

## **Augmented Reality Hardware**

Augmented Reality (AR) and Mixed Reality (MR) applications, terminal devices with a complex composition of Hardware modules are necessary (Smartdevices).

In the following, different smart devices are listed. Applications can (of course) be used cross platform or can be streamed live on big screens and/or recorded on video (e.g. for fairs or other forms of presentation).

### **Smartphones and Tablets**

Smartphones and tablets are usually comprehensive in their producers featured with similar/comparable hardware components and have been used as platforms for AR-Apps for a long time, due to the wide spreading among the end user market. In addition to the ordinary smartphones and tablets, special solutions exist that have not yet arrived to the mainstream and contain additional hardware modules especially made for AR applications in contrast to the widely spread models.

#### **Advantages**

- Wide spread among end users
- Always present with end users
- Typical platform to spread apps that are used on daily basis
- Tablets (compared to Smartphones) have even more computing power and generally speaking a larger display

### **Smart Glasses and Headsets**

Smartglasses exist in various kinds of application with different request profiles and therefore also different hardware configurations. AR optimized Smart Glasses usually not only contain their own processor and the corresponding energy supply, but also complex hardware and software modules to recognize and analyse the real environment and the possibility of play visual and auditory data of digitally added impressions of the reality (looking through the glasses, the user can see the real environment together with virtual additions).

#### **Advantages**

- Especially made hardware profiles for MR and AR application branches
- Hands free interaction via gesture and voice recognition
- AR optimized hardware enables more complex AR software solutions (e.g. orientation in a room without image markers known as “inside-out-tracking“, etc.)
- Intuitive perception of the augmented reality via super imposed vision in the own field of view

### **Kiosk Systems / AR-Installations**

Kiosk-Systems and interactive AR-Installations have already established before the spreading of smartphones and mobile AR solutions for events, fairs and at the Point-of-Sale (POS), and are

usually based on the “Magical Mirror” principle. Solutions in this field can be realised on a basis of All-in-One devices (mostly large Android Tablets) or computer and laptop components. Laptops have more computing power and can be combined with various hardware and sensors (e.g. Kinect). Those solutions offer flexible configurations and replace the smartphone at the place of service.

### **Advantages**

- AR-Kiosk can be visually and functionally integrated into fair or sale appearances or at the POS
- The variety of possible elements and flexible configurations of the hardware and sensors enables made-to-measure AR-Solutions
- Users have low entrance barriers and do not have to carry around their own smartphone or download an app
- The quality of the graphic elements and the virtual additions via great computing power is often better than at mobile AR