

MTA Announces Partnership with STMicroelectronics for Smart Tractor

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MTA announces at Agritechnica 2023 a technical-commercial partnership with STMicroelectronics, with the aim to support the evolution of the electric/electronic architecture of tractors and agricultural machines, introducing intelligent components for power management and distribution.

The first product resulting from the collaboration, presented at this important event, is the **Smart Fuse Box**, an innovative intelligent control unit that uses ST electronic fuses, the STi²Fuse.

Smart Fuse Box is specifically developed for the off-highway world and can be used to drive, protect, diagnose and monitor, through the STi²Fuse, up to 30 electric or electronic loads such as ECUs, ADAS systems, equipments, lights, heating, air conditioning and to interface analog/digital signals and loads via the vehicle's CAN network.

The STi²Fuse is the new family of intelligent electronic fuses from ST. Compared to traditional fuses, STi²Fuse present a series of advantages that make them essential for the architecture of the future: they are in fact resettable, safer and more reliable over time, have intervention times 100 times faster and are able to diagnose the "health" of the load they drive.

One of the characteristics of the STi²Fuse is that the nominal current, as well as the tripping curve, are programmable and furthermore the nominal current is optimized according to the load and not the size of the fuse, an aspect which leads to a consequent optimization of the dimensions of the wiring.



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Smart Fuse Box, thanks to the STi²Fuse, combines in a single unit both the fuse and relay functions, thus leading to a reduction in its size. Furthermore, and very importantly, it does not require maintenance, even in the event of a load fault, since the electronic fuse can be managed remotely and is resettable via software. Through the electronics, in the presence of current peaks, it is then possible to manage the on-board loads more accurately and finally the system diagnostics also allows to set health monitoring and predictive maintenance algorithms which minimize down-time of the vehicle.

The hardware and software architecture of the Smart Fuse Box is also designed to satisfy the most stringent Functional Safety and Cyber Security requirements, increasingly prescribed to electronic control units. However, it remains possible for the OEM to develop its own application and its own customizable diagnostic policies based on a low-level software layer supplied by **MTA** and certifiable according to the above requirements.



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