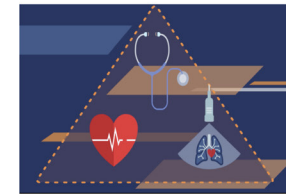



ELECTRONIC HUB



Project THOR – 2019*



 EchoNous Vein





* Works in progress

EchoNous AI Station

For some the stand or dock that holds a medical device is just a functional item designed to store or place a product or to move it throughout a hospital. But at EchoNous, we believe it can be much more, which is why we have developed the EchoNous AI Station.

When we set out to develop the AI station, our goal was to reinvent the docking system so that it would be different from anything else on the market and serve as a hosting station for our current products, Uscan and EchoNous Vein, as well as future tools all aimed at raising convenience and clinical performance for nurses while lowering costs for health systems.

We sought to bring a “sense of art” to the otherwise mundane approach to medical device design, and we knew it would be important to work with someone totally out of the proverbial box yet with perspective. Someone that could bring fresh eyes to the design process. Thus, we commissioned Dave Schenone, Nike’s former Global Footwear Creative Director and Product Innovation Director. Dave has had a distinguished design career beginning with imagining the future of home computing at the Xerox Advanced Research Center, the Atari Corporation and Hewlett Packard in Silicon Valley during the 1980s. He was later recruited to Nike and went on to become the most senior design director at Nike, for over two decades. Dave oversaw the build out of the “Nike Innovation Process” and lead the company’s creative approach to multiple Olympic games.

With a blank sheet and a Nike designer, we embarked on the first step of the design process: listening. We then met with clinicians and biomedical leaders from one of our nation’s top health systems; they shared insights on clinical use and workflow as well as their thoughts on materials, cleaning and infection control.

From baseline, we reimagined every component of the nursing dock from the colors to materials to “in hospital assembly” to create the AI Station. The result: a uniquely expandable platform that stands out in black and silver with accents of orange.



Three key elements lay the foundation for the design and functionality of the AI Station

Durability and Cleanability

The AI Station was designed with the goal of optimizing durability and cleanability while maintaining a low weight for ease of maneuvering. Features that help to achieve this goal are the center post and materials and finishes selected.

The center post, a single aluminum extrusion, attaches to the base in a recessed pocket to make the connection as mechanically solid as possible. Given the increasingly harsh cleaning chemicals used within a hospital, the AI Station features chemically-resistant anodized aluminum, Tritan™ plastic, specifically designed for durability and offering a much higher level of chemical resistance than previous generation polymers, and stainless steel because of its extraordinary strength and excellent chemical resistance. Additionally, the black paint used is a high-performance paint with better chemical resistance and durability than the standard powder coat so common in medical devices.

Intuitive Design

From assembly to adapting for the future, the AI Station has been designed to be simple. For instance, components such as the bins slide on the spine and activation touch points are indicated by orange visual cues. Drawing from the world of cycling, we designed in locking collars rather than knobs. This not only provides adjustability but also makes the stand easy to assemble. Further, the modular design provides the potential for adding additional components as they are developed in the future.

Modern and Convenient

At EchoNous, we recognize that time spent with patients is valuable. Thus, we wanted to bring modern design elements into the AI Station with the aim to raise convenience for nurses so that more time can be spent with patients and less on adjusting and navigating the device. We lowered the height of the base so that it can fit underneath a hospital bed enabling the entire cart to be closer to the patient. The narrower lateral design provides easy access to probes and storage so that the items used are accessible within an arm's reach.

Further, we introduced innovative hubless casters to help ensure good maneuverability crossing thresholds and quiet rolling, so that patients are not awoken up by squeaky wheels and designed plastic storage bins, rather than using wire, so that they are easy to clean.

Most importantly a “flexible” electronic hub has been integrated into the AI Station that serves as the central connection between all the devices in the system. The electronic hub enables switching of the probes without having to unplug cables and provide central charging so that just one AC cord needs to be plugged into the wall for charging. Moreover, the electronic hub aims to extend battery life through internal processing and motion sensors to manage power usage.

Specifications And Key Applications

Weight	<ul style="list-style-type: none">• 34 lbs (excluding hub, tablet and probes)
Dimensions	<ul style="list-style-type: none">• 27.125" L x 17.75" W x 53.25" H
Casters	<ul style="list-style-type: none">• 3.5" hubless casters
Storage	<ul style="list-style-type: none">• Designated storage for ultrasound gel and cleaning agents• Covered compartment for supplies
Tablet Protection	<ul style="list-style-type: none">• Tablet is held securely on all sides through two hidden screws
Charging Capabilities	<ul style="list-style-type: none">• One AC cord needed to charge the system including the tablet and Uscan probe
Optional Features	<ul style="list-style-type: none">• Storage bins are an optional feature

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