SMART FARMING 4.0

Smart Education for Smart Future Farmers

A MODERN AND STATE-OF-THE-ART TRAINING CONCEPT . . .

. . . FOR MECHATRONIC SPECIALISTS FOR AGRICULTURAL MACHINERY

TRUCKTRAIN
SYSTEM

Agriculture has seen many revolutions, whether the domestication of animals and plants a few thousand years ago or the "green revolution" with systematic breeding and the widespread use of man-made fertilizers and pesticides a few decades ago. Now agriculture is undergoing a fourth revolution triggered by the exponentially increasing use of information and communication technology in agriculture – it is "The Smart Farming Revolution".

These technical improvements constitute a technical revolution that will generate massive changes in agricultural practices. Such profound changes in practice come not only with opportunities but also big challenges.

This training system focuses on the topic of "Smart Farming 4.0" on the basis of the ISO bus. The main focus is on the function of "Precision Farming with Section Control". Maximum practical relevance is achieved through the use of original components and the complete integration of the ISO and J1939 buses. Numerous measuring points and various fault simulations make the TruckTrain an individually usable training system.

The relevant theory is conveyed in the associated e-learning course in a target group-oriented manner and using high-quality animations and videos. With this system you simulate "Precision Farming" by bringing tractor and seed drill virtually into the classroom.

Training contents
- Function of "Precision Farming" and dealing with modern measuring instruments
- Analysis of data transmission systems
  - Telemetry Systems - GPS
  - CAN bus
  - J1939
  - ISOBUS
  - Implement Bus
- Determine system states with the help of diagnostic systems
- Compare information from databases and evaluate results
- Creation of map material on the central server
- Data transfer central server to tractor
- Tractor and implement components
- Power Link Box
- Working relay
- Universal Terminal
- AUX devices
- Incab socket
- ISOBUS socket
- Diagnostic socket
- TECU
- Implement ECU
- Sensors / actuators
- Active and passive termination resistors
- Information flow in the processes typical for the industry in networked systems
- Job Preparation
- Fieldwork with GPS
- Transfer of map material into the terminal
- Expansion stages of the TC-SC
- Use networking plans and debugging programs
- Limiting, determining and evaluating faults and their causes in data transmission systems
- Identify sources of faults in electrical and electronic components of networked systems
- Perform resetting and basic settings on systems and adjust learning values
- Check and update software versions
- Universal Terminal (UT)
- Tractor Implement Management (TIM)
- ISB Log
- Farm Management Information System (FMIS)
- Task controller (TC)

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