INTERVIEW

of Dunkermotoren GmbH in May 2020

Dunkermotoren on the way to IIoT

For our customer magazine "mo, the three IIoT experts from Dunkermotoren answer the questions of the editorial staff. We are happy to introduce them to you: Markus Weishaar, Product Manager IoT, Vitas Kling and Lucas Mülhaupt, both software engineers at our headquarter in Bonndorf.

Where does Dunker stand today?

M. Weishaar: Today the logic integrated in our motors already provide all the relevant motor data via the existing field bus interfaces such as PROFINET, EtherCAT or CANopen. These can then be used and evaluated using our current tools such as Drive Assistant 5 or MotionApps. This is an ideal starting point for us, as we already have local condition monitoring that we now want to expand.

To this end we are using our many years of experience with intelligent motors and customer applications to develop suitable IIoT solutions for our customers based on this. Our aim is to provide customers with applications that enable them to implement their own digitization projects without having to worry about connecting and analyzing motors.

V. Kling: As already mentioned, Dunker has a great deal of know-how in the field of intelligent motor solutions. We can offer our customers almost any software solution as long as the motors communicate with each other or with a PLC. Here we are very well positioned with our new Motor Control Platform, through which the data provision, mentioned by Mr. Weishaar already works today. The first IIoT projects are just starting up.

Domicile of the Company: Bonndorf i. Schw.
Local Court Freiburg i. Br. HRB 705227
Baden-Württembergische Bank BLZ 600 501 01
Chairman Supervisory Board Rolf Singendonk
VAT No.: DE272979537
Acct: 2323084 BIC: SOLADEST600
Managing Directors: Uwe Lorenz
IBAN: DE93 6005 0101 0002 3230 84

What are the further developments?

M. Weishaar: We are currently working intensively on various software solutions for the Edge, which run on the current Edge Gateways. The software will take on the function of connecting the various motors to the cloud or providing data for customer applications. At the same time, we are beginning to build a device cloud that functions as a location-independent remote platform. Features such as a controlled remote firmware download or analytics functions such as the prediction of failure probabilities are planned.

What are the trends?

M. Weishaar: The current trend is clearly toward data provisioning in the cloud and building on the fact that every manufacturer analyzes its products with its expert knowledge and provides customers with ready-made information in the form of services. Thinking further into the future, models such as "motor as a service" are also conceivable, in which the function rather than the motor is sold. However, this presupposes that our customers first consider and implement similar business models.

V. Kling: Many mechanical engineers are currently trying to transfer information and data of their product into the cloud. A cloud platform, on the other hand, offers various interfaces to connect scalable software in order to provide the customer with data, analyses or other calculations based on the data available.

Via a digital twin, which is a virtual image of a real device in the cloud, it will be possible to configure the device "on the fly", receive monitoring information and data sheets. Customers will be able to use the motor via the cloud as if it were directly connected to the motor on site.

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What challenges will there be?

L. Mülhaupt: Security is still a major issue, which we are also actively addressing. The data we obtain from the motor has a great value, which we have to secure throughout the entire path from the motor to the edge and on to the cloud. Here we are working closely with our partners in the alliances. By using open and established standards such as OPC UA and MQTT, we want to create robust, reliable and secure solutions.

V. Kling: Technologically, I don't see any obstacles. In order to achieve our goals, we need to digitize our products and processes. We are working on that. We are trying to limit ourselves to what we can do and combine it with good solutions from other suppliers.

M. Weishaar: IIoT only develops its full potential if we think in terms of product ecosystems in which all components from the motor or sensor to the ERP systems are compatible. The main thing here is that the individual pieces of the puzzle are interoperable and can be easily combined into a meaningful overall system. Only in this way can the end customer, the plant operator, achieve the promised added value. For this reason, we are also a member of the Open Industry 4.0 Alliance and the MindSphere World in order to actively help shape corresponding approaches.

Are other industries ahead of us?

V. Kling: Today, a Tesla owner receives a notification on the display when a software update is available, and can update it with a single click, without having to go to a workshop. Software such as traffic jam notifications with bypasses ensure stress-free driving pleasure. Cars can already stay in lane on the motorway. I think that the classic mechanical engineering companies and especially Germany have to catch up.

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Will our product portfolio change?

V. Kling: I don't see Dunker IIoT developing new products. Rather the solution to the problems of our customers. Let's take a customer who uses our motors in his machines, which in turn are operated at a faraway location, as an example. If this customer wants a special firmware feature, he can book this quickly and easily via the cloud and transfer it to the motor without having to schedule a service employee for several days.

With Dunker IIoT we want to help our customers to concentrate on their core business and use the full performance of our motor solutions.

L. Mülhaupt: Dunkermotoren has many years of experience in handling motors. Our aim is to digitalize this know-how so that we can pass it on to the customer as a service. Understanding, for example, how ambient temperature, certain load conditions or fluctuations in the power supply can affect the service life of a motor helps in many cases to be able to react in good time to impending failures.

M. Weishaar: Our main concern is also to develop complementary software solutions for our existing product portfolio that enable customers to operate our motors as efficiently as possible. As already mentioned at the beginning, we are already offering options for data provision and diagnosis, which we would now like to expand sensibly with new technologies.

What can a customer expect in the future?

V. Kling: My ideal idea is that the customer can follow the entire production process online after placing an order. Transparency creates trust. As soon as a motor is delivered and connected to the network for the first time, it can automatically synchronize with the "Digital Twin".

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Software analyses the capacity utilization of our motors and notifies the customer of a probable motor failure. The user has the possibility to order and exchange a new replacement motor without unplanned machine downtime.

M. Weishaar: That we support him in the best possible way to implement his own IIoT solutions and provide him with the necessary building blocks to embed our motors in them.

Thank you very much for this insight in the world of IIoT at Dunkermotoren.

Your contact for public relations:

Dunkermotoren GmbH
Janina Dietsche
Allmendstr. 11
D-79848 Bonndorf
Telefon: +49 7703 930-546
E-Mail: Janina.Dietsche@ametek.com

Domicile of the Company: Bonndorf i. Schw.
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Baden-Württembergische Bank BLZ 600 501 01
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