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## Blockchain and distributed ledger technologies — Vocabulary

*Chaîne de blocs et technologies de registres distribués — Vocabulaire*

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## Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see [www.iso.org/directives](http://www.iso.org/directives)).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see [www.iso.org/patents](http://www.iso.org/patents)).

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see [www.iso.org/iso/foreword.html](http://www.iso.org/iso/foreword.html).

This document was prepared by Technical Committee ISO/TC 307, *Blockchain and distributed ledger technologies*.

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Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at [www.iso.org/members.html](http://www.iso.org/members.html).

## Introduction

This document defines basic terms relating to blockchain and distributed ledger technologies to clarify the meaning of terms and concepts used in other document within the domain of ISO/TC 307 standards.

Clear, consistent and coherent standards require clear, consistent and coherent terminology. This document follows rules and guidelines set by ISO/TC 37, *Language and terminology*, for terminology standards.

This document applies to all types of organizations (e.g., commercial enterprises, government agencies, not-for-profit organizations). The target audience includes but is not limited to academics, solution architects, customers, users, tool developers, regulators, auditors and standards development organizations.

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# Blockchain and distributed ledger technologies — Vocabulary

## 1 Scope

This document provides fundamental terminology for blockchain and distributed ledger technologies.

## 2 Normative references

There are no normative references in this document.

## 3 Terms and definitions

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <http://www.electropedia.org/>

### 3.1

#### asset

anything that has value to a stakeholder

[SOURCE: ISO/TS 19299:2015, 3.3, modified — Note 1 to entry has been removed.]

### 3.2

#### block

structured data comprising *block data* (3.3) and a *block header* (3.4)

### 3.3

#### block data

structured data comprising zero or more *transaction records* (3.79) or references to *transaction records* (3.79)

### 3.4

#### block header

structured data that includes a *cryptographic link* (3.16) to the previous *block* (3.2) unless there is no previous *block* (3.2)

Note 1 to entry: A block header can also contain a *timestamp* (3.75), a *nonce* (3.51), and other *DLT platform* (3.29) specific data, including a *hash value* (3.39) of corresponding *transaction records* (3.79).

### 3.5

#### block reward

reward given to *miners* (3.48) or *validators* (3.83) after a *block* (3.2) is *confirmed* (3.8) in a *blockchain system* (3.7)

Note 1 to entry: A reward can be in the form of a *token* (3.76) or *cryptocurrency* (3.14).

**3.6  
blockchain**

*distributed ledger* (3.22) with *confirmed blocks* (3.9) organized in an append-only, sequential chain using *cryptographic links* (3.16)

Note 1 to entry: Blockchains are designed to be tamper resistant and to create final, definitive and *immutable* (3.40) *ledger records* (3.44).

**3.7  
blockchain system**

system that implements a *blockchain* (3.6)

Note 1 to entry: A blockchain system is a type of *DLT system* (3.30).

**3.8  
confirmed**

accepted by *consensus* (3.11) for inclusion in a *distributed ledger* (3.22)

**3.9  
confirmed block**

*block* (3.2) that has been *confirmed* (3.8)

**3.10  
confirmed transaction**

*transaction* (3.77) that has been *confirmed* (3.8)

**3.11  
consensus**

agreement among *DLT nodes* (3.27) that 1) a *transaction* (3.77) is *validated* (3.81) and 2) that the *distributed ledger* (3.22) contains a consistent set and ordering of *validated* (3.81) *transactions* (3.77)

Note 1 to entry: Consensus does not necessarily mean that all *DLT nodes* (3.27) agree.

Note 2 to entry: The details regarding consensus differ among *DLT* (3.23) designs and this is a distinguishing characteristic between one design and another.

**3.12  
consensus mechanism**

rules and procedures by which *consensus* (3.11) is reached

**3.13  
crypto-asset**

*digital asset* (3.20) implemented using cryptographic techniques

**3.14  
cryptocurrency**

*crypto-asset* (3.13) designed to work as a medium of value exchange

Note 1 to entry: Cryptocurrency involves the use of decentralized control and *cryptography* (3.17) to secure *transactions* (3.77), control the creation of additional *assets* (3.1), and verify the transfer of *assets* (3.1).

**3.15  
cryptographic hash function**

function mapping binary strings of arbitrary length to binary strings of fixed length, such that it is computationally costly to find for a given output an input that maps to the output, it is computationally infeasible to find for a given input a second input that maps to the same output, and it is computationally infeasible to find any two distinct inputs that map to the same output

Note 1 to entry: Computational feasibility depends on the specific security requirements and environment.

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**3.16****cryptographic link**

reference, constructed using a *cryptographic hash function* (3.15) technique, that points to data

Note 1 to entry: A cryptographic link is used in the *block header* (3.4) to reference the previous *block* (3.2) in order to create the append-only, sequential chain that forms a *blockchain* (3.6).

**3.17****cryptography**

discipline that embodies the principles, means, and methods for the transformation of data in order to hide their semantic content, prevent their unauthorized use, or prevent their undetected modification

[SOURCE: ISO 7498-2:1989, 3.3.20, modified — the NOTE has been removed.]

**3.18****decentralized application****DApp**

application that runs on a *decentralized system* (3.19)

**3.19****decentralized system**

*distributed system* (3.32) wherein control is distributed among the persons or organizations participating in the operation of the system

Note 1 to entry: In a decentralized system, the distribution of control among persons or organizations participating in the system is determined by the system's design.

**3.20****digital asset**

*asset* (3.1) that exists only in digital form or which is the digital representation of another *asset* (3.1)

**3.21****digital signature**

data which, when appended to a digital object, enable the user of the digital object to authenticate its origin and integrity

[SOURCE: ISO 14641:2018, 3.17, modified — "digital document" has been replaced with "digital object".]

**3.22****distributed ledger**

*ledger* (3.43) that is shared across a set of *DLT nodes* (3.27) and synchronized between the DLT nodes using a *consensus mechanism* (3.12)

Note 1 to entry: A distributed ledger is designed to be tamper resistant, append-only and *immutable* (3.40) containing *confirmed* (3.8) and *validated* (3.81) *transactions* (3.77).

**3.23****DLT**

distributed ledger technology

technology that enables the operation and use of *distributed ledgers* (3.22)

**3.24****DLT account**

distributed ledger technology account

representation of an *entity* (3.34) participating in a *transaction* (3.77)

Note 1 to entry: A *smart contract* (3.72), *digital asset* (3.20), or one or more *private keys* (3.62), for example, can be associated with a DLT account.