INTERNATIONAL STANDARD

# ISO/IEC 17417

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# Information technology — Telecommunications and information exchange between systems — Short Distance Visible Light Communication (SDVLC)

*Technologies de l'information — Téléinformatique — Communication à courte distance utilisant la lumière visible (SDVLC)*

Reference number
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# Foreword

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ISO/IEC 17417 was prepared by Ecma International (as ECMA-397) and was adopted, under a special “fast-track procedure”, by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, in parallel with its approval by national bodies of ISO and IEC.

# Introduction

Short Distance Visible Light Communication (SDVLC) uses visible light LEDs for data communication. In most cases, LEDs with the primary purpose of illumination will take on the secondary purpose of acting as a digital data communication source; in other cases the LED's primary purpose will be data communication while the secondary purpose will be to communicate visible status to the user. With the extension of the application of LEDs from the primary purpose of illumination to the secondary purpose of data communication, VLC can be also applied to short range data communication.

With SDVLC, "what you see is what you send". One possible application of SDVLC is high speed mobile-to-mobile communication.

# Information technology — Telecommunications and information exchange between systems — Short Distance Visible Light Communication (SDVLC)

## 1 Scope

This International Standard specifies a phsical layer (PHY) and medium access control (MAC) for communication of up to 10 cm distance with an $f_m$ of 120 MHz using visual light with the wavelength between 380 nm and 780 nm.

In addition it specifies human-detectable brightness control that is independent of the modulation for the data transfer.

## 2 Conformance

Conformant implementations:

- have both a Transmitter and a Receiver;
- use 8B10B encoding and may use 2B4B encoding;
- use an $f_m$ of 120 MHz as specified in 8.3.

## 3 Normative references

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

ISO/IEC 18092:2004, *Information technology — Telecommunications and information exchange between systems — Near Field Communication — Interface and Protocol (NFCIP-1)*

ISO/IEC 7498-1, *Information technology — Open Systems Interconnection — Basic Reference Model: The Basic Model*

ISO/IEC 14165-251, *Information technology — Fibre Channel — Part 251: Framing and Signaling (FC-FS)*

ITU-T Z.100, *Specification and Description Language (SDL)*

RFC 791, *Internet Protocol — DARPA Internet Program — Protocol Specification*