Chapter 9
Implementing UN CRDP Through Human Interface Equivalencies (HIEs) With Semantic Interoperability:
Case Study – Use of the International Standard ISO/IEC 20016-1

Jake V. T. Knoppers
Canaglobe International Inc., Canada

Frederic Andres
https://orcid.org/0000-0002-5003-7579
National Insitute of Informatics, Japan

Sangeeta Dhamdhere
https://orcid.org/0000-0002-0037-5617
Modern College of Arts, Science, and Commerce, India

ABSTRACT

The introduction of the UN CRDP provided the first common international basis of legal and regulatory requirements for individual accessibility as a human right. The international ISO/IEC standard committee in the field of e-learning (i.e., ISO/IEC JTC1/SC36) responded by developing an international standard ISO/IEC 20016-1 to address semantic interoperability requirements of language accessibility, in the form of human interface equivalents (HIEs). The authors identify and summarize key aspects of this ISO/IEC 20016-1 standard including fundamental principles governing individual accessibility requirements, based on the UN CRDP doing so in an ITLET and commitment exchange context. The concept of semantic interoperability (in an

DOI: 10.4018/978-1-7998-4736-6.ch009

ITLET context) is defined and supports the same through the constructs of level and degrees of semantic equivalency. It is based on best practices of translation theory, applied linguistics, and existing applicable international standards, which already address various aspects of language accessibility requirements in a generic manner.

INTRODUCTION

This Chapter is based on international ISO/IEC standards. These are technical documents in the field of information technology. The text provided below is developed in the context of the intended readership of this publication. As such use of technical language has been minimized even though at times it is necessary to provide the precise text of definitions of key concepts and their assigned labels, a.k.a, "terms". This has been done.

Where words in this chapter represent a defined term in an international standard, this is indicated with the use of an asterisk "*". However, for all the terms* found in this Chapter, their definitions are found in the ISO/IEC 20016-1 (2014) standard which forms the primary basis for this Chapter[1].

Only for five key concepts have their definitions been included in this chapter. They are,

- Human Interface Equivalent (HIE)
- individual user
- semantic interoperability
- semantic interoperability equivalency level (SIEL)
- set of recorded information (SRI)

This Chapter, like text in ISO/IEC standards, also contains many abbreviations. It does based on those existing in the international ISO/IEC 20016-1 standard.

The ISO/IEC 20016-1 standard introduced the concept and definition of "*individual use*r" which is defined in the international ISO/IEC JTC1 20016-1 standard as:

individual user: *individual* (3.072) who has the right to require that the contents of any information exchange with a content *provider* (3.037), i.e., as a *set(s) of recorded information (SRIs)* (3.134) be provided *unambiguously* (3.144) at the appropriate level of unambiguity in the preferred *HIE* (3.067) to be made available

This Chapter is based on the premise that a key right here of any "individual user" is the set of rights of an individual as provided in the UN CRPD. These are especially important in a learning, education and training (LET) context for any indivudual in the role of a "student" in that individual's formative years.

Using Virtual Reality for Assessment and Rehabilitation of AD and MCI Patients: A Selective Overview

Giulia Binaghi (2022). *Assistive Technologies for Assessment and Recovery of Neurological Impairments (pp. 217-241).*
www.irma-international.org/chapter/using-virtual-reality-for-assessment-and-rehabilitation-of-ad-and-mci-patients/288137