

ISO/IEC 13818-1:2018-03 (E)

Information technology - Generic coding of moving pictures and associated audio information - Part 1: Systems

Table of Contents

| | | |
|---------|--|-----|
| 1.1 | Scope..... | 1 |
| 1.2 | Normative references | 1 |
| 2.1 | Definitions..... | 4 |
| 2.2 | Symbols and abbreviations..... | 11 |
| 2.3 | Method of describing bit stream syntax | 13 |
| 2.4 | Transport stream bitstream requirements | 14 |
| 2.5 | Program stream bitstream requirements..... | 60 |
| 2.6 | Program and program element descriptors..... | 73 |
| 2.7 | Restrictions on the multiplexed stream semantics..... | 137 |
| 2.8 | Compatibility with ISO/IEC 11172..... | 141 |
| 2.9 | Registration of copyright identifiers..... | 141 |
| 2.10 | Registration of private data format..... | 142 |
| 2.11 | Carriage of ISO/IEC 14496 data | 142 |
| 2.12 | Carriage of metadata | 154 |
| 2.13 | Carriage of ISO 15938 data..... | 163 |
| 2.14 | Carriage of Rec. ITU-T H.264 ISO/IEC 14496-10 video..... | 163 |
| 2.15 | Carriage of ISO/IEC 14496-17 text streams | 179 |
| 2.16 | Carriage of auxiliary video streams..... | 181 |
| 2.17 | Carriage of HEVC..... | 181 |
| 2.18 | Carriage of green access units | 190 |
| 2.19 | Carriage of ISO/IEC 23008-3 MPEG-H 3D audio data | 192 |
| 2.20 | Carriage of Quality Access Units in MPEG-2 sections..... | 194 |
| Annex A | – CRC decoder model | 196 |
| A.1 | CRC decoder model | 196 |
| Annex B | – Digital storage medium command and control (DSM-CC)..... | 197 |
| B.1 | Introduction..... | 197 |
| B.2 | General elements..... | 198 |
| B.3 | Technical elements..... | 200 |
| Annex C | – Program-specific information..... | 206 |
| C.1 | Explanation of program-specific information in transport streams..... | 206 |
| C.2 | Introduction..... | 206 |
| C.3 | Functional mechanism | 206 |
| C.4 | The mapping of sections into transport stream packets..... | 207 |
| C.5 | Repetition rates and random access..... | 207 |
| C.6 | What is a program? | 208 |
| C.7 | Allocation of program_number..... | 208 |
| C.8 | Usage of PSI in a typical system..... | 208 |
| C.9 | The relationships of PSI structures..... | 209 |
| C.10 | Bandwidth utilization and signal acquisition time | 211 |
| Annex D | – Systems timing model and application implications of this Recommendation International Standard..... | 214 |
| D.1 | Introduction..... | 214 |
| Annex E | – Data transmission applications | 223 |
| E.1 | General considerations | 223 |
| E.2 | Suggestion..... | 223 |

| | |
|---|-----|
| Annex F – Graphics of syntax for this Recommendation International Standard | 224 |
| F.1 Introduction | 224 |
| Annex G – General information | 228 |
| G.1 General information | 228 |
| Annex H – Private data | 229 |
| H.1 Private data | 229 |
| Annex I – Systems conformance and real-time interface | 230 |
| I.1 Systems conformance and real-time interface | 230 |
| Annex J – Interfacing jitter-inducing networks to MPEG-2 decoders | 231 |
| J.1 Introduction | 231 |
| J.2 Network compliance models | 231 |
| J.3 Network specification for jitter smoothing | 232 |
| J.4 Example decoder implementations | 233 |
| Annex K – Splicing transport streams | 234 |
| K.1 Introduction | 234 |
| K.2 The different types of splicing point | 234 |
| K.3 Decoder behaviour on splices | 235 |
| Annex L – Registration procedure (see 2.9) | 237 |
| L.1 Procedure for the request of a Registered Identifier (RID) | 237 |
| L.2 Responsibilities of the Registration Authority | 237 |
| L.3 Responsibilities of parties requesting an RID | 237 |
| L.4 Appeal procedure for denied applications | 238 |
| Annex M – Registration application form (see 2.9) | 239 |
| M.1 Contact information of organization requesting a Registered Identifier (RID) | 239 |
| M.2 Statement of an intention to apply the assigned RID | 239 |
| M.3 Date of intended implementation of the RID | 239 |
| M.4 Authorized representative | 239 |
| M.5 For official use only of the Registration Authority | 239 |
| Annex N – Registration Authority Diagram of administration structure (see 2.9) | 240 |
| Annex O – Registration procedure (see 2.10) | 241 |
| O.1 Procedure for the request of an RID | 241 |
| O.2 Responsibilities of the Registration Authority | 241 |
| O.3 Contact information for the Registration Authority | 241 |
| O.4 Responsibilities of parties requesting an RID | 241 |
| O.5 Appeal procedure for denied applications | 241 |
| Annex P – Registration application form | 243 |
| P.1 Contact information of organization requesting an RID | 243 |
| P.2 Request for a specific RID | 243 |
| P.3 Short description of RID that is in use and date system that was implemented | 243 |
| P.4 Statement of an intention to apply the assigned RID | 243 |
| P.5 Date of intended implementation of the RID | 243 |
| P.6 Authorized representative | 243 |
| P.7 For official use of the Registration Authority | 243 |
| Annex Q – T-STD and P-STD buffer models for ISO/IEC 13818-7 ADTS | 244 |
| Q.1 Introduction | 244 |
| Q.2 Leak rate from transport buffer | 244 |
| Q.3 Buffer size | 244 |
| Q.4 Conclusion | 245 |
| Annex R – Carriage of ISO/IEC 14496 scenes in Rec. ITU-T H.222.0 ISO/IEC 13818-1 | 247 |
| R.1 Content access procedure for ISO/IEC 14496 program components within a program stream | 247 |
| R.2 Content access procedure for ISO/IEC 14496 program components within a transport stream | 248 |

| | |
|--|-----|
| Annex S – Carriage of JPEG 2000 part 1 video over MPEG-2 transport streams..... | 252 |
| S.1 Introduction..... | 252 |
| S.2 J2K video access unit, J2K video elementary stream, J2K video sequence and J2K still picture | 252 |
| S.3 Elementary stream header (elsm) and mapping to PES packets..... | 252 |
| S.4 J2K transport constraints..... | 254 |
| S.5 Interpretation of flags in adaptation and PES headers for J2K video elementary streams | 254 |
| S.6 T-STD extension for J2K video elementary streams..... | 255 |
| Annex T – MIME type for MPEG-2 transport streams | 257 |
| T.1 Introduction..... | 257 |
| T.2 MIME type and subtype..... | 257 |
| T.3 Security considerations | 258 |
| T.4 Parameters..... | 258 |
| Annex U – Carriage of timeline and external media information over MPEG-2 transport streams | 260 |
| U.1 Introduction..... | 260 |
| U.2 TEMI access unit and TEMI elementary stream..... | 261 |
| U.3 AF descriptors..... | 262 |
| Annex V – Transport of layered HEVC (MV-HEVC, SHVC)..... | 271 |
| V.1 Introduction..... | 271 |
| V.2 Terminology..... | 271 |
| V.3 Examples..... | 272 |
| Bibliography..... | 273 |