

## **Technology for visualization of the production process**

Technology uses augmented reality for integrated solutions to support an intuitive, team oriented design of production systems.

It displays 3D objects in free space with contactless control. By displaying the current status of the workplace, it is possible to identify and assign the right information and get decision support.

The technology is used to track selected workplaces of intelligent production system, visualize performance and compare planned and actually achieved results with the possibility of interactive changes and individual approach of the employee to all relevant planning and production data. The system is designed for workshops on designing new and redesigning existing production systems.

The device supports minimum inputs in the range of composite video, VGA, HDMI. It also supports display of static and animated 3D objects. It dynamically changes the 3D spatial view. It uses a non-contact Natural User Interface based on gesturing the user's hands.

## **Modular reconfigurable intelligent robotic system technology**

The technology is used for simulation, visualization and control design of modular robotic systems. The system enables the design of virtual models of walking and wheeled robotic systems, the generation of collision shapes from 3D models and the setting of an accelerated run of the simulation.

## **Technology for the development of Digital Factory concept solutions**

Digital Factory solution development technology includes product modules, manufacturing processes and manufacturing systems. The modules can be used for design, simulation and emulation of robotic workplaces and systems, offline robot programming and simulation of human cooperation activities with machines.

The system enables the creation of complex virtual copies of production halls containing robotic systems, warehouses and autonomous logistics facilities. It also includes tools for analyzing and visualizing events from the virtual hall using OEE metrics.

## **Technology for simulation and emulation of mobile robotic systems**

The technology is used to design and test new concepts of intelligent, autonomous mobile robotic systems. The software platform allows you to connect a wide range of modules coexisting in an environment based on virtual reality.

The system enables simulation of industrial mobile robotic solutions, creation of virtual logistics networks and testing of control systems of automatic transport systems without physical equipment.

### **Technologies for testing samples by combined stress**

The technology uses a test device to measure samples with the possibility of combined compressive and tensile stresses. It is based on the drive of two hydraulic motors with appropriate hardware and software support with the possibility of a prescribed loading process - periodic, random, etc.

Another device is an ultra-precise portable 3D laser scanner for measuring samples.

Portable 3D laser scanner *Scanner* is used to measure samples, has a 7-axis measuring arm and its use brings greater flexibility and accuracy in capturing complex geometric details.

Applications of scanner use are: dimensional and surface analysis, quality control, reverse engineering.

Software support for the technology is used for processing and evaluation of scanned data, it is used for 3D measurements and also covers the entire spectrum of metrology, regardless of the device, brand or model.

### **3D laser scanning technology for spatial digitization**

The technology is used to support the digitization of objects and objects in the field of elements of production and logistics systems for industrial applications.

The laser scanner enables precise targeting of spatial information about scanned objects in a 3D display with high work productivity compared to conventional methods.

Another item of technology is software for building intelligent electronic and physical archives with the possibility of centralized physical and electronic storage, control and security of data.

**The portable 3D laser scanner** is designed for detailed measurements and acquires very three-dimensional scans of the surrounding environment in a very short time, specifically in several minutes. It is equipped with a touch screen for easy control and setting of scanning parameters. The result of the scan is a complete color network of 3D points, which digitally reproduces the current state. Thanks to its low weight, small size and simple touch control, it is possible to save up to 50% of scanning time compared to conventional scanning systems. It includes Software that is directly developed for a given 3D laser scanner.

### **Laser measuring system**

The technology uses a laser measurement system for intelligent quality control and dimensional measurement with a non-contact principle, while enabling accurate measurement of the dimensions of manufactured components. 3D data outputs can be easily imported and combined into software with a reverse engineering module.

**The handheld 3D scanner** allows you to quickly and efficiently capture complex scenes and large objects in a very short time. The device is flexible and mobile and it is therefore suitable for capturing complex, opaque, difficult to access or dynamic scenes. The scanner is easy to

use, perfect for use in forensics applications and other requirements for 3D measurement in industry.

The technology also includes scanned data processing software that uses tools for file management, data processing, visualization and measurement.

The [optical micrometer](#) is used for non-contact measurement of dimensions and positions of objects. It can be used for automated measurement of static and moving objects.

The [laser profiler](#) is used for non-contact measurement of dimensions. Applications for the use of the profilometer are as follows: production lines in various industries, from the food industry to mechanical engineering.