
**Information technology — High
efficiency coding and media delivery
in heterogeneous environments —**

**Part 10:
MPEG Media Transport Forward Error
Correction (FEC) codes**

*Technologies de l'information — Codage à haute efficacité et livraison
des médias dans des environnements hétérogènes —*

*Partie 10: Codes de correction d'erreur anticipée pour le transport
des médias MPEG*

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Foreword

ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) form the specialized system for worldwide standardization. National bodies that are members of ISO or IEC participate in the development of International Standards through technical committees established by the respective organization to deal with particular fields of technical activity. ISO and IEC technical committees collaborate in fields of mutual interest. Other international organizations, governmental and non-governmental, in liaison with ISO and IEC, also take part in the work. In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC 1.

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The committee responsible for this document is ISO/IEC JTC 1, *Information technology, SC 29, Coding of audio, picture, multimedia and hypermedia information*.

ISO/IEC 23008 consists of the following parts, under the general title *Information technology — High efficiency coding and media delivery in heterogeneous environments*:

- *Part 1: MPEG media transport (MMT)*
- *Part 2: High efficiency video coding (HEVC)*
- *Part 3: 3D Audio*
- *Part 10: MPEG Media Transport Forward Error Correction (FEC) codes*
- *Part 11: MPEG Media Transport Composition Information*

Introduction

This part of ISO/IEC 23008 specifies application level forward error correction (FEC) codes which can be used with application level-forward error correction (AL-FEC) framework of ISO/IEC 23008-1 MPEG Media Transport (MMT) to provide reliable delivery in IP network and non IP network environments that are prone to packet losses.

Information technology — High efficiency coding and media delivery in heterogeneous environments —

Part 10: MPEG Media Transport Forward Error Correction (FEC) codes

1 Scope

This part of ISO/IEC 23008 specifies application level forward error correction (FEC) codes which can be used with AL-FEC framework of ISO/IEC 23008-1 MPEG Media Transport to provide reliable delivery in IP network and non IP network environments that are prone to packet losses.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO/IEC 23008-1, *Information technology — High efficiency coding and media delivery in heterogeneous environments — Part 1: MPEG media transport (MMT)*

IETF RFC 5170, *Low Density Parity Check (LDPC) Staircase and Triangle Forward Error Correction (FEC) Schemes*, June 2008

IETF RFC 5510, *Reed-Solomon Forward Error Correction (FEC) Schemes*, April 2009

IETF RFC 6330, *RaptorQ Forward Error Correction Scheme for Object Delivery*, August 2011

SMPTE2022-1, *Forward Error Correction for Real-Time Video/Audio Transport Over IP Networks*

3 Terms, definitions, symbols, and abbreviated terms

For the purposes of this document, the following terms and definitions apply.

3.1 Terms and definitions

3.1.1

code rate

ratio between the number of source symbols and the number of encoding symbols

3.1.2

encoding symbol

unit of data generated by the encoding process

3.1.3

encoding symbol block

set of encoding symbols from the encoding process of a source symbol block

3.1.4

3FEC code

algorithm for encoding data such that the encoded data flow is resilient to data loss