

# TECHNICAL REPORT

**Virtual reality equipment and systems – Market, technology and standards requirements**



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**VIRTUAL REALITY EQUIPMENT AND SYSTEMS –  
MARKET, TECHNOLOGY AND STANDARDS REQUIREMENTS**

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The text of this Technical Report is based on the following documents:

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100/3484/DTR	100/3519/RVDTR

Full information on the voting for its approval can be found in the report on voting indicated in the above table.

The language used for the development of this Technical Report is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at [www.iec.ch/members\\_experts/refdocs](http://www.iec.ch/members_experts/refdocs). The main document types developed by IEC are described in greater detail at [www.iec.ch/standardsdev/publications](http://www.iec.ch/standardsdev/publications).

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## INTRODUCTION

Virtual reality (VR) is an interactive computer-generated experience, which allows the user to feel he is in a virtual world where he can interact in and control a virtual environment. The interaction between the user and the virtual world is mainly through auditory and visual stimuli, but it can also include other types of sensory feedback, such as haptic technology.

This Technical Report focuses on VR equipment and systems that are within the scope of TC 100. Firstly, the ecosystem of VR is described, based on a brief view of market trends and analysis of some typical use cases of VR equipment and systems. Then technologies used in VR equipment and systems are listed, in order to introduce a C-P-N-D (Content, Product, Network and Device) based VR system model. Finally, after studying the standardization activities of related standards developing organizations (SDOs), some suggestions are given, including potential standardization topics within the scope of TC 100.

# **VIRTUAL REALITY EQUIPMENT AND SYSTEMS – MARKET, TECHNOLOGY AND STANDARDS REQUIREMENTS**

## **1 Scope**

This document discusses the market of virtual reality (VR) and the technical domains pertaining to a VR system. This document provides clarity on how existing standards can be used and highlights further requirements for standards within the scope of TC 100.

## **2 Normative references**

There are no normative references in this document.

## **3 Terms and definitions**

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <http://www.iso.org/obp>

### **3.1**

#### **head mounted device**

##### **HMD**

type of computer display device or monitor which is worn on the head or is built in as part of a helmet

### **3.2**

#### **virtual reality**

##### **VR**

simulation of the physical presence of the user, which is primarily experienced through two of the five senses such as sight and sound, in an environment produced with the help of a computer, enabling the user to interact with this environment

## **4 Markets for VR equipment and systems**

### **4.1 Overview of VR markets**

In the 1980s, the arrival of stereoscopic '3D' games such as Virtuality and Virtual Boy drew attention to virtual display techniques. Even some films, like Lawnmower Man and Virtuosity, and books, such as Snow Crash, demonstrated the powerful potential of VR. But the technology at the time could not match people's imagination or their expectations; poor image quality, significant latency and high device prices made the first trials of VR products fail in the end.

Since 2014, there has been a second wave of VR technology, and, like most new technologies, VR has had a rocky – but predictable start.