

SIREN MARINE

USING SOLIDWORKS TO LAUNCH INNOVATIVE WIRELESS MONITORING SYSTEM FOR BOATS



Siren Marine relied on SOLIDWORKS design and visualization tools to facilitate collaboration and shorten the development cycle for its MTC (Monitor, Track, and Control) System for boats. Siren's MTC is the most versatile and reliable device for monitoring important boat systems, tracking GPS position, establishing geo-fences, and remotely controlling lighting, air conditioning, security, and other systems—using just a smartphone and the Siren app.

Challenge:

Quickly develop and introduce a next-generation IOT device for monitoring the critical systems and positions of boats, whether they are docked or at sea.

Solution:

Use SOLIDWORKS Standard and SOLIDWORKS Premium design software to rapidly collaborate on development and ensure that the design is ready for manufacturing.

Results:

- Shortened development cycles
- Facilitated design collaboration
- Ensured design for manufacturability
- Supported marketing and sales through photorealistic renderings

Capt. Daniel Harper began using SOLIDWORKS® design software to facilitate and actively take part in the design process, while managing complex builds as a professional boat captain. During that career, Harper gained an appreciation for all of the critical maintenance issues on a boat, including those that can lead to bigger problems in the future if they continue undetected. Minor issues, like a dead battery or shore power failure, can lead to substantial damage, such as when the water in the bilge gets too high because the bilge pump or switch fails to operate. Harper realized that if boat owners had a way to monitor boat systems from afar, they could detect and address all of the little things on a boat that can cause larger problems later if they are not immediately addressed.

It was an idea that crystallized Harper's vision of the Connected Boat™ and inspired him to found Siren Marine, the Rhode Island-based technology company that develops products for affordable, real-time monitoring and protection of boating assets. Born at sea and based on Harper's deep boating experience, Siren Marine products include some of the most well-thought-out boat security systems on the market, allowing boat owners to use their smartphones, tablets, or computers to monitor and track their boat's battery status, bilge level, temperature, location, course, speed, security, and engine metrics. Customers can track boat movements and even switch accessories on or off straight from the Siren app via wireless cellular technology.

"As a captain, I managed a number of boat builds and wanted to be able to see the design as it progressed, so we modeled everything," Harper, now founder and CEO of Siren Marine, recounts. "Over the years doing that, I purchased and learned how to use SOLIDWORKS mechanical design software. Even though I'm not a trained engineer, I know a lot about boats, and I found SOLIDWORKS to be a great tool for visualization and collaboration. When I decided to found Siren Marine and develop boat monitoring systems, I not only used SOLIDWORKS myself but also insisted that everyone with whom we work—from design to engineering to manufacturing partners—had to use SOLIDWORKS."

COLLABORATION BETWEEN CAPTAIN, DESIGNER, AND ENGINEER

Siren Marine used SOLIDWORKS software to shorten the development cycle for its MTC (Monitor, Track, and Control) System by enabling Harper to collaborate with an industrial designer and mechanical engineer, both of whom used SOLIDWORKS Premium design software. The MTC is the most versatile and reliable system on the market, allowing customers to monitor important boat systems, track GPS position, establish geo-fences, and remotely control lighting, air conditioning, security, and other systems with a smartphone and the Siren app.

"SOLIDWORKS is critical to the way we handle development," Harper stresses. "Because I have the boating knowledge and my collaborators understand mechanical design, SOLIDWORKS serves as the conduit for bringing both types of expertise together to create the best products that we can. With SOLIDWORKS, I can review each design iteration, offer input, and make important design and manufacturing decisions in real time, which shortens the development process."

DESIGN FOR AESTHETICS AND MANUFACTURABILITY

For the Siren Marine MTC System, Harper worked with Mechanical Designer Luke Poirier of Celerity Embedded Design Services on the housing design for the unit, which contains two circuit boards. That initial concept was refined to improve design aesthetics and appearance by Darrick Wilson, a wakesurf board designer from Edmonton, Canada. Poirier then worked with the refined concept to ensure design for manufacturability, with Harper involved at nearly every step.



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— Capt. Daniel Harper, CEO

"I started designing the MTC system in SOLIDWORKS before working with Luke Poirier, a mechanical engineer who also uses SOLIDWORKS," Harper explains. "We then had Industrial Designer Darrick Wilson spruce up the design so that it felt and looked good, to differentiate ourselves from the competition. The overarching goal from beginning to end was to create an aesthetically pleasing device while ensuring design for manufacturability [DFM]. SOLIDWORKS helped us do just that."

PRIMING MARKET WITH SOLIDWORKS RENDERINGS

In addition to facilitating a collaborative design process, SOLIDWORKS helped Siren Marine prepare the market for its innovative MTC system through the use of SOLIDWORKS photorealistic rendered images, which let the company use imagery to market the product before it had been manufactured. "During our prelaunch period for the MTC, we made a final design tweak to improve manufacturability, which meant that we had to delay the launch for a few months," Harper notes.

"We used SOLIDWORKS to create product imagery that's difficult to distinguish from quality photography," Harper adds. "The SOLIDWORKS images helped us to keep the momentum going and contributed to our successful product launch."

Harper began using SOLIDWORKS design software while managing boat builds as a professional boat captain. When Harper's vision of the Connected Boat inspired him to found Siren Marine, the Rhode Island-based manufacturing company that develops products for affordable, real-time monitoring and protection of boating assets, he not only chose SOLIDWORKS as the company's product development platform, he insisted that all design, engineering, and manufacturing partners also use SOLIDWORKS.

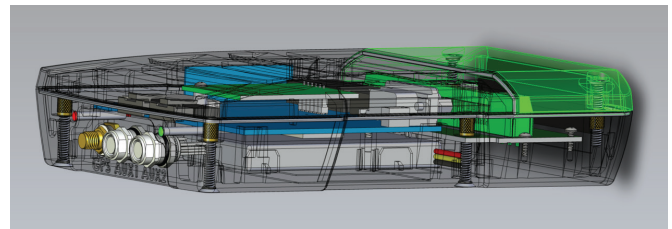
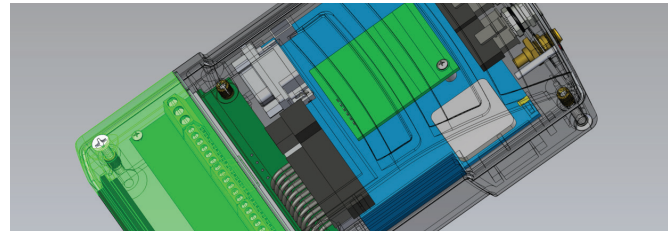
Siren Marine standardized on SOLIDWORKS Standard design software because Harper thinks it's a great tool for visualization and collaboration, allowing him to work directly with industrial design, engineering, and manufacturing partners. The company used the software to develop its MTC (Monitor, Track, and Control) System, which lets customers monitor important boat systems, track GPS position, establish geo-fences, and remotely control lighting, air conditioning, security, and other systems with a smartphone and the Siren app.

Focus on Siren Marine

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By choosing SOLIDWORKS, Siren Marine shortened its development cycles, facilitated design collaboration, ensured design for manufacturability, and supported marketing and sales through the use of photorealistic renderings.



With SOLIDWORKS Premium design and analysis software, the Siren Marine design team improved the manufacturability of its Monitoring and Tracking System components and primed the market ahead of system introduction and availability through the use of high-quality photorealistic renderings.

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