

✦ Particle

# SUNVESSEL CASE STUDY



# EXECUTIVE SUMMARY

## Problem

SunVessel began developing a product on an IoT platform that failed to meet their hardware and connectivity requirements, especially at scale.

## Solution

SunVessel turned to Particle, which provided the hardware, connectivity, and software that provides a centralized place to manage devices and track key metrics. This allowed SunVessel's products to talk to each other, and made it easy for the company to track assets in real time.

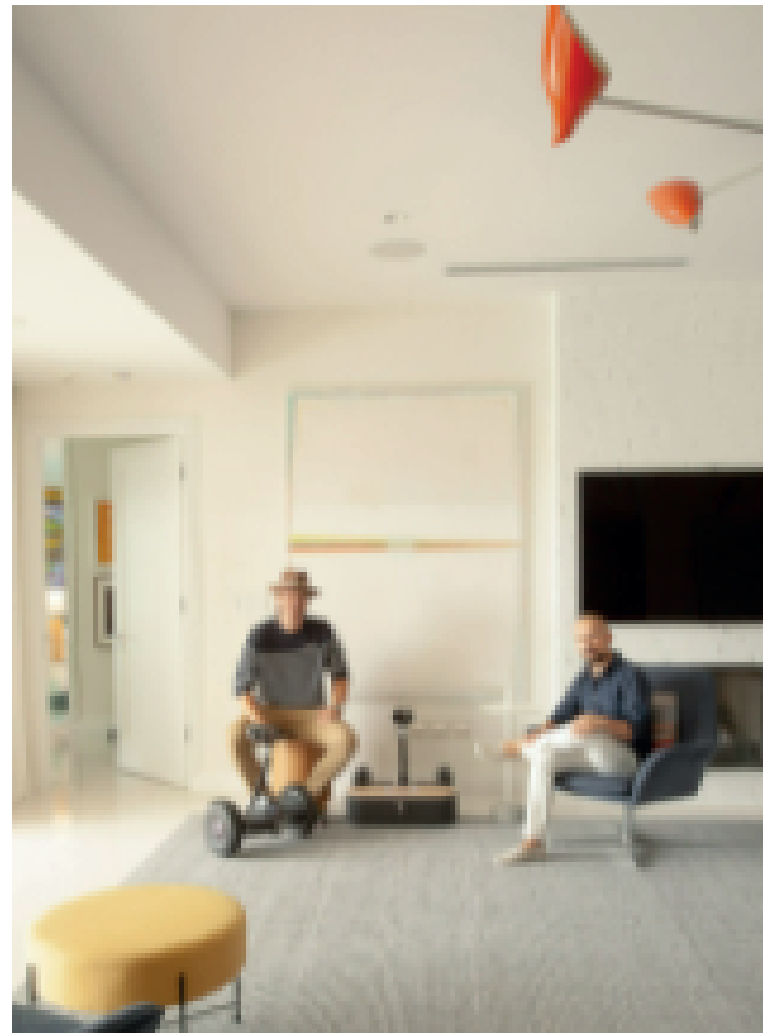
## Results

SunVessel used Particle to create a working prototype of their product in less than 10 hours. This helped them get to market faster and with a product that met their customers' needs.

## THE COMPANY: SUNVESSEL

SunVessel builds smart furniture leveraging the principles of interior and product design to seamlessly charge and intuitively connect compatible light electric vehicles inside private interior spaces.

Harnessing the power of the Particle IoT platform, SunVessel offers a suite of premium products, consisting of a personal mobility vehicle, a smart charging dock and a comprehensive data network to bring personal mobility into people's private spaces.



"Particle is at the backbone of everything we do. We built upon its foundations and we are very happy with it"



**SunVessel CEO and Founder**  
**Sebastian Gomez Puerto**

# 01. CHALLENGE: SCALING A PERSONAL MICROMOBILITY STARTUP

IoT is an integral part of SunVessel's business model. The company's goal is to build a network that allows their vehicles and docks to communicate with each other and track assets in real time.

When SunVessel launched their first product, the team was prototyping on an IoT platform that failed to meet the product's requirements. Though the platform was affordable, the experience was unreliable.

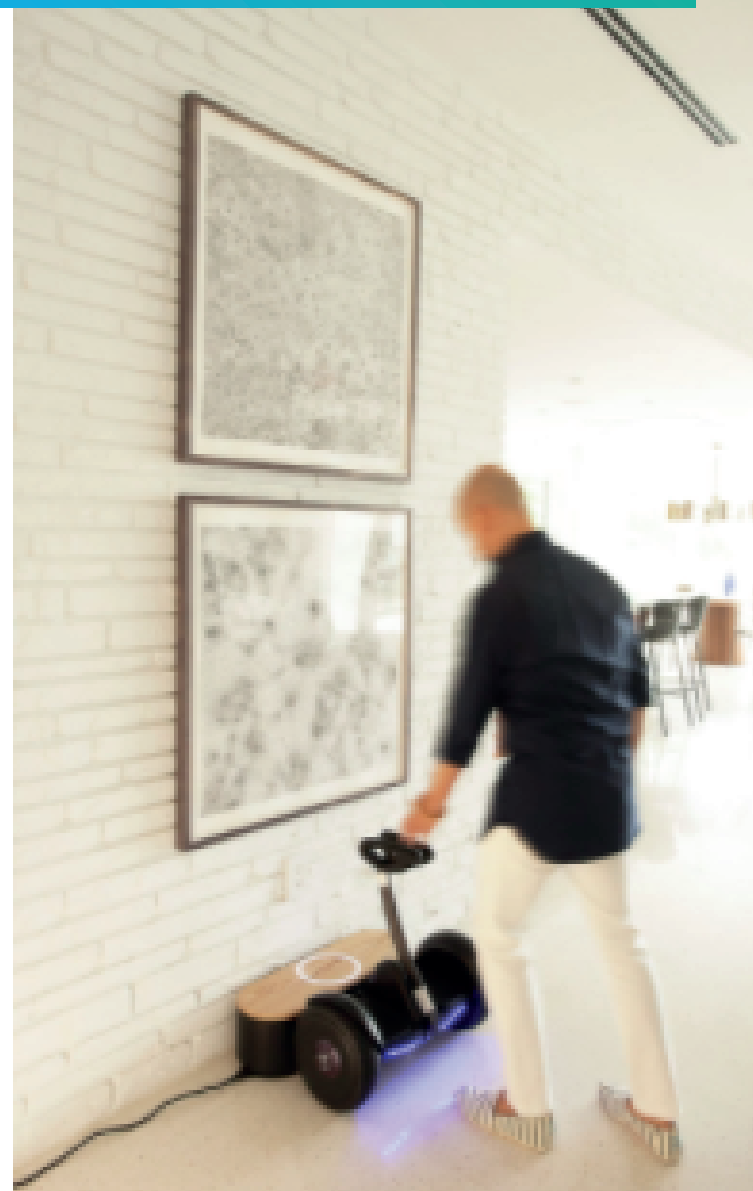
This became apparent when SunVessel tried to scale using the platform, and realized that scaling an IoT product required access to several different feature sets, something that does not necessarily apply at the prototyping stage. As a result, SunVessel would need to invest more money and man hours than they wanted to just to maintain their first product and go to market.

It wasn't just the product development difficulties that weighed on the team. Beyond the hardware requirements, SunVessel needs a robust network that facilitates connectivity that can reliably work in indoor spaces.

SunVessel needed its customers to have the ability to access and control their products wirelessly via the app. Users also needed to be able to enable features such as charge control, vehicle tracking, and user training. To achieve all this, SunVessel realized they needed an IoT partner that could help them scale without losing the features they desired.

"SunVessel's mission is to change the way we move by making personal mobility a part of your home."

**SunVessel CEO and Founder**  
**Sebastian Gomez Puerto**



## 02. SOLUTION: PARTICLE PROVIDES A PATH TO SCALE

SunVessel's primary product is a modular smart dock where compatible light electric vehicles can be stored and charged. The core market SunVessel is targeting is high-end residential buildings that want to offer differentiated mobility services to their residents.

"We strongly believe there will be increased demand for truly personal transportation in the near future as people move away from public transportation and shared rides," Gomez Puerto said. "Our integrated mobility solution allows users to come up to our smart docks, activate the vehicle and enjoy the freedom to move without the need of a car."

Such a project requires a complete solution or platform, consisting of IoT hardware, connectivity, and software that provides a centralized place to manage devices and track key metrics. This would allow SunVessel to track their vehicles in real time, but also enable the communication between the vehicles and their smart docks.

The design aspects are also critical to SunVessel's brand. Any IoT solution would need to seamlessly integrate IoT capabilities into their sleek, modern product designed by the world-renowned firm, Pininfarina

That's where Gomez Puerto and his team turned to Particle.



Using Particle's Argon, Boron, and asset tracker, SunVessel was able to build out the first iterations of the vehicles and smart docks. Particle's complete IoT solution gave the team enough flexibility to build the product they wanted without requiring them to build all the hardware, connectivity, and software themselves.

## 03. RESULTS: PARTICLE SIMPLIFIES IOT AND ACCELERATES TIME TO MARKET FOR SUNVESSEL

Particle helped SunVessel solve tough technical challenges and simplify its go-to-market strategy. According to Gomez Puerto, by transitioning to Particle, SunVessel could build a working prototype of its product in less than 10 hours.

The extensive developer resources available, such as pre-built firmware libraries, community forums, and extensive documentation, have allowed SunVessel to speed up the prototyping process considerably.

The benefits of building on Particle - for the company and its customers - are evident in the product that SunVessel is bringing to market: Each smart dock has "Dock Detect" technology built into it, developed by the SunVessel team. SunVessel can identify when a vehicle enters or leaves the dock, as well as which vehicle it is. The firmware and hardware through the Particle microcontroller gives SunVessel complete control of charge tracking, enabling them to monitor the vehicle's charging and usage patterns.

The smart docks and vehicles can also talk to each other, providing a better user experience. As riders approach the dock, the dock lights up, showing which spots are available for docking.

IoT security is also front and center for SunVessel. If someone who doesn't have the SunVessel app tries to take a vehicle, the dock lights up, the product shuts down, and according to Gomez Puerto, there's a "complete audiovisual meltdown."

From custom hardware requirements to indoor connectivity to cloud integration, Particle's fully integrated platform provided SunVessel with the opportunity to customize and play into their network seamlessly, something they believe would not have been possible with an off the shelf solution.

"Particle is at the backbone of everything we do. We built upon its foundations and we are very happy with it," Gomez Puerto said.

The internet connectivity will allow SunVessel to modify and update their network remotely via over the air software updates, and device vitals and performance data straight to a customer application or dashboard.

SunVessel has saved considerable time, money and resources on deploying its IoT product by building on top of the Particle ecosystem. The team has been able to spend more time focusing on its core product design and customer experience.



# ABOUT PARTICLE

We love helping game-changing micromobility manufacturers and operators build better connected vehicles, get to market faster, and win in competitive markets.

Speak to a micromobility expert today.

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