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INTERNATIONAL MANUFACTURING TECHNOLOGY SHOW

## NEWS RELEASE

# AMT's Emerging Technology Center at IMTS 2024 Highlights Hybrid Solutions, Automation, Workforce Engagement, and Model-Based Engineering

*The Strati, the world's first 3D printed car, returns for its 10-year anniversary.*

McLean, Va. (August 22, 2024) — When manufacturing leaders, job shop owners, engineers, and designers want to see what their operations might look like in the near future, one of their must-visit destinations is AMT's Emerging Technology Center (ETC) at [IMTS – The International Manufacturing Technology Show](#). IMTS 2024 runs Sept. 9-14 at Chicago's McCormick Place.

“The ETC showcases technology in the context of addressing today's most pressing manufacturing issues, including automation, process integration, reshoring, a surge of aerospace and defense investment, and raising productivity per worker,” says Bonnie Gurney, vice president of strategic content and partnerships at AMT – The Association For Manufacturing Technology, which owns and produces IMTS.

Highlights of the ETC at IMTS 2024 include:

- An innovative hybrid production cell that demonstrates new solutions for tooling, casting and forging replacements, and wind turbine gear tool repair.
- Exhibits, a video documentary, and conversations essential for strengthening America's defense industrial base.
- A humanoid robot that was named a finalist in Fast Company's 2024 World Changing Ideas Awards.
- The return of the Strati, the world's first 3D printed car, for its 10th anniversary.

“To further explore how emerging technology could transform their operations, visitors can also connect with experts representing the organizations and companies that are part of the ETC,” says Gurney.

## Converging Technologies

The ETC will feature a convergent manufacturing platform developed by the Manufacturing Demonstration Facility (MDF) at Oak Ridge National Laboratory (ORNL). An MDF team that includes the efforts of more than 40 people have been working on this project since its conception in April. The manufacturing platform integrates:

- Two wire-arc additive manufacturing systems using arc directed energy deposition, a metal AM technology from Lincoln Electric, and software from Open Mind ([IMTS booth #133351](#)).
- Two robots from Yaskawa America ([IMTS booth #236601](#)).
- A machining center from Okuma ([IMTS booth #338500](#)), cutting tools supplied by Kennametal ([IMTS booth #432324](#)) and Zoller ([IMTS booth #432018](#)), and workholding from 5th Axis ([IMTS booth #431355](#)).
- A Fastems ([IMTS booth #338966](#)) pallet tower that enables the high-speed transfer of hot work, preserves registration, enables unattended operation, and provides simultaneous production of multiple high-mix components.
- An Ajax Tocco induction heating station for pre-heating and maintaining interpass temperature.
- A 3D laser scanning metrology station from Zeiss ([IMTS booth #134302](#)).

“Our convergent manufacturing platform integrates discrete technologies in a way that makes them adaptable, modular, and easily accessible to produce functional parts,” says Thomas Feldhausen, the project leader and an ORNL R&D staff member. “We want to give manufacturers more tools for their toolbox. IMTS visitors can engage with us, and we can help them find the right technologies for their application.”

The convergent platform will provide three demonstrations:

- A tooling-oriented demonstration where ORNL will produce a numbered challenge coin for each day of the show by producing a new mold for each day of IMTS.
- A casting and forging demonstration based on the Platypus, as defined in the NAVSEA qualification publication T9074-BD-GIB-010\_0300, which serves as the first article casting the U.S. Navy uses to qualify a new foundry. This will demonstrate the addition of features to a bar stock using nickel-aluminum-bronze filler wire.
- A clean energy-oriented demonstration will simulate repairing the tooth on a wind turbine gear.



## **AI-Powered General Purpose Humanoid Robot**

Apollo, unveiled by Apptронik in August 2023, is the first commercial humanoid robot designed for user-friendly operation, mass manufacturability, performance, and safety. Powered by AI, Apollo addresses labor challenges by preventing injuries, improving productivity, and allowing humans to focus on higher-value tasks. Its humanoid form allows easy deployment in existing spaces. Key innovations include Apptронik's patented actuator technology. In the ETC, you'll discover more about Apollo's advances and future applications.

## **Defense-Based Conversations**

BlueForge Alliance (BFA) will be a featured exhibit within the ETC, where it will highlight collaborative efforts with the U.S. Navy and industry leaders such as Newport News Shipbuilding, Electric Boat, and Austal. The exhibit will feature engaging digital content, interviews, and interactive experiences that underscore the collective advancements in naval capabilities.

Visitors can expect to immerse themselves in innovative technologies and gain insights into how BFA and partners are pushing the boundaries of submarine construction. The exhibit will also showcase the importance of partnerships in sustaining and enhancing the submarine industrial base. By bringing together cutting-edge developments and collaborative efforts, BFA aims to inspire and engage attendees, demonstrating the future of naval manufacturing and the power of partnership in achieving the Navy's mission.

## **Film on Creating a Model-Based Engineering Environment**

The ETC will also showcase an exclusive video documentary featuring OEMs, suppliers, and SMEs creating a model-based engineering environment (MBEE). In tandem with the film, live presentations, Q&A sessions, and interviews will take place to be used for future documentaries on MBEEs. This project, produced by William Sobel, co-founder of Metalogi and renowned for his role as the chief architect of the MTConnect standard, an international model-based semantic standard for manufacturing equipment, promises to be a highlight.

"MBEE provides a single source of truth and bi-directional flow of information, resolving the current tension and disconnect between defense contractors, OEMs, and contract manufacturers," says Sobel. "We need open, standardized information from the top suppliers that is agnostic to the software platform and within the financial means of smaller participating shops."

## **ETC Throwback: The Strati**

There are many famous cars, but there is only one famous 3D printed car: the Strati. Printed and assembled in under six days in the AMT ETC at IMTS 2014, the Strati returns for its 10th anniversary and will be located at the main entrance to McCormick Place.

As the world's first 3D printed car, the Strati and IMTS 2014 made broadcast news, including appearing on the "Today" show, by showcasing its production. The technology breakthroughs



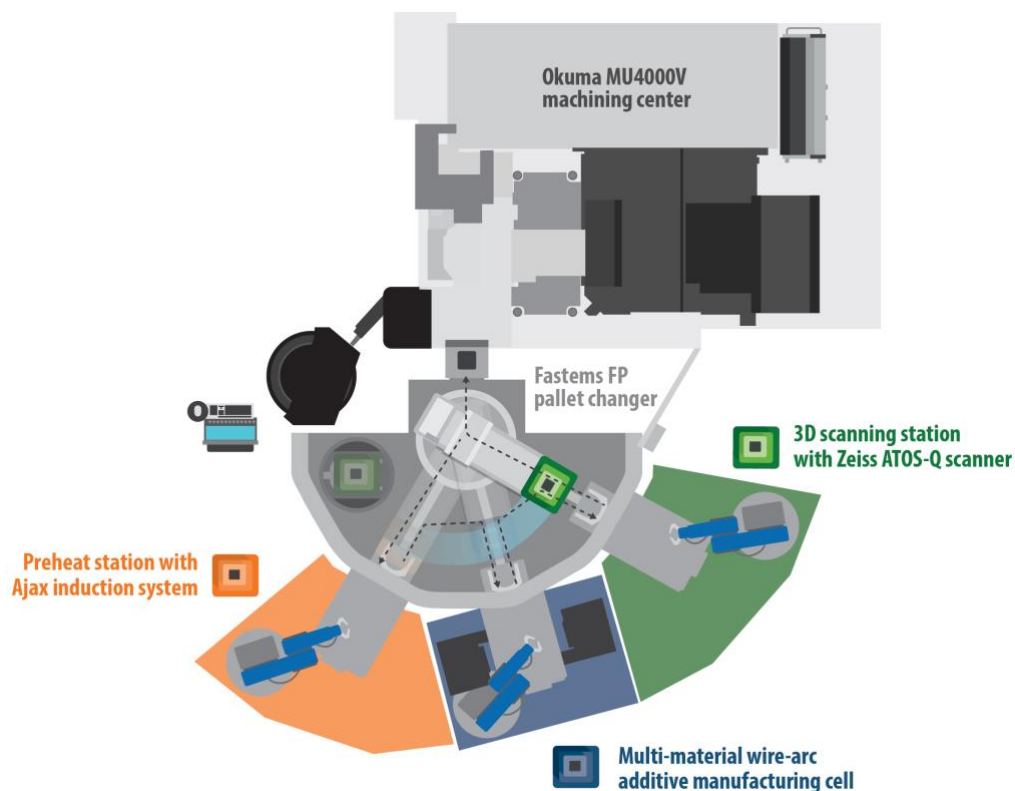
that occurred live on the show floor – crazy-high material deposition rates, wide-area additive manufacturing, and achieving structural integrity – became the stuff of legend.

The ETC is located at the entrance to the North Building of McCormick Place (IMTS booths [#236700](#) and [#236905](#)). To explore more emerging and ready-to-implement technologies, [register](#) and book your hotel through [Global Housing Solutions – powered by AMT](#).

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## Image Information



**JPG:** ORNL at ETC

**Caption:** What does the next generation of technology for solutions for tooling, casting and forging replacements, and wind turbine gear tooth repair look like? Find the solutions in AMT's Emerging Technology Center at IMTS 2024, which features a convergent manufacturing platform developed by the Manufacturing Demonstration Facility at [Oak Ridge National Laboratory](#).

### About IMTS – The International Manufacturing Technology Show

IMTS – The International Manufacturing Technology Show is where the creators, builders, sellers, and drivers of manufacturing technology come to connect and be inspired. Attendees discover advanced manufacturing solutions that include innovations in CNC machining, automation, robotics, additive, software, inspection, and transformative digital technologies that drive our future forward. Powered by AMT – The Association For Manufacturing Technology, IMTS is the largest manufacturing technology show and marketplace in the Western Hemisphere. With more than 1.2 million square feet of exhibit space, the show attracts visitors from more than 110 countries. IMTS 2022 had 86,307 registrants, featured 1,816 exhibiting companies, saw over 7,600 people attend educational events, and included a Student Summit that introduced the next generation to manufacturing. Be the change at IMTS 2024, Sept. 9-14, 2024. Inspiring the Extraordinary. [IMTS.com](#).



## **About AMT – The Association For Manufacturing Technology**

AMT – The Association For Manufacturing Technology represents U.S.-based providers of manufacturing technology – the advanced machinery, devices, and digital equipment that U.S. manufacturing relies on to be productive, innovative, and competitive. Located in McLean, Virginia, near the nation’s capital, AMT acts as the industry’s voice to speed the pace of innovation, increase global competitiveness, and develop manufacturing’s advanced workforce of tomorrow. With extensive expertise in industry data and intelligence, as well as a full complement of international business operations, AMT offers its members an unparalleled level of support. AMT also produces IMTS – The International Manufacturing Technology Show, the premier manufacturing technology event in North America. [AMTonline.org](http://AMTonline.org).

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### **IMTS 2024**

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