

THE

ROBOTREPORT

EXPLORING THE BUSINESS AND APPLICATIONS OF ROBOTICS

2021

ROBOTICS BUSINESS REVIEW

RBR

50

INNOVATION
AWARDS

Produced by
Robotics Business Review





Welcome to the 2021 RBR50 Robotics Innovation Awards

What does a childlike, humanoid robot, a research center, a 5G development platform, and taxis, tractors and interplanetary explorers have in common? Well, if you are reading this paragraph, you can probably guess “robotics,” and you would not be wrong.

But the similarities do not end there, and they are more pointed and correlated. All the examples are representative of winners of the 2021 *RBR50 Robotics Innovation Awards* (RBR50).

For nearly a decade, *Robotics Business Review* has produced the RBR50, which recognizes and celebrates forward thinking companies from across the globe and the original, impactful solutions they have created. Widely recognized throughout the world as a leading indicator of robotics innovation leadership, the *RBR50* is also a critical indicator of robotics sector growth.

For the robotics sector, the role, importance, and impact of innovation has never been greater. Moreover, it is the confluence of multiple, diverse innovation determinants - technological, business, and market – that act to accelerate robotics sector growth overall.

The *RBR50* reflects that diversity of innovation, and celebrates robotics innovation in all its forms including:

- **Business and Management Innovation** - Business and management initiatives or practices that enhance a company’s commercial standing, fosters robotics sector growth or improves society.
- **Technology, Products and Services Innovation** – New commercial solutions that have the potential to positively impact markets or the whole robotics sector.
- **Application and Market Innovation** – Industry specific, newly developed applications that deliver value, provide entry to new markets, or improve performance over existing approaches (i.e. improve productivity, increase quality, reduce cost, etc.).

The editors in WTWH Media’s Robotics Group enjoyed the challenge of evaluating and selecting the 2021 RBR50 awards winners, and learned much during the process. We hope you share that enthusiasm, and the 2021 *RBR50 Robotics Innovation Awards* also acts to increase your understanding of the global robotics sector. In that small way, the RBR50 will have done its part to drive the robotics sector forward. **RR**



Motus Labs Gearless Drives Create High Torque, Performance

Organization Name:	Motus Labs
Country:	U.S.
Website:	https://motus-labs.com
Year Founded:	2018
Number of Employees:	11-50
Innovation Class:	Technology, Services & Research Innovation
Innovation Subclass:	Product Introduction



Description:

In September 2020, Dallas-based **Motus Labs** commercially released its ML1000 series of precision gear drives. The gear drives feature Motus' proprietary M-DRIVE design that use low-friction mating blocks instead of traditional gear teeth.

The cam-driven blocks engage over 80% of the output ring surface area at all times, distributing load stresses over a large surface area. This enables the four models in the lineup to provide more torque for given weight and lower weight for given torque, creating rigidity and stable control over the robot.

Analysis:

Motus Labs' series of geared solutions provides value to new robotic and motion control applications due to the unique gear architecture, compact footprint, high torque density and performance. The collaborative robot market, for example, is demanding new designs that require smaller, lighter joints that rely on new enabling technologies.

The increased torque density from the ML1000 series can lead to a reduction of the

size and weight of the gear drive at every joint of a robot. This can reduce the inertia of arm links, which potentially allows robot arm manufacturers to reduce the size of the motors used, significantly reduce overall production costs and create wider adoption of their systems. **RR** — Steve Crowe

