TECHNICAL

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Document management — Portable document format — RichMedia annotations conforming to the ISO 10303-242 (STEP AP 242) specification

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

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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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 171, *Document management applications*, Subcommittee SC 2, *Document file formats, EDMS systems and authenticity of information*.

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

0.1   PDF: ISO 32000

ISO 32000-2 is able to embed 3D CAD models as either 3D or RichMedia annotations. 3D node, stream and view dictionaries can only reference data saved in either the ECMA-363, Universal 3D (U3D) file format or ISO 14739-1, Product Representation Compact (PRC) file format. This often requires the authoritative CAD data to be translated to either U3D or PRC solely to embed the data in a PDF file.

0.2   STEP: ISO 10303

STEP is a set of specifications and methods that enable the exchange and sharing of enterprise engineering information. It is an international standard (ISO 10303) with many *application protocols* (APs) that have a common core data definition. For example, AP 203, AP 214, and AP 242 use the same definitions for three-dimensional geometry, assembly data and basic product information. ISO 10303-42 and ISO 10303-46 are the key standard parts for geometry representation and visual presentation. Most 3D design, engineering and manufacturing software can read and/or write data stored in the STEP format.

The latest AP of STEP, AP 242, was developed to converge the AP 203 and AP 214 standards. STEP AP 242 contains all the functionality covered by the AP 203 and AP 214. In addition, it adds new functionality including 3D tessellated geometry, composites and 3D product and manufacturing information (PMI). The major technical impact of the STEP AP 242 standard covers the areas of:

— model based definition (MBD);

— long term archiving (LTA);

— engineering data exchange including composites;

— manufacturing data exchange including PMI.

0.3   Extending PDF to support STEP

The purpose of this document is to extend the PDF specification to allow RichMedia annotations to include 3D assets saved in the STEP AP 242 (ISO 10303-242) format.