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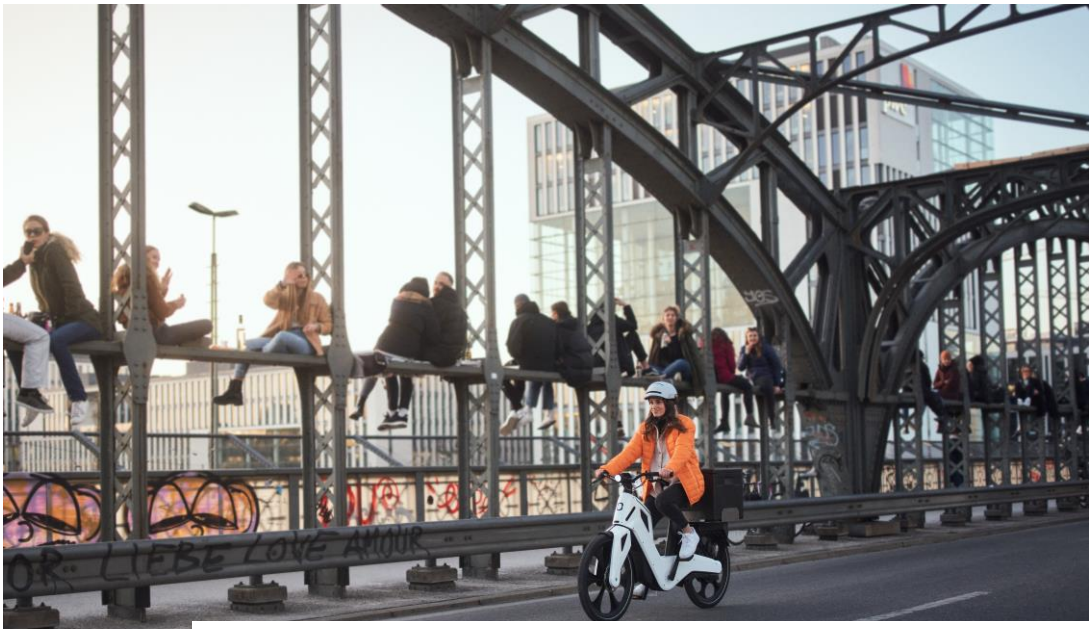

mocci and ITK Engineering are shaping electromobility on two wheels

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The future of our mobility is undoubtedly electric. Two-wheelers play an important role in all this. The Munich-based company mocci developed an electrically powered, digitally connected work and cargo bike called mocci. It could be pivotal to our mobility revolution. ITK Engineering is the strategic engineering partner.

Ruelzheim, 27.09.2023

Kilometer after kilometer of congestion, more particulate matter than the law allows, circling in search of parking for hours on end – the traffic situation in today's big cities has to change in a fundamental way. Electromobility is the right way to go. Electric work and cargo bikes could be part of that solution alongside e-cars. With this thought in mind, the Munich-based company CIP Mobility GmbH set out to develop an electrically powered cargo bike, mocci. ITK Engineering is the strategic engineering partner in its development.

What sets this eBike apart? It operates without a chain or belt, so it needs no conventional wearing parts, very little maintenance, and lasts for a long time. The rider pushes pedals to drive a generator that produces power for the motor mounted on the rear wheel. It is supported by a powerful 800-Wh battery. mocci is the perfect work and cargo bike for traveling 60-80 kilometers or more a day seven days a week, always carrying load.

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Optimized for personalized use with intelligent software
ITK Engineering's experts are contributing to this collaboration with their skills in access management, security, backend structures, app connectivity, and even charging systems. "Each individual bike is digitally connected thanks to intelligent software and puts the needs of the rider first," says Christian Hoetterges, Head of Electromobility at ITK Engineering. The software helps put the bike to good use and supports the service, analysis, and fleet management aspects. The goal here is to predict individual components' wear for each bike and recommend ways of optimizing vehicle performance and loading. Of course, data security to prevent misuse by third parties is a top priority at this level of connectivity.

Vast potential to be tapped with data analytics
"mocci eBikes are already a sort of rolling sensor field that travels the city," says Hoetterges. "In the future, we want to use these bikes even more as data sources by intelligently and automatically evaluating the information they collect and feeding it to other systems." Both partners aim to draw conclusions about the quality of the route from the bike's behavior and anticipate where traffic jams or obstacles such as construction sites or fallen trees could impede the journey.

The specialists are thinking about using artificial intelligence to optimize routing for commercial bicycles to get them to their destination that much faster. The bikes' performance could conceivably be controlled automatically via software, if the law allows this. For example, the bike could be throttled down to 10 km/h in pedestrian zones, while putting all its power onto the road elsewhere.

Eco-friendly to produce, sustainable to use
Another aspect, sustainability, figures prominently in this bike. "mocci is based on a recyclable and extremely robust plastic that offers the same stability as a conventional metal frame," says Dr. Simon Opel, Executive Director Technology at mocci. The benefits are obvious: Carbon emissions during production are some 68 percent lower than when making a conventional aluminum frame. The recycling rate is about 95 percent because materials are not blended. Processing steps such as painting or welding are eliminated altogether.

In the final stages of testing
Around 50 preproduction bikes are being used by customers such as Bolloré Logistics, Schaeffler, EatTasty, and the German Aerospace Center. The production bike will be available in 2024, but at first just for commercial customers. "In the medium term, we will also offer mocci to private users," says Opel. "The bike will be similarly priced to today's cargo e-bikes."

Both ITK Engineering and mocci are convinced that this cargo bike is perfect for optimizing last-mile urban transportation. It could become integral to the mobility revolution by making this transition work in cities.

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About ITK Engineering
ITK Engineering GmbH, founded in 1994 as an "engineering firm for technical cybernetics," is an internationally operating technology company in the software and systems engineering field. Thanks to its strong methodological expertise, ITK covers the entire spectrum – from embedded systems to cloud computing. ITK offers international customers from the automotive, rail technology, building technology, aerospace, medical technology, motorsport, and robotics sectors tailored consultancy and development services. ITK employs around 1,200 employees at the company headquarters in Rülzheim in Germany's Rhine valley and at nine additional branches located across Germany. ITK is also represented in Austria, China, Japan, Spain and USA. Some 1,300 employees currently work for ITK's development partners worldwide. ITK Engineering has been a wholly owned subsidiary of Robert Bosch GmbH since 2017.
www.itk-engineering.com

About mocci

mocci is the trademark of CIP Mobility GmbH, which is part of the Munich-based corporate group CIP GROUP. CIP GROUP started in 2004 as a spin-off of Siemens AG in the field of supply chain services. Today, the company is also active in the areas of strategic transactions and micro e-mobility. The entrepreneurial duo Yao Wen and Dimitrios Bachadakis, as owners and founders, manage more than 50 employees at sites in Germany and China.
www.mocci.com/en/