NEVÓNEX

Running a NEVONEX Digital Service

A NEVONEX Digital Service is displayed and controlled in the NEVONEX Cockpit App running on a tablet. The tablet is connected to the NEVOENX Box via Wi-Fi. After the start of the Digital Service in the Cockpit App, the NEVONEX UT appears automatically as a pop-up or as a new button in the terminal of the tractor.

The communication between the Digital Service and the implement is done via ISOBUS.

ISOBUS - Task Controller (TC)

A task controller is the interface between the application (FMIS, Digital Service, etc.) and the machine. The application is operating as TC-server and the machine as TC-client. The assignment between TC-server and TC-client is done using the function instance. The TC-server and TC-client with the same function instance are assigned.

If the NEVONEX Digital Service must control the implement, NEVONEX is operating as TC-server. Because NEVONEX and other TC-servers use function instance 0 as default, a communication conflict would occur. Therefore, when using NEVONEX as TC-server, all other TC-servers must be disabled, or at least the function instance of the other TC-servers must be increased manually.

How to deactivate the TC-server or how to change the function instance of different terminals, is described in the terminal cheat sheets.

ISOBUS - Function Instance – Function Number

Background

The Idea of the function instance is, to have several servers of the same functionality (e.g. TC-server, UT-server) at the same time being active on the ISOBUS. TC and UT are independent functionalities on the ISOBUS, and both use independent function instance to assign server and client. The server and client with the same function instance are assigned, so it's still clear for a client what server to connect to.

The lower the number of the ISOBUS function instance, the higher the priority (0 = highest priority).

Note: Some manufacturers specify a function instance (starting at 0) other a function number (starting at 1), this can lead to confusion. A function instance of 0 is equivalent to a function number of 1.

Example

There might be two terminals (UT-server) connected to the ISOBUS, both shall be active, as the user has 2 implements and wants to control them with different terminals. For that reason, the UT-servers of the two terminals will be configured to different function-instance numbers. The configuration is done manually in the terminal settings.

After that, the user will configure the function instance of the implements (UT-client) in the implement settings accordingly, to tell the implements to which terminal they shall connect to.

Drawback

Unfortunately, for the task controller functionality, the function instance was not defined in the first version of the ISOBUS standard, so there are many machines in the field not supporting this. This means, if we have a terminal where we cannot disable the TC-server, but change the function instance, and the TC-client does not support function instances, the TC-client will always connect to the first TC-server it will detect on the bus.

In that case we will not be able to run the NEVONEX TC-server function stable and reliable unless the other terminal is switched off or disconnected.