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ETSI GR ISG-PDL 006 v0.0.2 (2020-4)

**Group REPORT**

PDL INTER-LEDGER INTEROPERABILITY

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Reference

PDL-006 INTER-LEDGER INTEROPERABILITY

Keywords

Security, Conformity, Trust, Interoperability

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# Foreword

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# Modal verbs terminology

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# Executive summary

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# Introduction

*[ETSI Drafting Rules](https://portal.etsi.org/Services/editHelp!/Howtostart/ETSIDraftingRules.aspx)* [(](https://portal.etsi.org/Services/editHelp!/Howtostart/ETSIDraftingRules.aspx)*[EDRs)](https://portal.etsi.org/Services/editHelp!/Howtostart/ETSIDraftingRules.aspx),*

Enabling communication between different DLT is a challenge that can be resolved in favour of scalability if interoperability is implemented with security, however the architecture, taxonomy and ontology of the DLT landscape is certainly very diverse and with a variety of technical issues and challenges that a lot of time and efforts are being invested in deploying approaches and solutions. This is in favour of the ecosystem as a whole. Priorities for multi-stakeholders are based on interoperability and cross-chain solutions for connecting the new era of internet.

The baseline for this document is aligned with the definition of ISO/IEC 17788:2014 “information Technology -Cloud Computing-Overview and vocabulary” whereby Interoperability is “the ability of two or more systems or applications to exchange information and to mutually use the information that has been exchanged.

The European Interoperability Framework (EIF) from the European Commission (EC) had first version adopted in 2010 between the new EU policies in the field of information technology with strong focus on openness and information management, data portability, interoperability governance, and integrated service delivery. Furthermore, NIFO (National Interoperability Framework Observatory) produce a variety of documents with recommendations for policy makers, researchers, and business stakeholders with the latest developments on digital government and interoperability across Europe. On the other hand, the European Blockchain Services Infrastructure (EBSI) is officially established with which inter-ledger interoperability will be a key ingredient for scalable business and connecting networks for cross-border communications. Actually, four use cases are applying on the top of EBSI and one of them is related to trusted data sharing which is a value for considering interoperability as a priority within the deployment of the European Digital Single Market.

# 1 Scope

This document will describe the key elements of interoperability to exchange information between different ledgers and to mutually use the information that has been exchanged.

# 2 References

## 2.1 Normative references

Normative references are not applicable in the present document.

## 2.2 Informative references

European Blockchain Services Infrastructure (EBSI)

<https://ec.europa.eu/cefdigital/wiki/display/CEFDIGITAL/EBSI>

European Interoperability Framework (EIF)

“Full Text: <https://ec.europa.eu/isa2/sites/isa/files/eif_brochure_final.pdf>

# 3 Definition of terms, symbols and abbreviations

## 3.1 Terms

## 3.2 Symbols

## 3.3 Abbreviations

DLT. Distributed Ledger Technology

EBSI: European Blockchain Service Infrastructure

EIF: European Interoperability Framework

EC: European Commission

NIFO: National Interoperability Framework Observatory

# 4 Introduction to inter-ledger scenarios:

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EXAMPLE OF NON INTER-LEDGER INTEROPERABILITY

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EXAMPLE ONE OF INER-LEDGER INTEROPERABILITY



EXAMPLE TWO OF INTER-LEDGER INTEROPERABILITY

5. Facets of Interoperability

6. Trust-Anchoring:

7. Security considerations and incident management responsiveness.

8. Interoperability Approaches