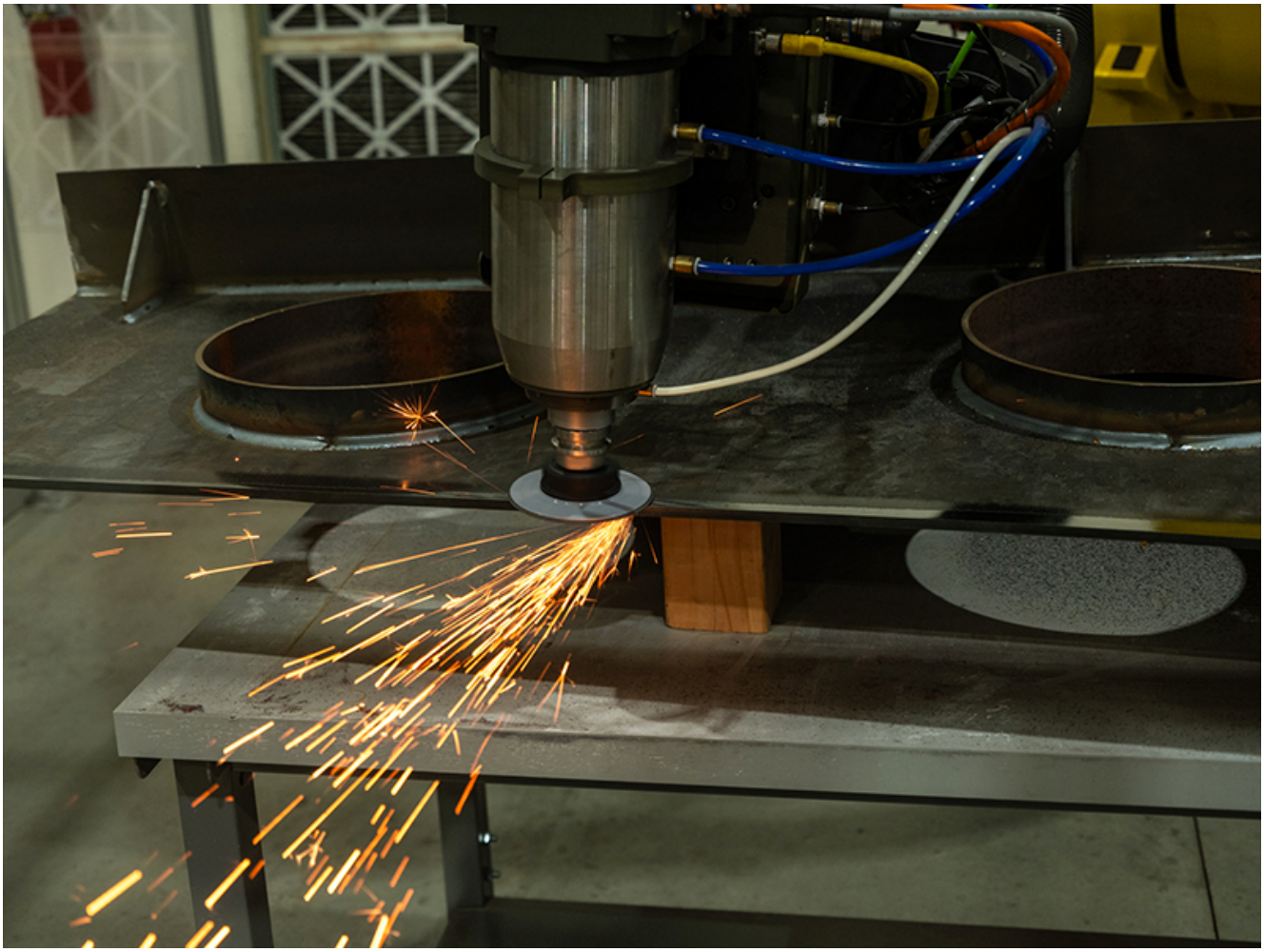
HII Moves Further into Physical AI for Shipbuilding



A GrayMatter Robotics technology performs autonomous grinding to an HII foundation project that used internal research and development funds.

By Brett Davis

Shipbuilding giant HII (Booth 923) has added another artificial intelligence partner to its shipbuilding program, taking another step toward adding “physical AI” to the process of constructing Navy ships.

In early April, the company announced it signed a memorandum of understanding with Carson, California-based GrayMatter Robotics to explore integrating GMR’s physical AI into shipbuilding operations, including for

surface preparation, coating and inspection.

The companies will identify and potentially pursue future opportunities in four areas that include autonomous shipbuilding capability development; integration of GMR technologies with other shipbuilding technology initiatives; workforce training to extend automation; and acceleration and scaling of unmanned system production.

“Our shipbuilding throughput was up 14% in 2025 and we are looking for an additional 15% increase in 2026,” said Eric Chewning, HII’s executive vice president of maritime systems and corporate strategy. “By working with new partners like GMR we can further augment our workforce and speed up U.S. Navy shipbuilding production.”

This follows on to a similar announcement from February, when HII signed an MOU with Ohio-based Path Robotics to incorporate physical AI for welding.

HII said much of the work that would be pursued by these companies currently is “hands-on and highly skilled,” but AI-driven technologies “offer promising opportunities to support these critical processes by reducing repetitive work and improving consistency to help accelerate delivery timelines and meet the U.S. Navy’s growing demand.”

Chewning said the introduction of physical AI is just one step of a series of actions HII is taking to improve shipbuilding, from increasing its supplier base to hiring and retaining new workers to making capital investments.

“And finally, what brings us here today, we are investing in new industry 4.0 technologies like digital engineering, additive manufacturing, enterprise AI and physical AI to drive overall shipyard efficiency,” he told reporters in a call about the announcement. “By working with new physical AI partners like GrayMatter Robotics and integrating them into our high-yield production robotics initiative, or HYPR, we can

further augment the AI workforce and speed up the shipbuilding process by bringing automation into more areas of production."

So far, shipyard automation remains limited to repeatable activities, where one robot might do a single task 100,000 times, but "there's a broader set of industrial use cases where we need a single robot to do a hundred thousand tasks just once," Chewning said. "And that's where physical AI is a game changer and our partnership with GrayMatter Robotics is so important."

Ariyan Kabir, GrayMatter Robotics' CEO and cofounder, said his company's technology will help HII do the work it needs at a time when there aren't enough skilled workers to do it.

"These are physically brutal tasks," he told reporters on the press call. "These require incredible precision and we don't have enough people, skilled people anymore in the U.S. to do these jobs, who are capable of doing these jobs. And that is the problem we solve at GrayMatter Robotics. We build physical AI systems that learn how to perform these skilled manufacturing tasks autonomously — no pre-programmed robots — robots that understand complex material physics and environmental physics, the physics of force friction, contact tool wearing out, temperature and humidity affecting the material behavior, so on and so forth."

HII will discuss its physical AI efforts at 1:30 p.m. today at its booth, along with the CEOs of its new physical AI partners.