



Permanent magnets – the energy of tomorrow

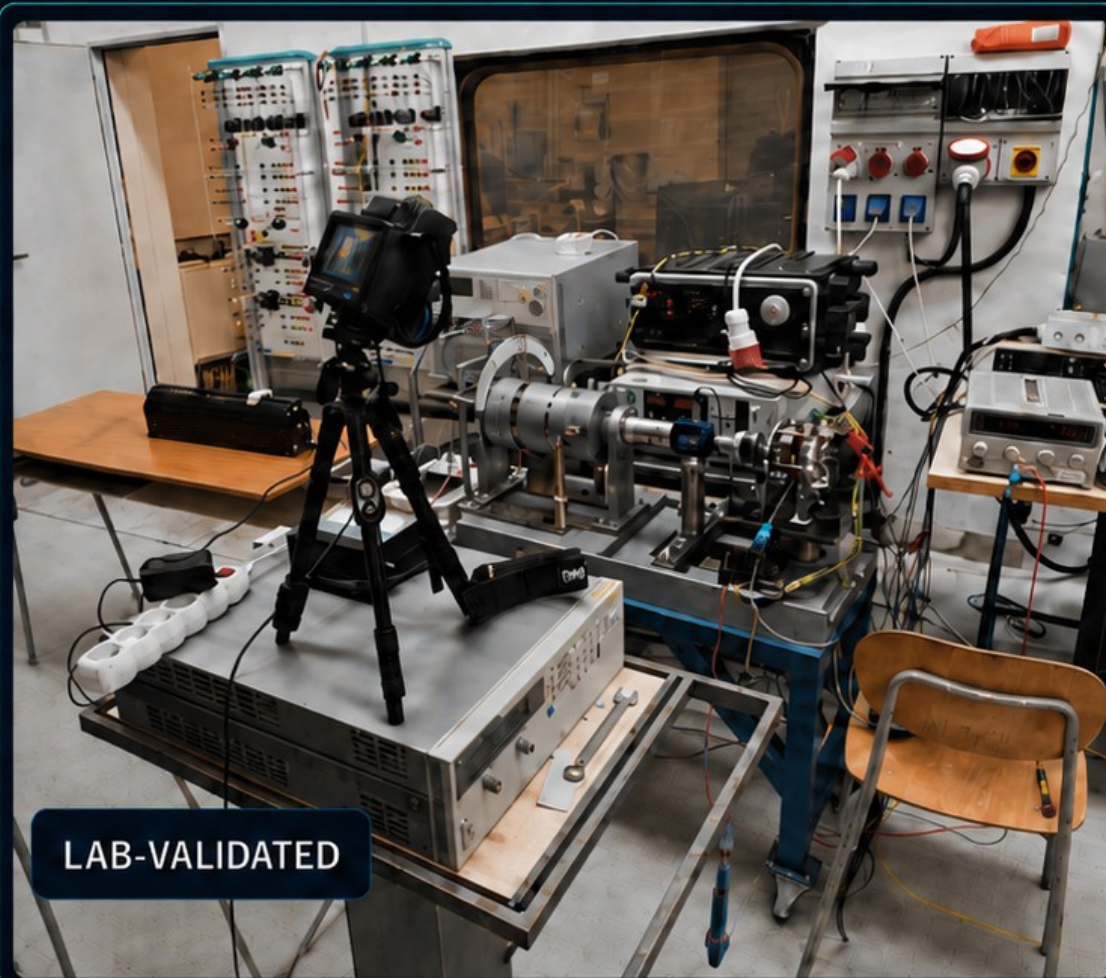
# TorqueFuture Motor Architecture

High-efficiency electromagnetic drive concept for space and other power- and cooling-limited applications

## PARTNER PROFILE

Presentation profile for technology and research partners

Space / Industrial Applications



LAB-VALIDATED

## TECHNOLOGY

Patent-protected electromagnetic motor architecture with permanent magnets in both the stator and the rotor. Windings are used mainly for magnetic flux commutation and control, while torque is generated predominantly by permanent magnetic field interaction.

## SPACE RELEVANCE

Relevant for energy-limited and thermally constrained space systems. Potential value: higher energy efficiency, lower heat generation, reduced load on power electronics and battery systems, longer component lifetime and improved overall system reliability.

## VALIDATION & READINESS

Functional laboratory prototype at approximately TRL / IRL 4. Independent technical work, measurements and validation activities with SAV, STU and UNIZA. Measured efficiency approximately 89–94%, including power electronics, in the 100–150 W range.

## CONSORTIUM VALUE

TorqueFuture can bring a patented motor architecture, a functional laboratory prototype, existing measurement data, prototype development experience, cooperation framework with UNIZA and STU, and a roadmap for further optimisation, integration and validation for space-relevant use cases.

## WHAT WE ARE LOOKING FOR

TorqueFuture is looking for industrial or research-led partners interested in space mechanisms, actuators, robotic subsystems, positioning systems and other thermally constrained electromechanical equipment. We are interested in joining ESA-related or other space-focused consortia for optimisation, integration, testing and demonstration.

## CONTACT

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Note: Technology is currently at laboratory prototype stage; proposed role: partner for further optimisation, integration and validation.