

SmartService 4.0

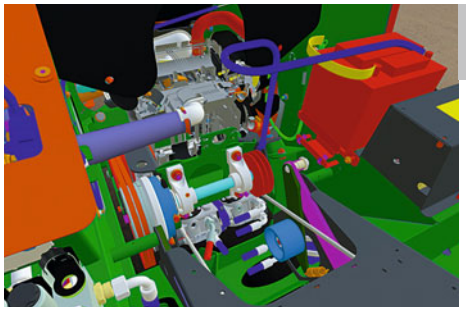
AMAZONE SmartService 4.0

Use of virtual and extended reality and of digital media for service, training and maintenance work



In the world of evermore complex machine design, AMAZONE, via SmartService 4.0, is utilising the technology made possible by digital VR (Virtual Reality) and AR (Augmented Reality) technologies to further enhance its learning, training and repair processes in the sector of technical customer service as well as assisting its customers in carrying out operational advice routine and maintenance work.

This is realised by:



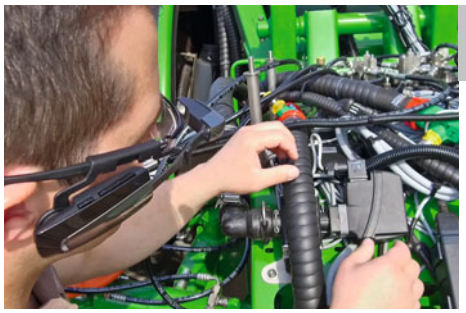
SmartTraining VR

Training and instruction on complex machinery by using Virtual Reality technology (VR)



SmartLearning

Interactive driver training for the end user on complex machine operation



SmartInstruction AR

Repair or maintenance advice using Augmented Reality (AR) and mobile devices



SmartSupport AR

Direct support of service technicians locally using Augmented Reality (AR) and mobile devices

Legend:

VR = Virtual Reality

AR = Augmented Reality

= Mobile devices

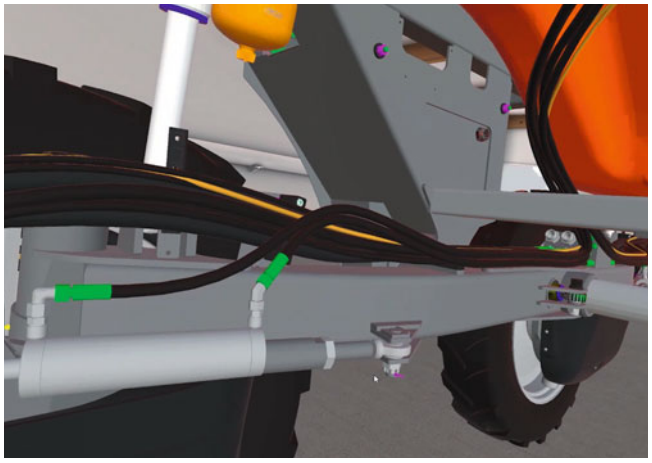
= PC

SmartTraining

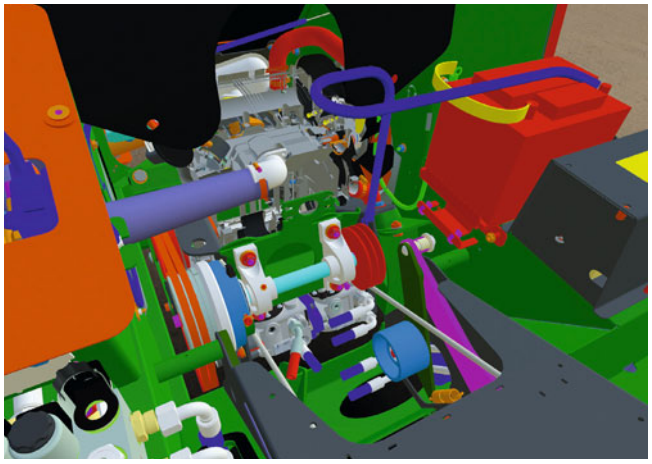
In the virtual training world, scenarios on the basis of 3D-CAD data are created which allow the service technician to learn the maintenance and repair procedures so as to be able to later make use of the gained experience by putting it in practice. In this way, even complex procedures, such as, for instance, the assembly of components inside a Pantera spray agent tank or on a Profihopper can be learned. Also, in this way, little-used service situations or assembly methods can be taught and perfected beforehand so that, in case of necessity, this knowledge can be recalled. At the same time, the system provides the possibility to offer to the end user training modules on maintenance schedules on the Profihopper or Pantera and to explain minor repair work. As the system is easily transported, the training can be carried out both at AMAZONE or also, for instance, at their service partner.



Service technician when verifying the SmartTraining modules



Service training on a virtual Pantera



Maintenance training on the virtual Profihopper



SmartLearning

The interactive driver training with which, for example, the installation of a Profihopper or a Pantera can be learnt both online and offline via a PC or Tablet. The new service offering provides drivers with the possibility, prior to its initial use, to get acquainted with a new machine and its operation. However, even experienced drivers can use it to refresh their knowledge so as to even better exploit the potential of the Profihopper or of the Pantera.



Service specialist during the creation of a SmartLearning lecture



SmartLearning lecture: Service technician getting ready for the installation training



SmartLearning lecture: Optimising the machine adjustments



SmartInstruction

With the aid of special AR headsets, the AMAZONE service specialists create a wide variation of modular maintenance and repair instructions, e.g. maintenance of a Pantera or a Profihopper. By using such AR headsets, the implementation is done via voice input so that the user has both hands free to carry out the relevant actions.

In future, pre-prepared maintenance and repair instructions will be made available for download to all sales partners via a database in the AMAZONE dealer portal. These instructions can then be reproduced on most terminals (AR headsets, tablets or Smartphones).

In addition, selected maintenance instructions are made available for the end user. These will be made available to the customer free of charge via the machine-specific SmartLearning modules.



Service specialist during the creation of a SmartInstruction



Service technician during the execution of a SmartInstruction on a Profihopper



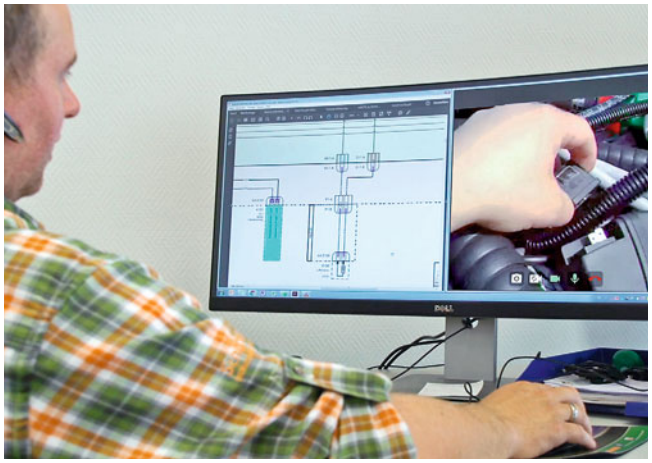
The end user studies the SmartInstruction for maintenance advice



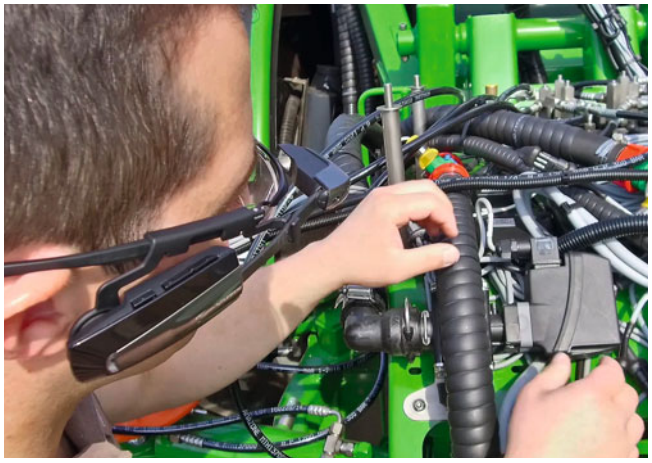
SmartSupport

With the aid of special software, AMAZONE offers the possibility of a widened communication spectrum. This can be used worldwide across a range of different terminals such as, for example, Android or iOS screens. In this way, for example, the technician from the AMAZONE service partner who has to carry out a complicated repair can be connected with a service specialist in the office via tablet, Smartphone or digital AR data headset in real-time. Via the camera in the terminal of the service technician, the service specialist can now see the physical repair field of the service technician and give the relevant instructions. If necessary, also the service technician can see what the service specialist sees on his screen enabling him to derive a solution. In this way, video, audio, pictures and text files (e.g. pictures with remarks, sections of a hydraulic diagram) can be exchanged.

For the end user, the system also offers the same technical possibilities to clarify with the service advisor questions in the sector of application technology.



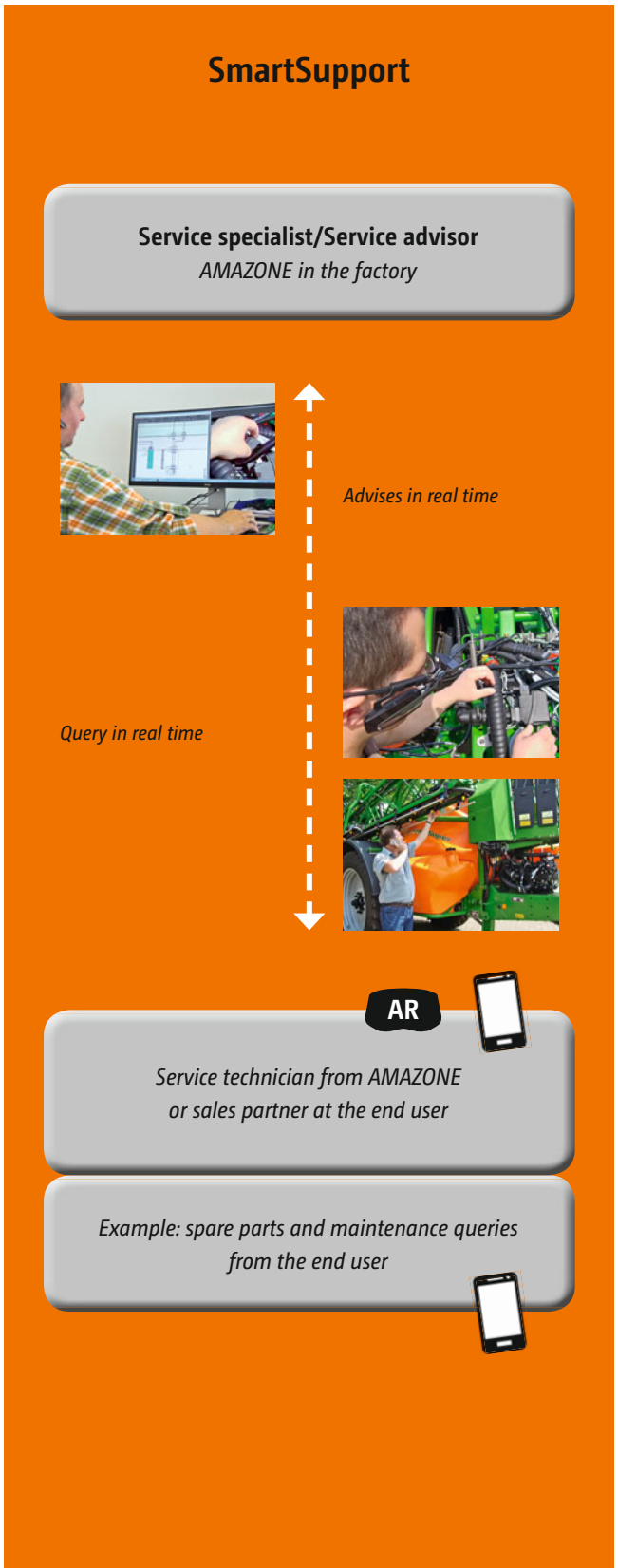
Service specialist during multimedia real time support



Service technician during multimedia real time support



End user during multimedia maintenance support in real time





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