

## Press release

### Synapticon offers modular motor control system

## Optimal brushless motor operation

**Gruibingen (Germany), 17 July 2013 – The electronics specialist Synapticon, based in Gruibingen, Germany, introduces SOMANET, a new system for multi-axis motion control. SOMANET is a modular system of combinable components, which can be used to master more easily challenging tasks of real-time control and regulation of electric motors. In particular, the control of brushless DC motors (BLDC) using FOC (Field Oriented Control) can now be solved faster thanks to SOMANET – without any major development costs.**

The SOMANET modules are designed by Synapticon in a way that allows developers to put together the appropriate basic hardware configuration individually for each controller. In the first step, the developer selects the motor power electronics and sensor interfaces from a range of modules. One component of this modular kit is, for example, the SOMANET IFM Drive DC 100 used to control DC motors at 12-24 V up to 100 W per phase on a 40 by 50 mm circuit board. Another version, the IFM Drive DC 900, extends the range up to 48 V and 900 W per phase, with a module size of only 40 by 60 mm.

### FOC made easy

Field Oriented Control is a motor control technology that allows for a particularly high level of quality in positioning and torque control tasks, such as those frequently required in robotics. FOC requires, however, a lot of computing power, making it the ideal application for SOMANET, which features high-performance XMOS multicore processors. Based on the tasks and desired properties of the actuator being planned, developers can choose a suitable, freely programmable processor module from the SOMANET system for each axis to be controlled. Similarly, a number of communication modules are available with which several actuator and sensor nodes can be connected to each other and integrated into other system components. Synapticon's own development environment contains open source software libraries which can be used to develop highly specific, distributed control solutions at low cost. The combination of these high-performance components also creates new

possibilities for the design of system architectures. Instead of passing simple control commands, such as speed, from a central computer to the motor and closing the control loop via the fieldbus, as has been standard practice to date, more abstract commands can be used that are then implemented by the distributed processors with local intelligence. The technology of such distributed embedded systems with mechatronic interfaces therefore makes it possible to actually implement the concept of cyber-physical systems.

With Synapticon SOMANET, prototypes of products that incorporate motors and sensors can be built and programmed more quickly. In addition, systems developed based on this modular kit can be transferred to serial or mass production with virtually no additional effort thanks to their compact design.

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#### Images available

The images below can be downloaded from the Internet in printer-friendly format:

<http://www.htcm.de/kk/synapticon>



Image source: Synapticon

**With Synapticon SOMANET, the control of brushless DC motors in the range from 10 to 1000 Watts using FOC can now be solved faster without any major development costs.**



Image source: Synapticon

**A module of the modular system for motor control: the SOMANET IFM Drive DC 900**

#### About Synapticon GmbH

Synapticon, established in 2010, is a young and international company based in Gruibingen, Baden-Württemberg, which develops innovative embedded systems to improve the robotics and automation technology of the future. Synapticon's DYNARC Distributed Computing Technology combines modular embedded hardware, model-based software engineering and a complete development environment to facilitate and accelerate the development process for manufacturers of complex products, machinery and facilities. Synapticon also operates as an engineering service provider.



Further information is available at [www.synapticon.com](http://www.synapticon.com).

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