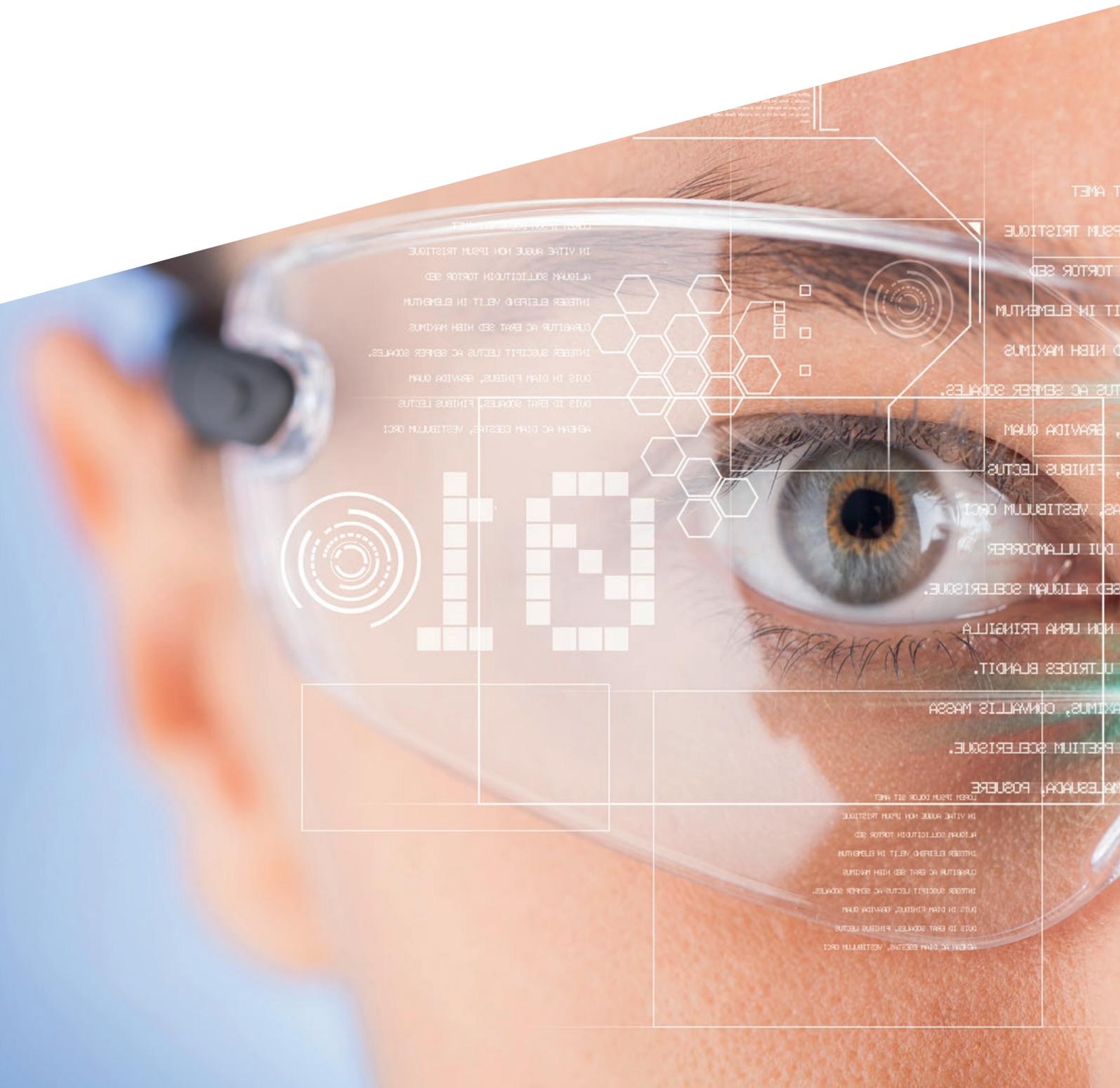**NTT DATA Business Solutions**
itelligence

Internet of Things in Practice — the itelligence Service Technician Scenario

Mixed Reality Taking Service and Maintenance Scenarios to Whole New Dimensions

The Internet of Things in Practice

Virtual Reality, Augmented Reality or Even Mixed Reality?

Human/Machine Interaction in Various Forms

Digitalization is causing the real and the virtual worlds to progressively merge together. Industry is in the grip of a radical transformation process. Companies need to face up to the new technical opportunities available and adapt their business models to remain efficient, flexible, and productive going forward.

Enhanced-reality technologies are acting as an interface between humans and machines. But a distinction must be made between augmented reality (AR) and virtual reality (VR), which are both enabled using glasses produced by various manufacturers.

Compared with pure virtual reality (VR) glasses, which fully immerse the user in the virtual reality world, augmented reality (AR) uses virtual elements to enhance normal reality. Highly-developed augmented reality, which enables the user to interact with these virtual elements, is supported by the Microsoft HoloLens, a mixed reality (MR) technology.

The Microsoft HoloLens is a standalone, fully functioning computer, which is able to position 3D objects accurately in a real environment and control them using gestures and voice commands. This gives rise to multiple new possibilities for areas of application such as planning, sales, production, logistics, and customer service.

Mixed reality

= (interactive) depiction of a 3D model in a real environment

## Process Optimization for Mixed Reality Service Activities

As a leading innovator, itelligence AG has used the **design thinking method** in a workshop setting to develop a service technician scenario that combines the possibilities of mixed reality with the SAP Cloud Platform (SCP).

This has brought about a one-of-a-kind process optimization for service and maintenance activities that enables full access to the SAP system via OData Services. The Microsoft HoloLens was chosen as the optimal technical basis because these mixed reality glasses can be connected with the SCP as a mobile device and thereby access services from the SAP ERP system.

To utilize the service technician scenario, itelligence AG uses a combination of a SAP S/4HANA system, the SCP, the Microsoft HoloLens, and the 3D engine. This allows IoT real-time data to be sent directly from the machine to the glasses. The SCP enables access to the S/4HANA system. This means that it is not necessary to use a traditional Virtual Private Network (VPN).

The key advantage when it comes to using other glasses is that only a fraction of the technology is newly developed. The foundations (architecture, data exchange with the S/4HANA system, and the 3D engine) can be retained with the vast majority of glasses. The components on the glasses, which act as a link, are the only thing that needs to be developed or adapted. This means that the cost of connecting additional glasses is extremely low.

The Technical Basics
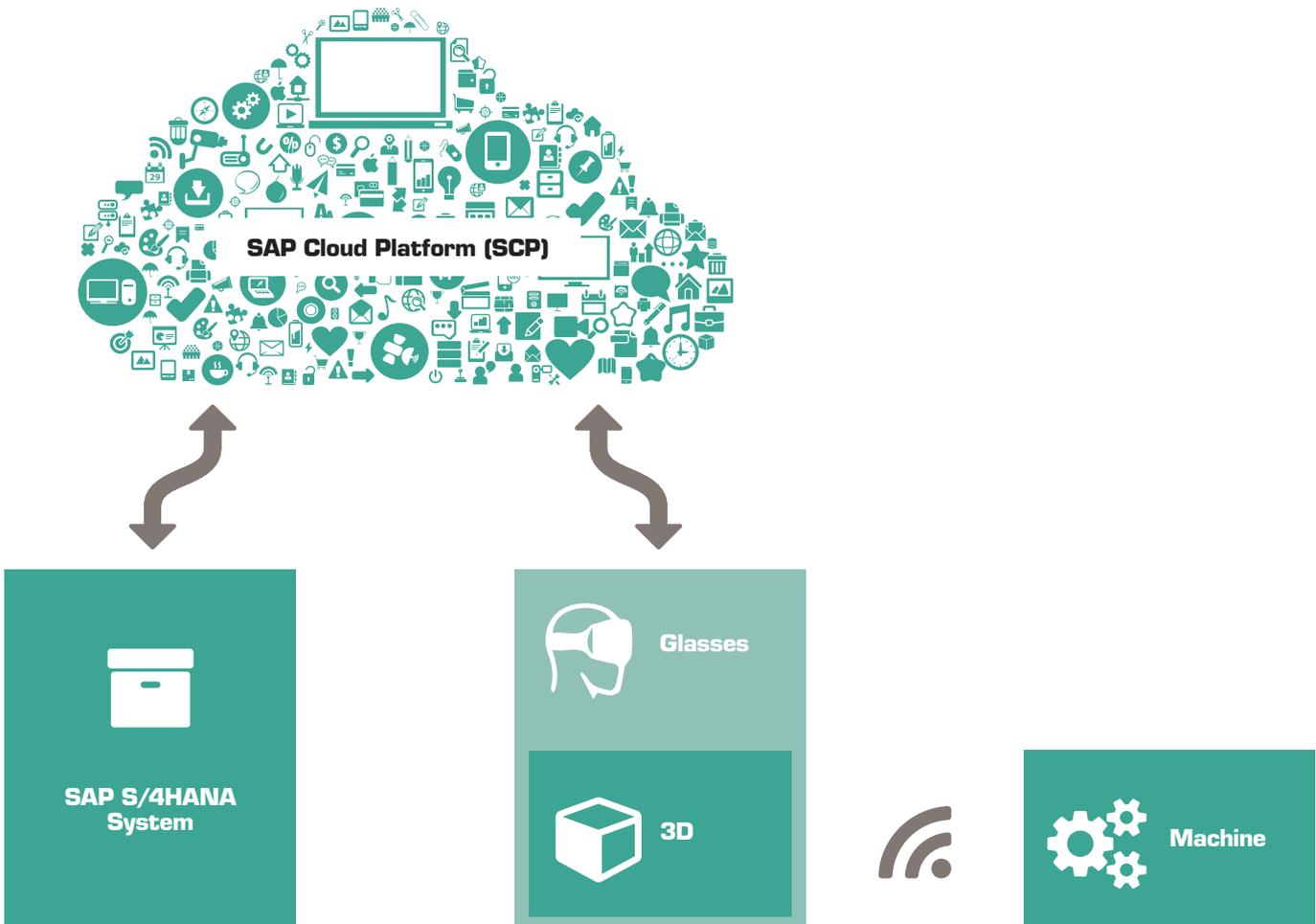
❝ Our scenario offers optimum conditions for service technicians because users have their hands free and are guided by the glasses, for example through installation instructions or remotely by a colleague. This process consistently uses any company data available, including 3D models of the equipment and systems.

Hans Rauwolf, Manager of Business Area Internet of Things (IoT), itelligence AG

The itelligence Service Technician Scenario

The Microsoft HoloLens provides ideal conditions for the itelligence scenario because these glasses feature sufficient performance and battery power in addition to the latest operating system. The itelligence app can thus be started directly on the HoloLens and operated via the cockpit. Aside from a virtual 3D model, service technicians are shown additional information that is displayed directly:

Real-time IoT:
Real-time data displayed via a wireless connection

Service log:
Past service requests

Maintenance:
Past-due work, e.g. maintenance activities

Actions:
- Retrieve document information records, images, and videos
- Return data
- Create data directly as a QM message
- Supply data for potential in-house developments

The scenario is controlled using eye contact, gestures, and voice commands, which means that both hands are kept free at all times. This scenario thus harbors considerable potential when it comes to optimizing service and maintenance processes. The possibility to load document information records from the SAP S/4HANA system means that construction drawings, video instructions, and images can be used.

There is also a means to communicate live with backoffice colleagues using video telephony in complex cases. A multitude of challenging service and maintenance activities can thus be performed reliably and in next to no time, requiring very few highly qualified professionals.

Your Advantages

- Intuitive operation — service technicians have both hands free
- Availability of IoT live data
- Full access to SAP
- Direct connection via the SAP Cloud Platform, no VPN required
- Language control thanks to the means to define commands
- Video and image display
- Depiction and manipulation of 3D models
- Video telephony option

Do you want to find out more? Then contact us at:

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