INTERNATIONAL STANDARD

ISO/IEC 13818-9

First edition
1996-12-15

Information technology — Generic coding of moving pictures and associated audio information —

Part 9:
Extension for real time interface for systems decoders

Technologies de l'information — Codage générique des images animées et des informations sonores associées —

Partie 9: Extension pour interface temps réel pour systèmes décodeurs

Reference number
ISO/IEC 13818-9:1996(E)

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. Draft International Standards adopted by the joint technical committee are circulated to national bodies for voting. Publication as an International Standard requires approval by at least 75 % of the national bodies casting a vote.

International Standard ISO/IEC 13818-9 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 29, *Coding of audio, picture, multimedia and hypermedia information.*

ISO/IEC 13818 consists of the following parts, under the general title *Information technology — Generic coding of moving pictures and associated audio information*:

— *Part 1: Systems*

— *Part 2: Video*

— *Part 3: Audio*

— *Part 4: Compliance testing*

— *Part 6: Extensions for DSM-CC*

— *Part 9: Extension for real time interface for systems decoders*

ISO/IEC Copyright Office • Case postale 56 • CH-1211 Genève 20 • Switzerland

Printed in Switzerland

Introduction

Conformance for ISO/IEC 13818-1 Transport Streams is specified in terms of the normative specifications defined therein. These specifications include, among other requirements, a Transport Stream System Target Decoder (T-STD) (ISO/IEC 13818-1, 2.4.2) which specifies the behaviour of an idealized decoder when the stream is input to such a decoder. The T-STD model, and the associated verification, do not include information concerning the stream in real time.

This part of ISO/IEC 13818 specifies the timing of the real-time delivery of the bytes of Transport Stream packets at a Real Time Interface (RTI). Equipment which includes some type of interface for Transport Stream data, the timing characteristics of which are said to comply with the RTI specification, must be able to operate normally with any input which complies with the RTI specification. In no case, however, is a piece of equipment required to implement an RTI interface.

Information technology — Generic coding of moving pictures and associated audio information —

Part 9:
Extension for real time interface for systems decoders

1 Scope

This part of ISO/IEC 13818 does not change or supersede any of the requirements in ISO/IEC 13818-1. All Transport Streams, whether or not they are delivered in accordance with the RTI shall comply with ISO/IEC 13818-1. In particular, the accuracy requirement in ISO/IEC 13818-1 for PCRs in Transport Streams is not changed by the requirements of this part of ISO/IEC 13818. Compliance with this part of ISO/IEC 13818 is not required for compliance with ISO/IEC 13818-1.

This part of ISO/IEC 13818 does not address decoder requirements related to clock acquisition and slew rate constraints. For example, suppose a system utilizes the 27 MHz system clock to derive an ITU-R PAL chroma clock of 4.434 MHz, with a 0.1 Hz/sec slew rate limitation. With a source clock of 0.1 ppm accuracy, a decoder clock of 30 ppm accuracy, and straightforward phase-locked loop clock recovery circuitry, a decoder could require about 305,000 bits to prevent buffer under/overflow during frequency acquisition, even with low-jitter delivery. The actual number of bits a decoder requires for this purpose could be higher or lower, depending on the implementation.

Figure 1 provides a simplified view of the scope of this part of ISO/IEC 13818. This figure shows a Data Link Interface Adaptor, a Real-Time Interface Decoder (RTD), and the location of the Transport Stream which complies with the RTI Specification. It should be noted that the Data Link Interface Adaptor is responsible for removing any data link protocol or data structures, as well as any timing variations (i.e. jitter) in order to produce a compliant RTI Transport Stream.

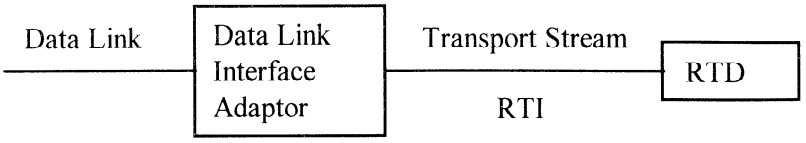

Figure 1 - Scope of RTI