

Hololens 2

Mixed reality solution for operations support

Description of the system

Hololens 2 is a mixed reality headset from Microsoft. Combined with the Microsoft Guides software, it enables the implementation of assistance for production and maintenance operations:

- Development in Microsoft Guides of procedures/routines for support on a machine
- Step-by-step follow-up of procedures/routines with the Hololens headset using mixed reality (real-time superimposition of texts, videos, documents, images, 3D objects, etc.)

Combined with **Teams**, Hololens 2 can also be used to set up remote assistance via streaming, with augmented reality tools.

This solution allows the implementation of **educational activities** for the development of procedures/routines in augmented/mixed reality by level 3 students (BTS, IUT...). These activities are then tested and implemented on machines during maintenance and production activities.

Mixed reality improves learning outcomes and transforms teaching with new, affordable tools and devices that increase student engagement and enable them to go further. Teachers can make complex subjects such as anatomy, molecular chemistry, architectural design and others more approachable by enabling students to better understand basic concepts through spatial visualisation.

Automation has increased the efficiency of your machines, but today's manufacturing processes still rely on human labour. Increase your employees' productivity with visual mixed reality guidance.

Software :

Microsofts Guides, is a mixed reality application for **Microsoft HoloLens** that allows operators to familiarise themselves with tasks by providing holographic instructions. They can get the job done quickly with fewer errors. These instruction sheets are visually attached to the place where the work has to be done (images, videos, 3D holographic models...)

Microsoft Dynamics 365 Remote Assist is software that allows technicians to work with remote employees and resolve issues using Microsoft Teams or Dynamics 365 Remote Assist.

It reduces travel time and costs. Technicians can also capture and view images and videos of their organisation's assets and store them in Common Data Service.

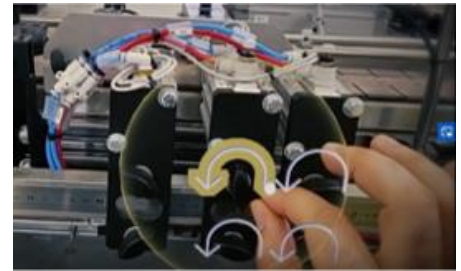
All professional training

Main Themes

Industrial Maintenance
Production Control
Electrical Engineering and Energy



Hololens 2 mixed reality headset



Hololens 2 headset, **Microsoft Guides** software and Operator Assistance Scenario on an ErmaSmart HoloLens2 machine (Ref. ERM: [HoloLens2](#))



Hololens 2 headset, **Microsoft Dynamics 365 Remote Assist** software, scenario with collaborators (Ref. ERM: [HoloLens2](#))

Highlights

- **Immersive:** Enlarged field of view and leading resolution
- **Ergonomic:** Knob adjustment system for extended use
- **Instinctive:** Touch, grab and move holograms naturally, instant connection using your eyes with Windows Hello
- **Autonomous:** Free movement without wires or external packs, wi-fi connection



Holograms scenario



Technical specifications

Screen :

- Optics: Transparent holographic lenses (waveguides)
- Resolution: 2k 3:2 light engines
- Holographic density: radiants > ; 2.5 k (light points per radian)
- Eye-based rendering: Display optimization for position 3D eyes

Sensors :

- Head tracking: 4 visible light cameras
- Eye tracking: 2 infrared cameras
- Depth: 1 MP time-of-flight (ToF) depth sensor
- IMU: Accelerometer, gyroscope, magnetometer
- Camera: 8 megapixel still images, 1080p30 video

Audio and voice :

- Microphone array: 5 channels
- Speakers: Integrated spatial audio

Human understanding :

- Hand tracking: Fully articulated two-handed model, direct handling
- Eye tracking: Real-time tracking
- Voice: Command and control on the device, natural language with Internet connectivity
- Windows Hello: Enterprise security with iris recognition

Understanding the environment :

- 6DoF tracking: Global positional tracking
- Spatial Mapping: Real-time environmental meshing
- Mixed reality capture: Hologram photos and videos and mixed physical environment

Computing and connectivity :

- SOC: Qualcomm Snapdragon 850 computing platform
- HPU: Second generation custom-built holographic processing unit
- Memory: 4 GB LPDDR4X system DRAM
- Storage: 64 GB UFS 2.1
- Wi-Fi: Wi-Fi 5 (802.11ac 2x2)
- Bluetooth: 5.0
- USB: Type-C

Adjustment :

- One size fits all
- Suitable for glasses
- Weight: 566 g

Software :

- Windows holographic operating system
- Microsoft Edge
- Dynamics 365 Remote Assist
- Dynamics 365 Guides
- 3D viewer

Power :

- Battery life: 2 to 3 hours of active use
- Charging: USB-PD for fast charging
- Cooling : Passive (no fan)
- Contains lithium batteries

References

MS//HoloLens2: Microsoft HoloLens 2 augmented reality headset.

- 1x HoloLens V2 Standard Edition device
- 1x Storage/transport case
- 1x Optional head strap
- 1x Microfiber cloth
- 1x Mains charger and USB-C cable

MS//Dynamics365RemoteAssist : Microsoft Dynamics 365 Remote Assist license (1 year subscription in case of a group purchase with a HoloLens 2)

MS//Dynamics365Guides : Microsoft Dynamics 365 Guides license, standard edition (1 year subscription)

INFO-RemoteAssist-4h-Remote : Support for Microsoft Dynamics 365 Remote Assist: Installation of the Remote Assist application on a HoloLens 2 headset, setting up user accounts, checking that the application is working properly, remote training (4 hours) on how to use the solution

INFO-Guides-8h-Remote: Support for Microsoft Dynamics 365 Guides: Creation and configuration of a PowerPlatform environment, Creation of a database, Setting up/creation of the Tenant, Initial configuration of the Guides parameters, Installation of the application on a HoloLens headset, Configuration of the "user" roles, Checking that the application is working properly, Remote training (8 hours) on the use of the solution

FO-Guides-2J-On-Site: On-site two-day action training to create a scenario on HoloLens 2 with Dynamics 365 Guides

HO010-01 : HoloLens 2 scenario on Polyprod: Liquid-solid and solid-liquid format changes in mxte reality

