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REQUEST FOR CAPABILITIES RELIABILITY OF SOLAR-PANEL HARDWARE

The client's goal is to improve the reliability of power systems and/or develop remote monitoring capabilities to enable worldwide operation of solar ships.

With the rising cost of energy and interest in protecting the environment, solar-powered ships are becoming both more practical and more desirable. Modern design makes it possible to run a vessel as large as 31 meters at speeds of up to 14 knots entirely on solar energy.¹ Currently, the standard design for most vessels involves solar panels covering the roof of the ship and storing the energy in lithium-ion batteries below-deck.

The client's vessel successfully operates locally in parts of Asia, but the client plans to expand distribution and operation. With expansion worldwide, reliability issues become a concern. The client identified two reliability weak points with the current power system: the battery charging system, and the DC/AC inverter system. Environmental conditions, such as humidity, are suspected of accelerating the failure, but no single cause is formally identified.

Worldwide distribution would require better performance reliability of the power systems and/or remote monitoring capability to provide the ability to diagnose any suspected problems from a distance.

The client seeks improvements of the power systems and/or the remote monitoring capability to enable their market expansion.

An ideal expert partner will have:

- Proven solutions for solar charging systems in a variety of environmental conditions.
- Alternative designs or packaging for the DC/AC inverter currently in use.
- Communication software that can remotely troubleshoot faulty power system performance.

Region of request: Asia

¹ Sarah Griffith, "The World's Largest Solar Powered Boat: The MS Túránor PlanetSolar," The Daily Mail, August 2013, online edition. <http://www.dailymail.co.uk/sciencetech/article-2405853/The-worlds-largest-SOLAR-boat-powered-809-panels-Eco-friendly-vessel-breaks-world-record-crossing-Atlantic-just-22-days--completely-silent.html>

For inquiries, contact Astha Vijay,
astha@techreserve.com