

ETSI GR PDL 017 V1.1.1 (2024-07)



Permissioned Distributed Ledger (PDL); Application of PDL to Amended Regulation 910/2014 (eIDAS 2) Qualified Trust Services

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Foreword

This Group Report (GR) has been produced by ETSI Industry Specification Group (ISG) Permissioned Distributed Ledger (PDL).

Modal verbs terminology

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Introduction

Distributed ledgers have become the intrinsic foundation of secure decentralized transaction-based applications, including (but not limited to) decentralized cryptocurrencies. They are often referred to as blockchain, given the use of cryptographic techniques to link a growing list of blocks (records). While blockchain is a specific implementation of a distributed ledger, the industry has conformed with use of a more generic term:

- Distributed Ledger Technology (DLT).

Distributed ledgers can be considered as permissioned or permission-less, referring to the requirements for a node to be approved to validate transactions and record them on the ledger.

The present document is one of a series of reports and specifications developed by the ETSI Industry Specification Group on Permissioned Distributed Ledger (ISG PDL) (see <https://www.etsi.org/technologies/permissioned-distributed-ledgers>).

Regulation (EU) 2024/1183 amending Regulation (EU) No 910/2014 [i.12] as regards establishing a framework for a European Digital Identity [i.1], commonly referred to as eIDAS 2, provides a framework for use of digital signatures and electronic identities based on an EU Digital Identity Wallet for a pan-European infrastructure supporting electronic identities, authentication and signatures. The amended regulation includes requirements for an commercially provided infrastructure of "trust services" which supports the European Digital Identity Framework. One of the supporting trust services identified in eIDAS 2 [i.1] is an electronic ledger which may be provided by a single body, or distributed access several providers which are permissioned to provide a distributed ledger in the form of a Permissioned Distributed Ledger.

A set of reports and specification primarily at supporting digital signatures under the current Regulation (EU) No 910/2014 [i.12] have been developed by ETSI Technical Committee on electronic Signatures and Trust Infrastructure (see [ETSI TC ESI activities](#)). ETSI TC ESI is currently developing a further set of specifications in support of [Regulation \(EU\) 2024/1183](#) [i.1] the amending Regulation (EU) No 910/2014 including support for the EU Digital Identity Wallet and additional trust services such as electronic ledgers (see [ETSI portal TC ESI](#)). eIDAS 2 defines specific requirements for "Qualified Trust Service" which are overseen by national regulatory bodies and are given a form of legal presumption.

The present document considers the application of PDL to qualified trust services under [Regulation \(EU\) 2024/1183](#) amending Regulation (EU) No 910/2014 (eIDAS 2) [i.1].

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1 Scope

The present document describes the features of a PDL to be applicable as a qualified electronic ledger and in support for eIDAS 2 [i.1] trust services. The present document analyses the properties that a PDL can have to be an enabler for eIDAS 2 [i.1] regulation for electronic identification, authentication and signatures, and also for using eIDAS 2 [i.1] in other areas of the Digital Economy.

2 References

2.1 Normative references

Normative references are not applicable in the present document.

2.2 Informative references

References are either specific (identified by date of publication and/or edition number or version number) or non-specific. For specific references, only the cited version applies. For non-specific references, the latest version of the referenced document (including any amendments) applies.

NOTE: While any hyperlinks included in this clause were valid at the time of publication, ETSI cannot guarantee their long term validity.

The following referenced documents are not necessary for the application of the present document but they assist the user with regard to a particular subject area.

- [i.1] <https://standards.iteh.ai/catalog/standards/etsi/1/c363b-2d61-40ca-9c20-922e3e039f22/etsi-gr-pdl-017-v1-1-1-2024-07> [Regulation \(EU\) 2024/1183](https://eur-lex.europa.eu/eli/reg/2024/1183/oj) of the European Parliament and of the Council of 11 April 2024 amending Regulation (EU) No 910/2014 as regards establishing the European Digital Identity Framework (eIDAS 2).
- [i.2] ISO/TS 23635:2022: "Blockchain and distributed ledger technologies Guidelines for governance".
- [i.3] ETSI EN 319 422: "Electronic Signatures and Infrastructures (ESI); Time-stamping protocol and time-stamp token profiles".
- [i.4] ETSI TS 119 102-2: "Electronic Signatures and Infrastructures (ESI); Procedures for Creation and Validation of AdES Digital Signatures; Part 2: Signature Validation Report".
- [i.5] ETSI EN 319 411-1: "Electronic Signatures and Trust Infrastructures (ESI); Policy and security requirements for Trust Service Providers issuing certificates; Part 1: General requirements".
- [i.6] ETSI DTS/ESI-0019472-1 Work item on "Electronic Signatures and Trust Infrastructures (ESI); Profiles for Electronic Attestations of Attributes; Part 1: General requirements".
- [i.7] ETSI EN 319 522 (all parts): "Electronic Signatures and Infrastructures (ESI); Electronic Registered Delivery Services".
- [i.8] ETSI GS PDL 012: "Permissioned Distributed Ledger (PDL); Reference Architecture".
- [i.9] ETSI GS PDL 015: "Permissioned Distributed Ledger (PDL); Reputation management".
- [i.10] [Directive \(EU\) 2022/2555](https://eur-lex.europa.eu/eli/dir/2022/2555/oj) of the European Parliament and of the Council of 14 December 2022 on measures for a high common level of cybersecurity across the Union, amending Regulation (EU) No 910/2014 and Directive (EU) 2018/1972, and repealing Directive (EU) 2016/1148 (NIS 2 Directive).
- [i.11] ETSI EN 319 401: "Electronic Signatures and Trust Infrastructures (ESI); General Policy Requirements for Trust Service Providers".