



AGRICULTURAL INDUSTRY
ELECTRONICS FOUNDATION

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ISOBUS and AEF – for cross-manufacturer compatibility

ISOBUS is a data bus for agricultural applications. It is based on international ISO standard 11783 and defines the „language“ between implements, tractors and terminals from different manufacturers. However, even though agricultural technology manufacturers have agreed on a global ISOBUS standard, not all machines are compatible. In practice, „plug and play“ is still some way off in a number of areas. Why? The ISO standard was not clear and ambiguous enough in several points. Although manufacturers were launching ISOBUS systems, these did not function across equipment from different manufacturers.

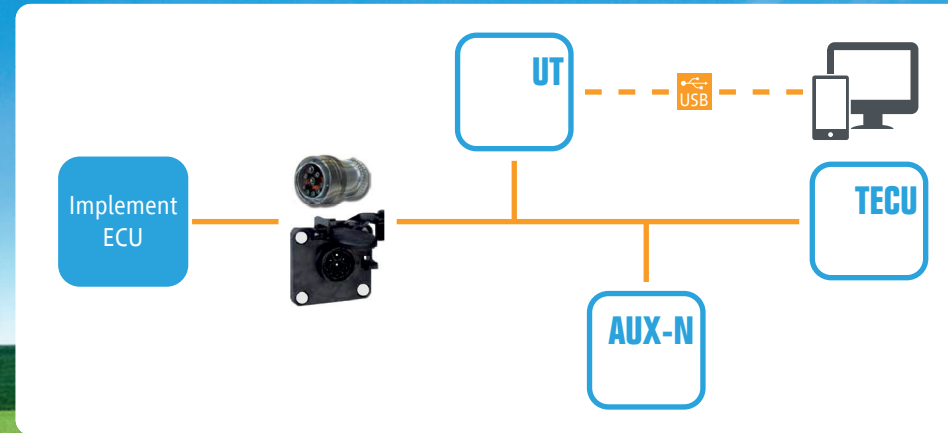


This is why AEF has introduced additional guidelines for individual functionalities. AEF members work according to these guidelines when developing new products. And that works!

The functionality concept – so that everyone can understand and draw comparisons

Whether tractor, implement or display – every product offers a series of features. It can, however, be very confusing when manufacturers use different names or descriptions for these features. The technical definition can also vary considerably. When deciding what equipment to buy, it is therefore difficult to understand and compare different products in detail. And it is even more difficult to find out what tractor-implement-display combination actually supports a specific function.

This is why AEF has developed the functionality concept. It describes each feature as an independent „module“ on the ISOBUS. It is important to note that it is always the lowest common denominator that determines whether equipment works together properly. Only functionalities that are supported by all components can actually be used by the driver.



Universal Terminal



This functionality can be used to operate an ISOBUS implement on any display. Or an individual display controls different ISOBUS implements. In this way, an ISOBUS Universal Terminal can render numerous implement-specific displays superfluous.

Auxiliary Control



This is used to connect additional elements, such as a joystick or switchbox to the ISOBUS, making it easier to operate the implement. Once connected, the functions of the implement can be operated by the AUX device instead of having to use the ISOBUS Universal Terminal.



Tractor ECU



The TECU represents the „job computer“ of the tractor on the ISOBUS. As a gateway, it provides tractor data for the other ISOBUS participants, such as forward speed or PTO speed or rear hitch position. In this way, for example, an implement can apply fertiliser or crop protection products depending on the driving speed signal provided by the TECU.

ISOBUS Shortcut Button



ISB can be used to deactivate functions of an implement that have been activated via an ISOBUS display. This can be helpful when the operator has navigated away from the Universal Terminal page in the display to monitor another tractor operation. The implement manufacturer defines which functions can be deactivated by the ISB.

Tractor Implement Management



TIM is a cross-product and cross-manufacturer ISOBUS solution where the implement controls certain tractor functions and optimizes the working process. The implement sends information to the tractor via standardized and secure communication which leads to an optimization of the overall system.

File Server



The File Server enables data exchange with external instances (e.g. USB drive or cloud connection) and ISOBUS devices. The File Server acts as a central place to store or retrieve data. It standardizes the data transfer method, but the data content can, in fact, be proprietary.

Task-Controller basic

TC-BAS

This functionality documents specific values of the work that has been carried out, by the ISOBUS implement. Documentation can then be exported from the Task-Controller and imported into the farm management information system thanks to the ISO-XML data standard.

Task-Controller geo-based

TC-GEO

TC-GEO can additionally be used to collect location-dependent data, such as an as-applied map. This functionality also includes the use of a variable rate prescription map when the field has been divided into management zones which require different application rates .

Task-Controller Section Control

TC-SC

This controls automatic activation of sections on the implement, for example when spraying fertiliser, based on the GPS position and the desired degree of overlap.

AEF ISOBUS certification – a label for functionality

AEF has developed the AEF ISOBUS conformance test to guarantee operational reliability for dealers and farmers. The test by independent institutes confirms that the certified functionalities can actually be used in practice.

If a product has successfully passed the test, the manufacturer can use the AEF ISOBUS label as proof. It documents conformity of the ISOBUS components with the ISO 11783 standard and the AEF guidelines.

AEF Certified

ISOBUS

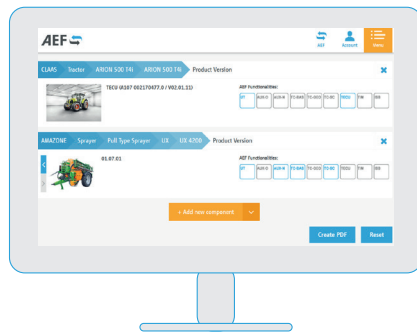


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AEF ISOBUS Database – reliable information for dealers and farmers

AEF ISOBUS-certified products not only receive the label, they are also listed in the AEF ISOBUS Database. The Database can be searched to provide quick and easy information on which machines support which functionalities and to check compatibility with other machines. This is very helpful when purchasing equipment. It saves a lot of time and money on researching other sources and making inquiries with individual manufacturers. Dealer Service Departments also benefit from the AEF ISOBUS Database when there are issues in the field.

The AEF ISOBUS Database enables dealers and farmers to access all the information in one place. They can also use the AEF Mobile app to call up information on a smartphone or tablet.



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