Content

- The origin of ISOBUS
- Electronics in the Agribusiness
- The basic components in the ISOBUS system
- ISOBUS Functionalities
- Cross-manufacturer compatibility as a Unique Selling Point
- Examples of ISOBUS applications
- What is a Task Controller
- ISOBUS Intelligence
- AEF – ISOBUS alignment in our Industry
The origin of ISOBUS

- ISOBUS: protocol for data communication between tractors implements.
- 1980’s patent on ISOBUS by Kverneland Group Mechatronics
- Patent released in 2001
- ISOBUS grown to international standard
- ISO 11783
- Plug & Play for all ISOBUS certified systems
Why ISOBUS?

• One controller for all implements
• Centralised data collection
• Easy data transfer to terminal (e.g. IsoMatch Tellus)
• Standardised cables
• Standardised connectors
Electronics in Agribusiness is growing fast!

• Electronics is the key driver of innovation in agricultural technology

• To increase sales, we have to link individual innovations into intelligent systems, added on to our machines, examples:
  - GPS-based boom section control (Boom Guide)
  - Variable rate control for a precision seed drill

The lack of compatibility of the various solutions in the market often leads to the frustration of many farmers because innovations are available but not always applicable. Knowledge and good information from our side is key!
Basic components in ISOBUS system

- Tractor Electronic Control Unit (TECU)
- Universal Terminal (e.g. IsoMatch Tellus)
- Implement Electronic Control Unit
- Standardised connectors (implement and in-cab)
- Standardised cables

Compatibility as a customer benefit!
**ISOBUS Functionalities**

<table>
<thead>
<tr>
<th>Functionality</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>UT</td>
<td>Universal Terminal</td>
</tr>
<tr>
<td>AUX-N, AUX-O</td>
<td>Auxiliary Control; e.g. a Joystick</td>
</tr>
<tr>
<td>TC-BAS</td>
<td>Task Controller basic; Documentation &amp; Application of Totals</td>
</tr>
<tr>
<td>TC-GEO</td>
<td>Task Controller geo-based; Documentation &amp; Application of Variables</td>
</tr>
<tr>
<td>TC-SC</td>
<td>Task Controller Section Control</td>
</tr>
<tr>
<td>TECU</td>
<td>Tractor ECU Basic</td>
</tr>
<tr>
<td>TECU-A</td>
<td>Advanced Tractor ECU; “Implement steers Tractor”</td>
</tr>
<tr>
<td>SQC</td>
<td>Sequence Control</td>
</tr>
<tr>
<td>ISB</td>
<td>ISOBUS Shortcut Button</td>
</tr>
</tbody>
</table>
Kverneland Group – ISOBUS compatible

All Kverneland Group ISOBUS implements are compatible on competitor tractor terminals:

• CNH
• Challenger
• Müller-Elektronik/Dammann
• Fendt
• John Deere
• Massey Ferguson
• ...

Likewise the IsoMatch Tellus terminal ensures compatibility with other ISOBUS implement manufacturers if:

• Certified by ISO 11783
• Listed in AEF database.
Cross-manufacturer compatibility as a USP!

We set the trend!
Kverneland Group is the first partner in the industry that has come with a 2nd generation Universal Terminal, the IsoMatch Tellus.

- Standardisation of the control settings, a better overview in the tractor cab
- Easy handling
- Simple connection between tractors and implements
- Cost savings when using several ISOBUS implements steered by just one ISOBUS terminal
Task Controller (TC)

- dGPS RTK
- ISO-XML
- ISOBUS Implements

Farm Management Software

agrocom.

Tractor and ISOBUS Terminal
Task Controller (TC) Functionalities

The Task Controller (TC) is software that

• Controls all communication between home PC, terminal and connected machines. This can be seen as a headquarter of a company who is in control of all relevant activities.

• Manages all information coming from the machine, GPS and field application rates created on your home PC in order to ensure that the machine will work according to all these parameter.

• Will take care of the documentation. All data will be saved on an USB-Stick to be loaded on your home PC.
Task Controller – Functionality for the user

1. Automatic Section Control (SC)
2. Variable Rate Control (VRC)
3. Task Management and Documentation
A new logo – a new Sales Argument

ISOBUS Intelligence logo:
• Designed for all Kverneland Group ISOBUS implements.

• Shows that the implement is fitted with ISOBUS technology.

• Provides the message that the machine has an added value in terms of “communication technology”.
  • This enables the machine to communicate directly with a terminal in the tractor.
  • This leads to an easier operation of the implement and is regarded as the future solution for controlling machines and machine data.
Profile

AEF:
- An independent, international, industrial organization
- Co-founded in 2008 by Kverneland Group (Mechatronics)
- Coordinating the communication within agricultural industries and the farmer business
- Giving support for the implementation of Agricultural Electronics Standards.
- Per June 2011, 100 members!

- Close co-operation with the:
  - AEM (Association of Equipment Manufacturers)
  - VDMA (Verband Deutscher Maschinen- und Anlagenbau - German Engineering Federation).

- One platform for ISOBUS technology in our industry
- One standard for ISOBUS certifications
- One quality mark and trademark for ISOBUS

http://www.aef-online.org
AEF conformance test / compatibility database

AEF is developing:

• A new conformance test for terminals and implements
• An internet database in which the farmer / dealer / manufacturer can enter his/her personal tractor and machine combination.
• He/she will then get the information about possible functions and compatibility of the respective systems.

Launch of AEF ISOBUS database will be at Agritechnica 2011
⇒ application for medal award!
Setting the benchmark

With currently more than 50 ISOBUS implement models in the market, Kverneland Group has the leading position in ISOBUS solutions for agricultural equipment.

All ISOBUS machines produced by Kverneland Group can be recognised by the ISOBUS Intelligence logo.