

requirements

REDUCING TIME NEEDED
FOR NEW STAFF
TO BECOME
FULLY EFFICIENT

REDUCING TRAINING
COSTS W.R.T ASSEMBLY
OPERATIONS

REDUCING
MAINTENANCE TIME

REDUCING COSTS
RELATED TO ASSISTANCE
STAFF MISSIONS

INCREASING MANUAL USABILITY

solutions

TRAINING AND SUPPORT FOR
PRODUCTION STAFF:

- > Fast optimization of operation time
- > Elimination or reduction of errors
- > Personnel turnover without compromising production
- > Facilitating analysis of processing time

MAINTENANCE STAFF
TRAINING AND SUPPORT:

- > "Real time" education on maintenance operations
- > Local or "online" 3d manuals
- > Technical maintenance personnel remote support through augmented reality
- > Training and remote support with elimination of the cost and inconvenience of travel

products

R3D learning

The R3D Learning platform of R3D online combines e-learning with technologies related to virtual and augmented reality for training purposes in areas requiring a strong interaction with objects and environments.

**We do not move people.
We move information.**

The solution involves the rapid development of engaging interactive 3d applications for technical personnel training when the three-dimensional visual experience is essential. The platform allows the virtual reconstruction of devices and equipment for education of technical engineers.

In fact, R3D online allows to use three-dimensional animations in order to verify operation of mechanical devices, perform virtual maintenance, and watch technicians carry out, assembly and disassembly operations.

R3D vr

**Assembly / Disassembly / Maintenance
In Real Time 3D Virtual Reality.**

The R3D vr module allows to reproduce premises (e.g., workshops and plants, equipment and mechanical devices), show animated operation of various components and simulate the assembly disassembly of mechanical parts.

This tool efficiently supports users in issues such as:

- > Devices and equipment usage
- > Assembly / disassembly instructions
- > Product technical support and maintenance
- > Visual transfer of processes and manufacturing know-how

R3D ar

Augmented Reality

The **R3D ar** arcomponent uses augmented reality (ar) to combine objects belonging to the real world with computer-generated digital contents, unlike the virtual reality (vr) that handles only entirely digital environments.

R3d ar has two operating modes:

- > through camera and monitor
- > through augmented reality glasses

In the first case, a fixed camera shoots the working area and the augmented reality representation is displayed on a monitor in front or on one side of the scene.

In the second case the user is wearing special glasses allowing the superimposition of virtual objects directly on the operational area, possibly using a stereoscopic representation (3D).

R3D ar and augmented reality applied to assembly procedures

Facilitates operators wishing to follow assembly, maintenance and repair instructions for complex mechanical apparatuses using 3d animated models, in a much more stimulating, interactive and effective way than traditional methods.

Shows how to perform each stage of any given procedure, suggesting useful tools to be employed. The operator can be guided through the different stages of the assembly process during the production reducing both training requirements and operation time.

another dimension



R3D ar and Augmented Reality applied to maintenance and repair procedures

- > Allows to display of technical instructions and mechanical components (as well as their correct positioning) for real time assembly/disassembly procedures
- > Eliminates the need to use specific manuals and instructions, helping the maintainer to manage a specific apparatus, presenting 3d models and information directly superimposed on real objects
- > Allows interactive navigation of layers and structural information of the observed reality, such as electrical systems, plumbing systems, etc.
- > Allows the creation of portable solutions extremely useful not only for ordinary maintenance and repair operations, but also in the event of critical situations, in order to minimize human error as much as possible
- > Allows to avoid processing the whole "reality" perceived by the user thanks to the use of see-through glasses concentrate on the integration of the "augmented" content
- > Enhances the value of maintenance personnel-training providing "on-the-job" or "experiential education". Such education, usually involves prohibitive costs, whereas augmented reality allows to provide "problem-based" training, cutting expenses related to actual "on-site" training

R3D telear

R3D telear represents the solution to the problem of technical assistance requiring the dispatch of expert personnel at remote sites.

Through **R3D telear** expert technicians permanently working at a specific premise can provide remote support and instructions, to less experienced staff.

The expert technician receives on a monitor the video stream of the off-site operator captured by a fixed camera or by ar glasses, and is able to detect problems, issue voice instructions or move virtual objects, such as tools and equipment on the screen, guiding the actions of the less experienced technician.

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