelion 6T® battery provides critical power in remote locations



INI Power's Trinity® ALLY® system leverages Saft's Li-ion battery for light-weight, reliable power.

Power in tough conditions

Meeting the power demands of sophisticated and complex electronic systems is a challenge. This is especially true in remote locations, where power sources are scarce and there is an added logistics burden involved in delivering it. Power solutions providers face the additional task of getting enough energy storage capacity into the lightest and smallest package possible. This is a struggle that INI Power Systems knows well.

INI Power Systems provides right-sized, man portable, fuel-agnostic power solutions for deployment to austere environments anywhere in the world.

When the company was developing its Trinity® ALLY® (Autonomous Lightweight Lithium-ion hYbrid) kit, it knew it needed a light-weight battery system that was both readily available and easily replaceable for its customers, while meeting the tough power and environmental demands of the remote areas where it would be deployed.

Used in applications such as military communication and ground control stations for UAVs, the Trinity® ALLY® is a flexible and autonomous 1 kWh hybrid micro grid system, comprising the sum of auto start/shutdown flex-fuel energy generation, solar harvesting, and energy storage

Case study



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modules. The system significantly reduces JP8 fuel consumption while allowing for extended silent watch operations and provides power anywhere, at any time, with any fuel when needed. Saft's light-weight, compact Xcelion 6T® Li-ion battery serves as the system's intelligent energy storage building block.

Making the Li-ion transition

When INI Power Systems developed the first generation of the ALLY® product, it used standard lead-acid battery technology, but with weight, intelligence, and storage capacity being three of the most important factors for expeditionary applications, the company set out to develop its next-generation system to be lighter, with a reduced footprint and increased storage capacity. The company was also very focused on standardizing the system's components to ensure that all parts could be obtained easily and that it didn't rely on proprietary or specialized equipment.

Saft's Xcelion 6T® battery meets these requirements and more. Not only does the battery reduce system size and weight with increased storage capacity, it is also a smart battery, communicating critical diagnostic information back to the ALLY® in real-time so that operators know exactly

how much power is coming in and how much is left. This is key for maximizing the system's power capabilities and providing the warfighter with crucial information with which to make real-time decisions.

By transitioning the ALLY's® battery technology from lead-acid to Li-ion, INI Power has been able to increase the system's storage capacity to provide longer, more reliable operation in a reduced package size. This will expand the range of applications where the ALLY® can provide real benefit, such as medical outposts where teams are performing surgery, sterilizing equipment, monitoring patients, and performing other power-hungry activities.

Improving efficiency, saving lives

The ALLY® is also being considered for non-military and dismounted applications such as disaster relief and water purification – all of which can improve and even save lives. The company is partnering with TerraGroup Corporation to power its tactical water purification system which is capable of performing reverse osmosis for up to 1440 gallons of water per day. The Trinity® ALLY® Hybrid system can be configured to require no fuel and run on ALLIES® solar power

alone, representing a 100% cost savings. The Xcelion 6T® battery stores the energy from the system's solar panels to remove the need for the generator and allow it to run silently, another advantage in remote environments.

Saft's Xcelion 6T® was initially designed as a light-weight, high-power replacement for lead-acid battery technology in military vehicles. Now, the same benefits seen in military vehicles – including lighter weight, increase capacity, longer life, and reduced total cost of ownership - have extended to hybrid gen sets such as the ALLY®. Delivering critical power in remote locations, combined with silent operations, and reduced logistics burden has changed the energy storage game, providing assurance that power is always available. In some situations, this could mean the difference between life and death.

INI Power intends to continue to improve and expand the ALLY® product offerings, always aiming for more power and less burden to the operator, making the evolution of battery technology a key component for realizing this goal. Saft will also continue to improve the Xcelion 6T®, supporting these demands and ensuring that power in remote locations is even more accessible and reliable.



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