# ISO 14739-1:2014-12 (E)

## Document management - 3D use of Product Representation Compact (PRC) format - Part 1: PRC 10001

## Contents

Page


Contents iii

Foreword ..... v

1 Scope ..... 1

2 Normative references ..... 1

3 Terms and definitions ..... 2

4 Document syntax conventions ..... 2
4.1 Conventions ..... 2
4.2 Example Structure ..... 2

5 PRC file concepts ..... 3
5.1 The PRC file ..... 3
5.2 Versioning ..... 5
5.3 Unique identifiers ..... 6
5.4 Current data values ..... 7
5.5 Userdata ..... 7
5.6 Units ..... 8
5.7 Tolerances ..... 8
5.8 Compressed file sections ..... 9
5.9 Compressed geometry ..... 9
5.10 Compressed tessellation ..... 9

6 PRC file contents ..... 9
6.1 Fileheader ..... 9
6.2 Filestructure ..... 11
6.3 PRC Schema ..... 13

7 PRC basic types ..... 13
7.1 General ..... 13
7.2 Uncompressed types ..... 14
7.3 Compressed types ..... 15

8 Base entities ..... 21
8.1 General ..... 21
8.2 Abstract root types ..... 21
8.3 Structure and assembly ..... 25
8.4 Miscellaneous Data ..... 45
8.5 Graphics ..... 56
8.6 Representation items ..... 72
8.7 Markup ..... 77
8.8 Tessellation ..... 83
8.9 Topology ..... 114
8.10 Curve ..... 150
8.11 Surface ..... 182
8.12 Mathematical Operator ..... 209

9 Schema Definition ..... 213

9.1 General ..... 213
9.2 Enumeration Of Schema Tokens ..... 214

ISO 14739-1:2014 9.3 Schema Processing ..... 216
9.4 Schema Requirements and Examples ..... 222

10 I/O Algorithms ..... 225
10.1 Getnumberofbitsusedtostoreunsignedinteger ..... 225
10.2 Makeportable32bitsunsigned ..... 225
10.3 Writebits ..... 225
10.4 Writestring ..... 226
10.5 Writefloatasbytes ..... 226
10.6 Writecharacterarray ..... 227
10.7 Writeshortarray ..... 228
10.8 Writecompressedintegerarray ..... 229
10.9 Writecompressedindicearray ..... 229
10.10 Writeunsignedinteger ..... 230
10.11 Writeinteger ..... 230
10.12 Writeintegerwithvariablebitnumber ..... 230
10.13 Writeunsignedintegerwithvariablebitnumber ..... 231
10.14 Writedoublewithvariablebitnumber ..... 231
10.15 Writenumberofbitsthenunsignedinteger ..... 232
10.16 Writecompressedentitytype ..... 232
10.17 Writedouble ..... 233
10.18 Procedure For Writedouble ..... 270

11 Tessellation Compression Support ..... 274
11.1 General ..... 274
11.2 Huffman Algorithm ..... 275
11.3 B ode ..... 277 asis Pseudoc

Annex A Example: Triangle ..... 281 (informative)

Annex B(informative) List of figures and tables ..... 283

Bibliography ..... 284