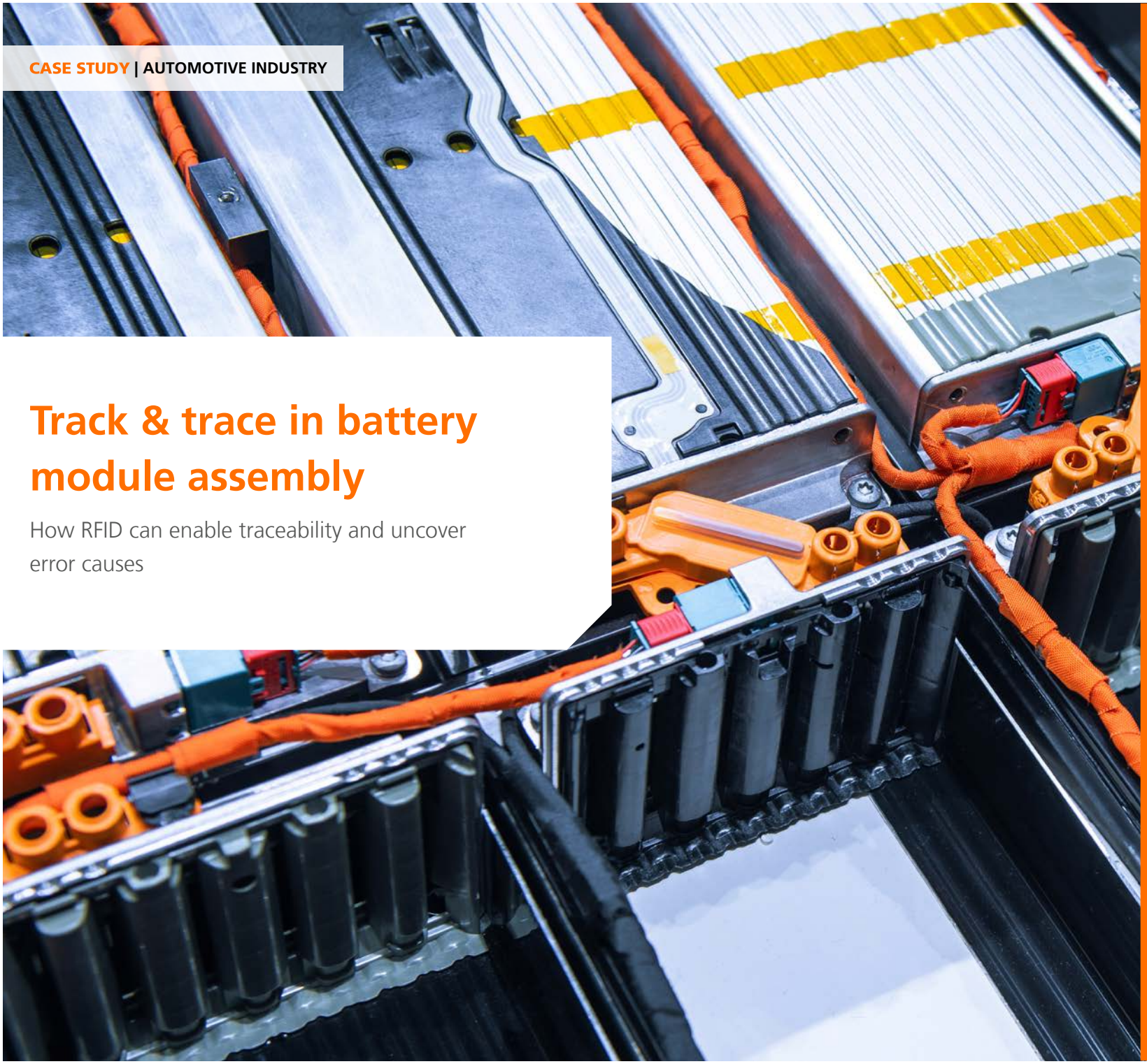

CASE STUDY | AUTOMOTIVE INDUSTRY

Track & trace in battery module assembly

How RFID can enable traceability and uncover error causes

Our customer:
A leading manufacturer in battery production

Based in South Korea, the company manufactures automated assembly lines, welding lines and sealing and bonding systems for the automotive industry and specialises in battery technology and intelligent technologies for electromobility.

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The challenge:

The battery passport will be mandatory in the EU from 2027. This digital document contains important information about the life cycle of the battery, the materials used and recycling. The obligation is currently an important driver for track and trace solutions in production. The customer was looking for a solution to track battery

modules and packs throughout the entire manufacturing process and thus guarantee complete traceability. Seamless identification of the components required for production prevents incorrect assembly or logistics processes. This reduces errors and production waste while increasing the performance of production lines and the quality of products. This helps to bring us closer to the lower battery prices demanded by the market.

The solution – why ifm?

The traceability provided by RFID evaluation units, such as the DTE104 with the associated antennas, is ideal for the objectives set. It is used to control all production parameters and for quality assurance: When, where and under what conditions were the products manufactured? The customer can connect four antennas to one evaluation unit. Compared to other RFID solutions, this reduces hardware costs by 30%. The evaluation units are directly connected to a Mitsubishi PLC via Ethernet/IP. The solution makes it possible to both read and write to RFID tags. A total of 700 DTE104 RFID evaluation units, 2,600 ANT513 RFID read/write heads and 8,000 E80370 RFID tags are used in the plant. Real-time monitoring of quality indicators helps to reduce quality-related downtime. This also increases the first pass yield (FPY) and reduces internal failure costs. Furthermore, product traceability offers protection against recourse claims in the event of recall actions.

Results:

- Hardware costs of the RFID solution reduced by 30 % compared to other RFID solutions
- Hardware costs of the RFID solution reduced by 50% compared to a solution with barcode readers
- Reliable track-and-trace solution using RFID
- Worldwide support from ifm

Cost savings of up to 50 %

Increased machine availability

Increased quality

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