

ISO/TR 6277:2025-05 (E)

Blockchain and distributed ledger technologies (DLT) - Data flow models for blockchain and DLT use cases

Contents

Page

- Foreword..... v
- Introductionvi
- 1 Scope..... 1
- 2 Normative references..... 1
- 3 Terms and definitions..... 1
- 4 Abbreviated terms..... 3
- 5 Overview of data flow for DLT..... 3
 - 5.1 General..... 3
 - 5.2 Categories of data flows..... 4
 - 5.3 Data categories..... 4
 - 5.3.1 General..... 4
 - 5.3.2 Data categories from data storage perspective..... 4
 - 5.3.3 Data categories from data sources perspective..... 5
 - 5.3.4 Identifier data categories..... 6
 - 5.3.5 Other data categories..... 6
 - 5.4 Roles from the perspective of data flow..... 7
 - 5.4.1 DLT stakeholder roles and stakeholder data..... 7
 - 5.4.2 Roles/sub-roles and their activities related to data flow..... 7
 - 5.5 Considerations related to data flow..... 8
 - 5.5.1 Data security..... 8
 - 5.5.2 Privacy protection..... 8
 - 5.5.3 Governance of data..... 9
 - 5.5.4 Interoperability..... 9
- 6 Intra-system data flow..... 9
 - 6.1 Overview..... 9
 - 6.2 Data flow during DLT transaction procedure..... 10
 - 6.2.1 Preliminary stage..... 10
 - 6.2.2 Full life cycle data flow in one transaction..... 11
 - 6.2.3 Overview of data process within DLT system..... 12
- 7 Inter-system data flow..... 13
 - 7.1 Data flows between DLT system and DLT system..... 13
 - 7.1.1 Outline..... 13
 - 7.1.2 Transaction submission..... 14
 - 7.1.3 Transaction execution with eventual consistency..... 14
 - 7.1.4 Result feedback..... 14
 - 7.1.5 Overview of data process between DLT system and DLT system..... 14
 - 7.2 Data flows between DLT system and non-DLT system..... 15
 - 7.3 Data flow of DID..... 15
- 8 Data flow analysis in DLT use cases..... 16
 - 8.1 Overview..... 16
 - 8.2 Template development..... 16
 - 8.2.1 DLT data flow categories between components and interfaces..... 16
 - 8.2.2 DLT use case categories..... 17
 - 8.2.3 Data flow description in DLT use cases..... 21
 - 8.3 Use case: Insurance service for fish farming..... 23
 - 8.3.1 Abstract..... 23
 - 8.3.2 Use case categories..... 23

8.3.3	Use case summary	24
8.3.4	Data flow considerations	24
8.3.5	Visualizations.....	25
8.4	Use case: International trade platform.....	30
8.4.1	Abstract.....	30
8.4.2	Use case categories.....	30
8.4.3	Use case summary	31
8.4.4	Data flow considerations	32
8.4.5	Visualizations.....	32
8.5	Use case: Peer-to-peer metaverse traveller network.....	37
8.5.1	Abstract.....	37
8.5.2	Use case categories.....	38
8.5.3	Use case summary	39
8.5.4	Data flow considerations	39
8.5.5	Visualizations.....	40
Annex A (informative) Use case for data flow analysis — Example.....		46
Bibliography.....		49