COMPONENTS

MTA @AGRITECHNICA

SMART UNITS

In Hannover, MTA focused on power electronics. The acquisition of all shares in EDN, specialised in the development of OBCs (On-board Battery Chargers) and DC/DC converters for electric and hybrid vehicles, enabled MTA to articulate and detail its strategy for the electrification of vehicle platforms. The synergetic work in terms of research and development, logistics and business relations between MTA and EDN made it possible to develop projects with off-highway machine manufacturers. The stand we saw at Agritechnica featured a display area, with dedicated graphics, of OBCs. The latest OBCs introduced to the market are the BHP22, designed for the European market, and the BHP19, aimed instead at the North American basin.

MTA has placed emphasis on power electronics, also due to the synergy with EDN. With New Holland and with SAME Deutz-Fahr, among others, the Italian company is involved in the control panels business. With STMicroelectronics for electrical and electronic technology for agricultural machinery

Common features are bi-directionality and high resistance even in difficult environmental conditions. Finally, they are designed with a conversion technology that improves power density and specific power. One of MTA's winning features are the High Voltage and 48V architectures, as well as the availability of products such as fuses and fuse holders, power distribution units and connectors. The OBCs and DC/DC converters offered by the power electronics division are marketed under the EDN brand and manufactured in the production facility in Cinisello Balsamo (Italy). In the factory on the outskirts of Milan, production has been increased and research and development expanded to meet the rapidly growing curve of demands from the global market. In front of

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MTA AND STMICROELECTRONICS

MTA and STMicroelectronics are cooperating on the evolution of the electrical and electronic architecture of agricultural machinery. The first product of this collaboration is the Smart Fuse Box, an intelligent control unit using ST electronic fuses, the STi2Fuse. Developed for off-highway applications, it can be used to drive, protect, diagnose and monitor up to 30 electrical or electronic loads through the STi2Fuse and interface analogue/digital signals and loads via the vehicle's CAN network. The STi2Fuse is ST's new family of smart electronic fuses. Compared to conventional fuses, STi2Fuse are resettable and have 100 times faster intervention times. A feature of STi2Fuse is that the rated current and the tripping curve are programmable and the nominal current is optimised according to the load and not the size of the fuse. This aspect leads to an optimisation of the wiring size. The STi2Fuse Smart Fuse Box combines both fuse and relay function in one unit. The system diagnostics allow "health monitoring" and "predictive maintenance" algorithms to be set up. The hardware and software architecture of the Smart Fuse Box is also designed to meet the most stringent Functional Safety and Cyber Security requirements.

the audience of agricultural mechanisation professionals, there was also room for MEC 97, Maxi-MEC and C-MEC 138, electrical power distribution and utility protection units made specifically for agricultural applications, as well as earth-moving applications, which can be defined as "smart" thanks to a new CAN Plug-in module. They are all plug & play modular control units, made with Pcb and press-fit technology, in order to customise the content of fuses and relays and the wiring diagram to the customer's distinct specifications. MEC 97 and Maxi-MEC are designed for the engine compartment, while C-Mec 138 is designed for in-cab installation; they are compact in size and allow all functions to be integrated in a single unit, eliminating the need for several modules and associated wiring. The CAN Plug-in module, which is capable of driving the relays of the 3 MEC ECUs, connects them to the vehicle's CANbus network. Through this network, the module transmits commands to generate the necessary actuations, as well as conveying diagnostic information. Just like the customisable control panels, displays and electronic control units offered by MTA, the Can Plug-in module can be programmed thanks to MTA Studio, a proprietary software tool that allows even the less experienced ones to customise all products, both off-the-shelf and custom. There is also a lot at stake for tractor cabs. The switch control panel is aimed at New Holland specialists. It supervises certain functions via the CAN network. The 10 MTA buttons are used to manage headland manoeuvres, suspension or front and rear hitch control, and status LEDs to show the actual activation of controls. It is designed with an IP54 degree of protection to operate in the hostile environments typical of the agricultural sector, and it is characterised by its small size, which facilitates its placement in the cab next to the armrest. For SDF, there is the MLC control panel for some open field and specialised tractors. In the same shape and size as the previous version, also by MTA, it has been thoroughly revamped. At the centre of the MLC is the 3.5-inch colour TFT, the heart of the user interface, the layout of which can be configured at the SAME and Deutz-Fahr plants at the end of the assembly line by sending specific CAN messages.