ROBOTICS

FORMIC system uses a swarm of robots to transport heavy loads

By Ben Coxworth
August 23, 2023

Each FORMIC robotic module can lift up to 2.5 tons (2.3 tonnes) **Markus Breig, KIT**

VIEW GALLERY - 4 IMAGES

While forklifts do work well for lifting and moving heavy loads indoors, they're bulky (in close quarters), expensive, and can't lift loads over a certain footprint size. That's where the FORMIC modular robotic transportation system is designed to come in.

Multi-Function LIPO Balance

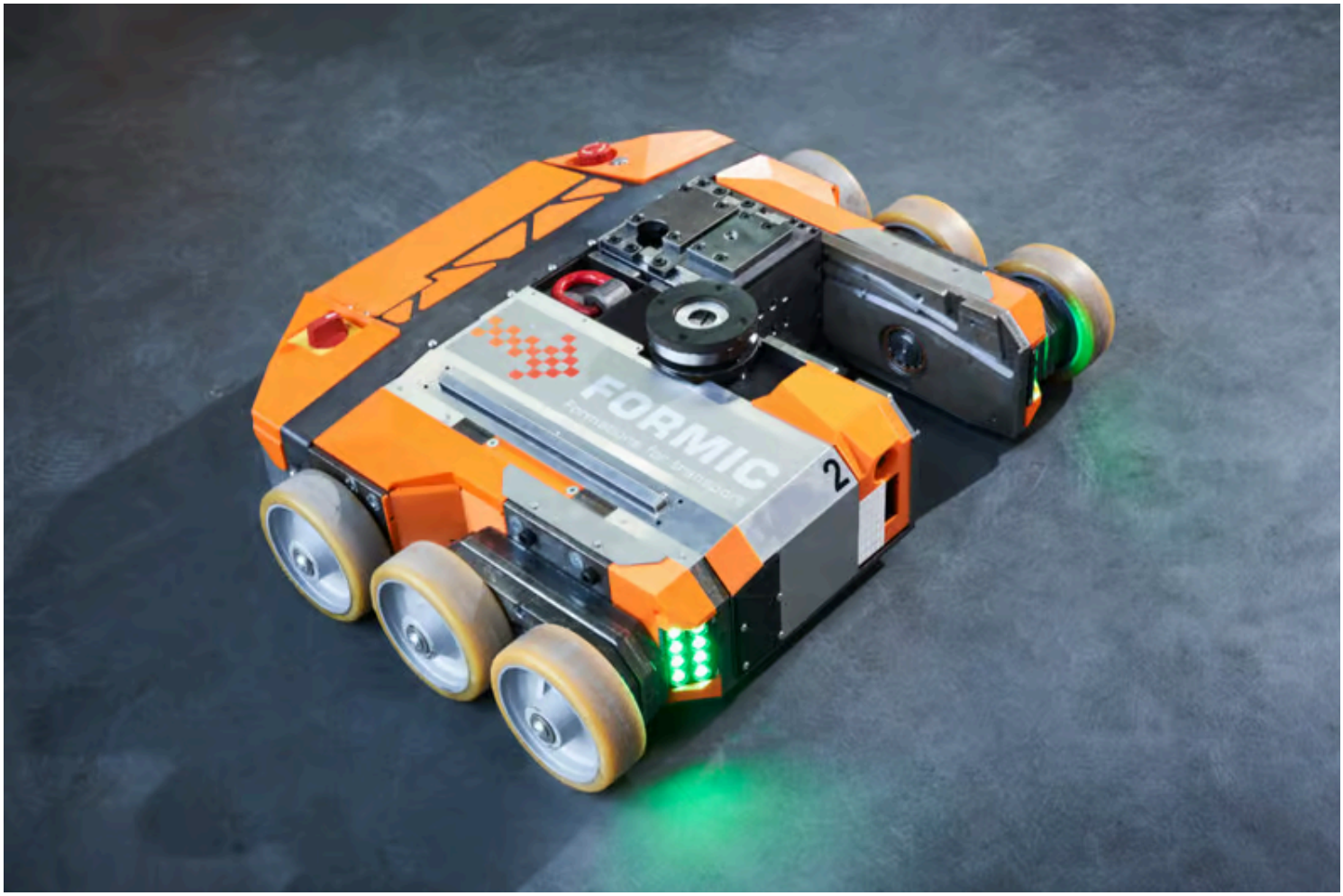
The technology is being developed by German startup FORMIC Transportsysteme, which is affiliated with the Karlsruhe Institute of Technology. It incorporates multiple six-wheeled robotic transport modules, each one of which is equipped with cameras, a radio communications chip, and a jack that is capable of lifting up to 2.5 tons (2.3 tonnes).

MORE STORIES

ChatGPT is as (in)accurate at diagnosis as 'Dr Google'

Amphibious SeaDart: High-speed drone can hover, fly and dive

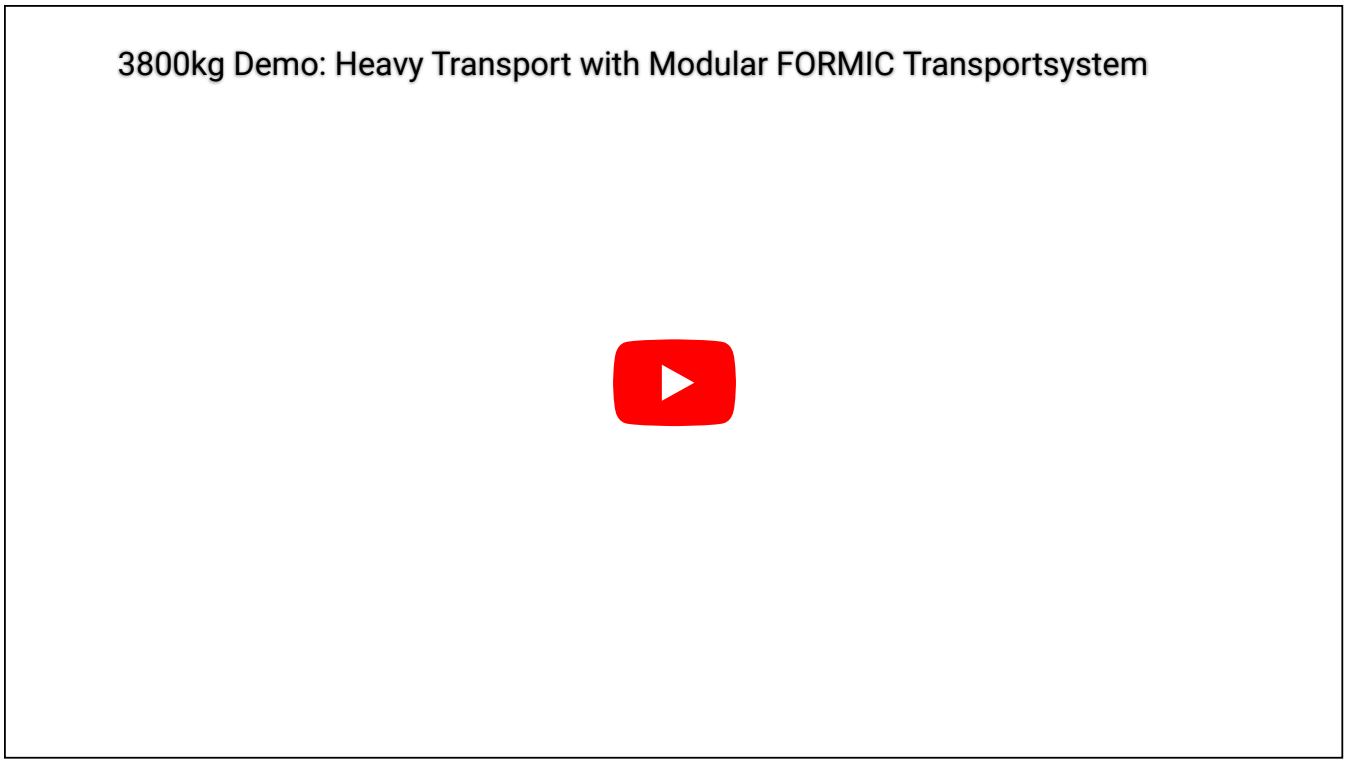
As many as 15 of the modules can be placed under a single load, as long as there's a sufficient vertical gap beneath it for them to squeeze in. If all 15 are used, they can manage a total load weight of 37.5 tons (34 tonnes).



According to the designers, three modules should be sufficient for transporting a typical production machine in most industries **Markus Breig, KIT**

A human operator steers the swarm of robotic modules in real time via an included joystick remote. Because the modules' cameras and radios allow them to track one another's positions at all times, they autonomously coordinate their movements – so in other words, the user just controls them as a group, not as individual units.

An official commercial launch of the FORMIC system should take place later this year. The modules can be seen in action, in the video below.



3800kg Demo: Heavy Transport with Modular FORMIC Transportsystem

Sources: Karlsruhe Institute of Technology, FORMIC Transportsysteme

VIEW GALLERY - 4 IMAGES

Published On Aug 13, My Health Talent

How Telemedicine Has Disrupted Healthcare Delivery

Written by Alex Brown, My Health Talent, 2021

Research progress of orthopaedic robot navigation surgery

王满宜, Chinese Journal of Trauma-1, 2019

Is Telemedicine Right for You?

Published On Sep 27, My Health Talent

Construction and application of information platform for pre-hospital and in-hospital synergic treatment in trauma emergency center

Chinese Journal of Trauma-1, 2020

Ben Coxworth

Based out of Edmonton, Canada, Ben Coxworth has been writing for New Atlas since 2009 and is presently Managing Editor for North America. An experienced freelance writer, he previously obtained an English BA from the University of Saskatchewan, then spent over 20 years working in various markets as a television reporter, producer and news videographer. Ben is particularly interested in scientific innovation, human-powered transportation, and the marine environment.

MOST VIEWED

GAMES

Sega Jet Rocket: The trailblazing '70s arcade game with no computer or screen

AROUND THE HOME

Mosquitoes can fly but they can't hide from the Bzigo Iris

OUTDOORS

Adorable VW camper backpack is the ultimate V-dub van life accessory

LOAD MORE

3 COMMENTS

Sign in to post a comment.
Please keep comments to less than 150 words. No abusive material or spam will be published.

Ric AUGUST 23, 2023 10:28 AM

Using weights instead of giant real world objects makes for a pretty uninspiring video. But this tech is, in fact, amazing and should easily supplant a huge sector of the market. Next would be a version that could handle considerably more uneven and unstable ground, perhaps with some kind of hydraulic configuration allowing these little babies to expand to a height of a foot or two.

reader AUGUST 24, 2023 05:04 AM

KUKA omniMove mobile platforms have been doing this for a long time with omnidirectional tires and up to 90 tonne payload. Interesting to see FORMIC using a center pivot point for manoeuvrability, probably makes it a less expensive solution.

notarichman AUGUST 26, 2023 09:10 AM

i want a few of these to move solar batteries around, my truck out of tight parking spaces, buckets of heavy stuff - oh, would need separate frequencies to direct individual buckets, moving pallets.
i doubt they would move effectively on gravel roads.

Virtual Reality

TRANSPORT

Aircraft

Automotive

Bicycles

Marine

Motorcycles

Urban Transport