



TSEP

Technical
Software
Engineering
Plazotta

Product Description TSEP Apollo (AR Solution)

TSEP Apollo is a solution for using AR and data glasses to visualize information from gauges or other data sources.

General:

The need to have information available always and everywhere has increased in recent years. With the introduction of smartphones, anyone can access information almost

anywhere, anytime. In industry in particular, a variety of scenarios can be identified in which the provision of information such as measured variables, circuit diagrams or documents can be useful. It is particularly interesting if this information can also be displayed directly in the field of view of the user. With the help of AR Technology, such concepts are thinkable and feasible.

Mobile testers can directly display their results in the field of vision of the measurement engineer and provide them with the current measurement data. Or, for maintenance work on a car control unit, for example, the assignment of a plug can be displayed in order to easily find the pin you are looking for and have the corresponding measurement parameters available for the measurement. The range of scenarios can be expanded here as desired.

Currently, the available AR glasses are not really suitable for the productive. Both the software stand, the price and the availability speak against a productive use. However, all manufacturers are working to bring the next generation on the market and so is expected in 2019 or 2020 at the latest, that here a new generation of AR glasses is presented.

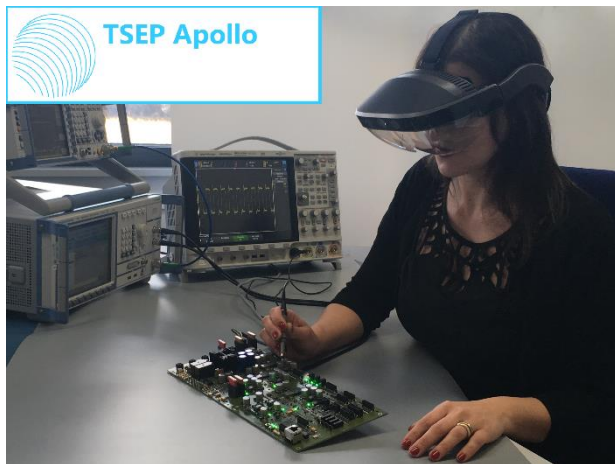
TSEP Apollo can not only work with AR glasses, but will also support data glasses like the Toshiba dynaEdge in the second quarter of 2019. Thus not only complex virtualizations with TSEP Apollo can be realized, also simple data visualizations are possible.

The customer response to the presentation of the first prototypes was correspondingly high, so that TSEP is now working on the first customer solutions with the product TSEP Apollo. In the area of measuring technology, TSEP Apollo can be used to display any measuring devices that display data, states or measured values for the user in the field of view via a data interface (SCPI interface, scripting interface). Application examples here are the measurements of parameters on complex DUTs or in an environment in which the device is not in the user's field of vision. The user guidance for complex calibration and configuration tasks can also be significantly simplified for the user with a user-guided AR application. The possible applications in the area of measurement technology are manifold here.

In the maintenance area, measurement parameters, circuit diagrams or pin assignments can be displayed directly during maintenance work. The selection can be made directly via the voice interface or, for example, via barcode or QR code recognition. Thus, all the necessary information is simply available to the service employee.

TSEP Apollo has been conceived and implemented as an open platform for the realization of customer applications.

Technical Realisation:



TSEP Apollo does not rely on a proprietary approach to the control of AR glasses, but uses the established standard OpenVR. Thus, all common AR glasses can be controlled. The customer can optimise TSEP Apollo for his preferred model.

TSEP Apollo uses the TSEP framework to interface with the measuring devices, data loggers or database and to process the data accordingly. In a 3D visualization

the Unreal Engine is used, all 2D visualizations are generated via QT. TSEP Apollo is completely written in C ++ and serves as a platform for the visualization of customer data.

Not only the visualization of the data is part of TSEP Apollo, also the simple operation was one of the requirements of the system. For 3D visualizations, the objects can be moved or edited directly within the visualization. Since TSEP Apollo is also intended for work, controlling the software using gestures is not always desirable. Therefore, a voice control was also realized. TSEP Apollo can be completely operated via its voice interface. Thus, the user can quickly and efficiently operate TSEP Apollo during the measurement. TSEP has emphasized in voice control that it runs directly on the TSEP Apollo hardware and therefore no internet connections are needed.

License models and prices:

TSEP Apollo is currently intended as a pure platform for the realization of customer projects. Thus, no prices or license models can be defined.