



**Technical
Specification**

ISO/TS 16551

**Health informatics — Reference
model for virtual reality (VR)-based
clinical practice simulation**

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Foreword

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The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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This document was prepared by Technical Committee ISO/TC 215, *Health informatics*.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

Various virtual reality (VR)-based clinical practice simulations have been developed and used around the world and the market for these simulations has been steadily growing. A VR-based clinical practice simulation provides more realistic, life-like clinical training compared to other training methods such as books, models and images. Moreover, it is possible to create virtual patients customized for various scenarios while ensuring that patient safety and privacy are protected.

However, there are few standards available in the market for VR-based clinical simulation, which results in inefficiencies in developing virtual simulation.

A structured standard model for clinical practice simulator creates openness and interoperability, and it can save developers' time and resources.

Health informatics — Reference model for virtual reality (VR)-based clinical practice simulation

1 Scope

This document specifies a reference model for virtual reality (VR)-based clinical practice simulation.

This model includes components, relations, data element and types, and roles of the users.

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 terminology databases for use in standardization at the following addresses:

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

3.1

reference model

model that describes the general principles of interconnections in a system and the *architecture* (3.5) resulting from those principles

[SOURCE: ISO/IEC 14543-2-1:2006, 3.2.28, modified — “network architecture” was changed to “architecture”.]

3.2

virtual reality

VR

set of artificial conditions created by computer and dedicated electronic devices that simulate visual images and possibly other sensory information of a user’s surrounding with which the user is allowed to interact

[SOURCE: ISO/IEC 5927:2024, 3.1.11]

3.3

physician

health professional who has successfully completed the prescribed course of studies in medicine in a recognised medical school and who has met the qualifications for licensure in the practice of medicine set by the state or country in which they are practicing

[SOURCE: ISO/TR 12773-1:2009, 2.36]