

Think ISOBUS ...

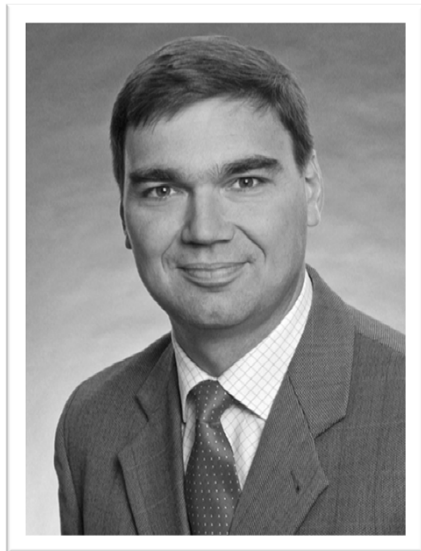


AGRICULTURAL INDUSTRY
ELECTRONICS FOUNDATION

Welcome to AEF

Think ISOBUS ...

Overview to AEF activities



Carsten Hühne

AEF Projectleader Communication & Marketing
Spokesman Europe

employed by Kverneland Group Deutschland GmbH

Electronics in the Agricultural Industry

- Electronics are key drivers of innovation in ag machinery.
- Proprietary island solutions often are insufficiently compatible.
- Systems need to be standardized and compatible with products of other brands in order to make their breakthrough when it comes to applicability.
- The keyword is ISOBUS.



Why the AEF has been founded

- ISOBUS launched at Agritechnica fair 2001/03
- Strategically important decision for all manufacturers
- Slow progress in the following years
- Different interpretations of ISO 11783
- Compatibility problems
- Different marketing approaches, confusing naming: ISOBUS "prepared", ISOBUS "compatible", ISOBUS "ready"
- Proprietary solutions based on ISOBUS confuse the customer with the result of irritation and frustration



Reason: Lack of round table, platform for the ag industry to share and agree upon details in addition to the standard.

About the AEF

Agricultural Industry Electronics Foundation

- Founded October 28th 2008 by 7 agricultural equipment manufacturers and 2 trade associations
- More than 170 companies, associations and other organizations have already signed up
- Objectives:
 - ➔ Coordination of international development of ag electronics
 - ➔ First priority ISOBUS

AEF Founding Members



AEF Membership – Overview

Character	Quantity
Manufacturers	155
Trade Associations	4
ISOBUS Laboratories	5
Universities	8
Total	172

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AEF Trade Organisations

- VDMA – Germany
- AEM – USA
- AXEMA – France
- UNACOMA – Italy



ASSOCIATION OF
EQUIPMENT MANUFACTURERS



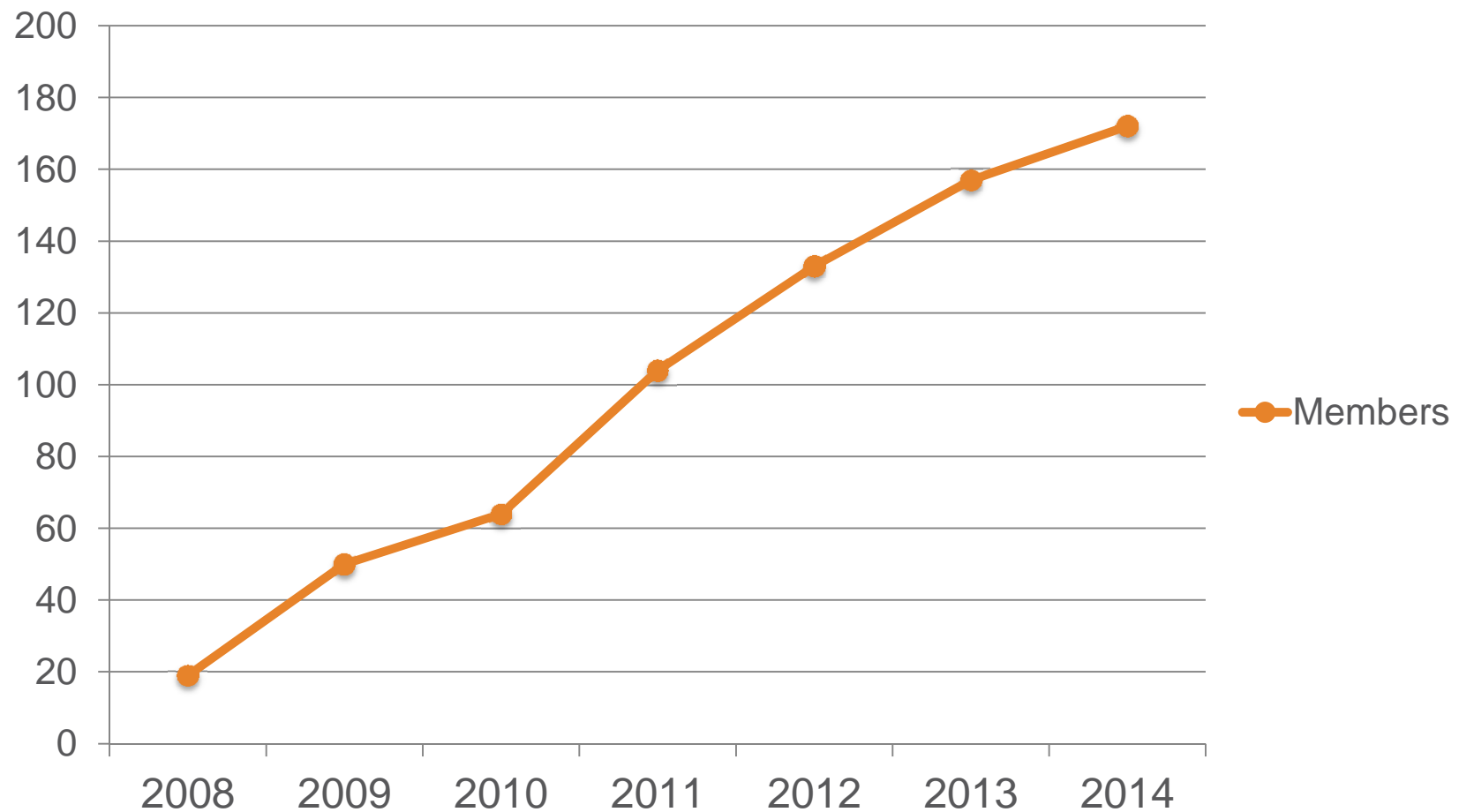
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AEF Membership – Countries

#	Country	Percent	Quantity
1	Germany	43 %	74
2	USA	15 %	25
3	Italia	9 %	16
4	France	8 %	13
5	Netherland	5 %	8
6	Great Britain / Finland	3 %	5
7	Austria / Canada	2 %	4
8	Belgium / Japan	1,65 %	3
9	Australia / Brasil / Denmark / South Korea	1,1 %	2
10	Argentina / Hungary / Spain / Sweden	0,55 %	1
Total	Countries: 19	100 %	172

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AEF Membership – Development



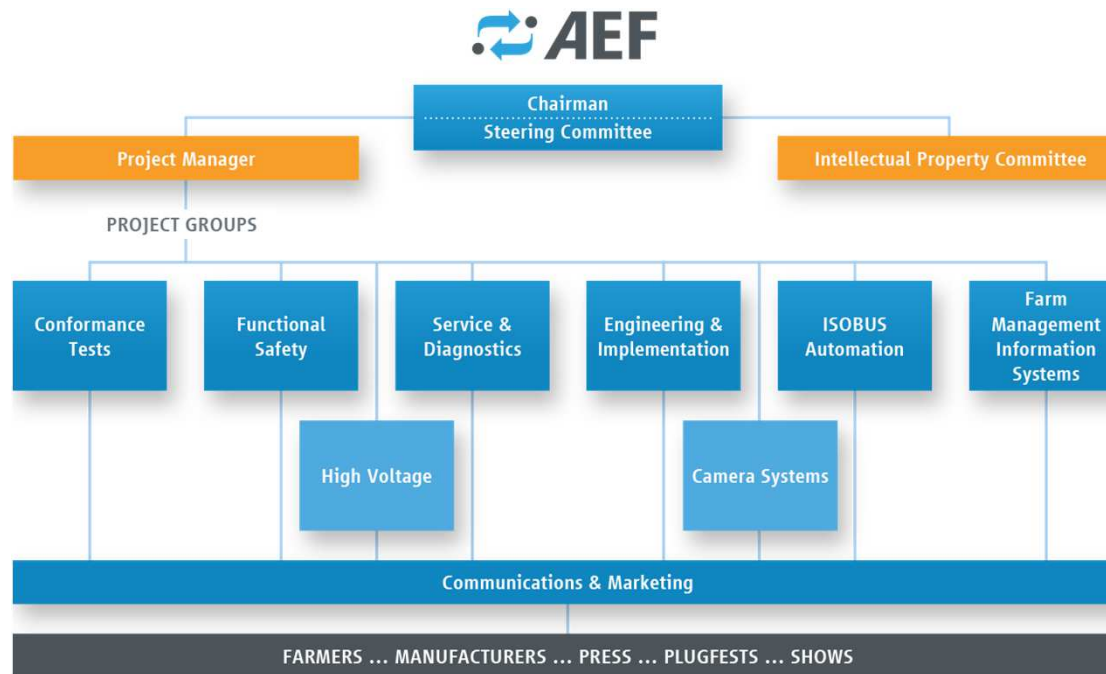
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What is the reason for this success story?

The realization of electronic standards in the ag industry can only succeed if the globally acting players will accept and push them forwards.



Think ISOBUS ...



On the left:
Rainer Hofmann (AGCO/Fendt), who
was the AEF Chairman for 4 years
(2008-2012), hands over the
Chairman's gavel to incoming
Chairman Peter van der Vlugt.

80-100 engineers & marketing experts work together on a voluntary basis, developing mandatory guidelines to implement the standard.

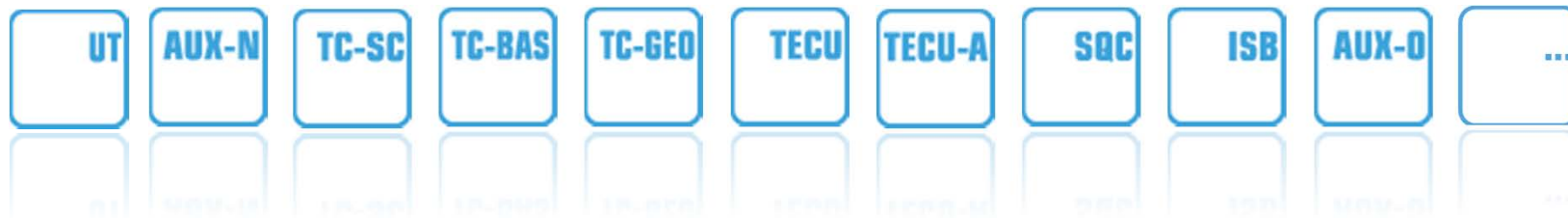
ISOBUS – projects/results



- AEF ISOBUS Functionality Concept
- AEF Conformance Test
- AEF Database
- AEF ISOBUS Certified Logo

AEF ISOBUS Functionalities

- An ISOBUS functionality is defined as a product which can be explained and sold to the end user as a separate “module” on the ISOBUS.
- One or more can be bundled together into a retail product intended to interconnect with other products that contain AEF Functionalities.
- Only Functionalities supported by all components involved can be used.



- An open concept, new functionalities will be defined in the future ...

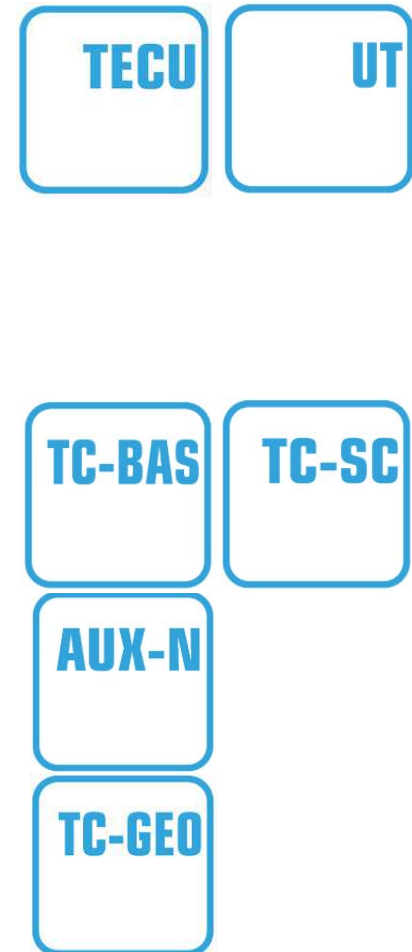
AEF Conformance Tests

- The AEF ISOBUS Conformance Test project team has developed an automated ISOBUS test tool for assurance of conformance of ISOBUS components with the ISO 11783 standard
- The tool will test functionalities exceeding the standard, such as Section Control, that were defined by the AEF in guidelines.
- Monthly updates for:
 - Maintenance of Test Protocols & Simulators
 - Moving new tests through validation to production

AEF Conformance Tests

ISOBUS Functionalities Test Coverage extended

- Released:
 - ECU Physical Layer, Minimum CF, TECU, UT client, TC-BAS & TC-SC server, AUX-N
 - TC-BAS & TC-SC client, AUX-O
 - **UT server**
- 2015, first priority:
 - TC-GEO, FMIS



AEF Conformance Tests

Five test laboratories are now ready for conformance testing

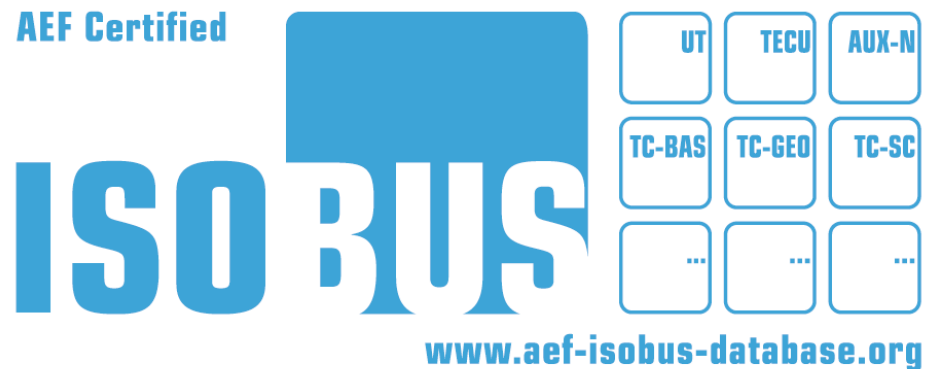
- ISOBUS Test Center (ITC) – Germany
- Reggio Emilia Innovazione (REI) – Italia
- Nebraska Tractor Test Laboratory (NTTL) – USA
- DLG Test Center Technology and Farm Inputs – Germany
- KEREVAL – France



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AEF Certified Label

- The new AEF Certified Label states that the respective ISOBUS component is in compliance with the ISO standard 11783 and moreover, with the additional AEF Guidelines. The product has successfully passed the AEF certification process.



AEF ISOBUS Database

- web-based application providing quick and easy access to manufacturers' information regarding ISOBUS
- intended to deliver up-to-date, consistent and trustworthy information about compatibility of machines, implements, terminals and other components that have been certified by the new AEF ISOBUS Conformance Test.

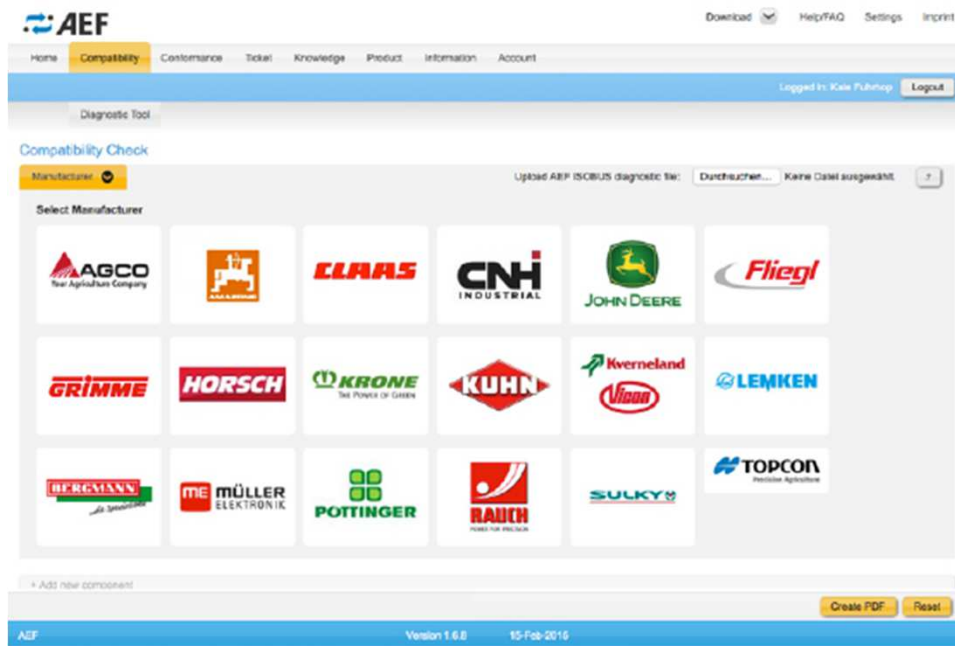


www.aef-isobus-database.org

AEF ISOBUS Database

Launch process

- Since Agritechnica 2013 manufacturers are allowed to upload datas
- Since July 2014 test dealers are integrated
- Since September 2014 all dealers worldwide are allowed to get access rights; they have to apply for access rights via their brand
- **Launch of worldwide public access 22nd of February 2015 SIMA show**



www.aef-isobus-database.org

AEF ISOBUS Database

Launch process

AEF has been granted a „Citation“. The awards committee recognizes the effort of the ag industry to provide transparent information on ISOBUS and compatibility and decided to support the mutual endeavour.



www.aef-isobus-database.org

Think ISOBUS ...

AEF Booth at SIMA 2015, Hall 5A H 051



AEF ISOBUS Conference Tuesday 24th

CONFERENCE AEF ISOBUS

L'ISOBUS des fonctionnalités pour s'interconnecter : Quelles avancées depuis 2013 ?

Mardi 24 Février de 15h30 à 17h dans la Mezzanine de l'AgriCenter, Hall 4.

La norme ISOBUS dans le monde de la machine agricole offre diverses fonctionnalités permettant ainsi aux machines, outils, consoles et logiciels agricoles de s'interconnecter. Nous regarderons quelles sont les grandes avancées depuis 2013 au sein de L'AEF et quelle aide cela va-t-il apporter aux agriculteurs, concessionnaires et également fabricants d'agro-équipements.

Think ISOBUS ...



A bright future!

