



REPUBLIC OF SLOVENIA
MINISTRY OF ECONOMIC DEVELOPMENT
AND TECHNOLOGY



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UNECE, UN/CEFACT

White Paper

Technical Applications of Blockchain to UN/CEFACT deliverables

Key topics:

- Leveraging existing semantic standards CCL (Core component library)
- Architecture reference model to enable mapping of UN/CEFACT semantic standards to newer technologies, such as blockchain, IoT
- Focus areas: supply chain, e-commerce, transport (bill of lading) and trade facilitation, automotive industries

Report

Impact of COVID-19 outbreak on international trade and logistics and the ways advanced technologies can help overcome such disruptions

Results indicate the following areas of focus:

- ***Digital platforms:*** better implementation and utilization of digital platforms which enhance supply chain and logistics information exchange and support business continuity and innovation.
- ***Digital products:*** development and implementation of digital products and use cases which are interoperable across borders to facilitate new needs arising due to COVID-19.
- ***Interoperability:*** strong engagement of the cross-border interoperable ecosystem in creating, reviewing and adopting standards and policy frameworks which would enable the revitalization of global social and economic processes.

UN/CEFACT CHAIN White paper

– crossborder interoperable blockchain infrastructure

(1) *taking into consideration existing standards* for implementation of cross border Blockchain infrastructure in an interoperable manner, regarding

(i) architecture reference model,

(ii) process modelling for Smart contracts to test and implement use cases

(iii) Blockchain application data needs

(2) *based on analysis* of

(a) Legal interoperability

(b) Governance interoperability

(c) Technical interoperability

	»Relay« or Multi- DLT interoperability	DLT Systems Interoperability	Consensus Interoperability
1. Legal Interoperability	Legal frameworks, authentication and authorization identity, ...		
2. Governance Interoperability	Governance models, commercial model, on-chain, of-chain, policies, consensus mechanisms		
3. Technical Interoperability	Data standardization, token transfer, certificates, smart contracts, containerization, consensus mechanisms, ...		
4. Quantum Key Distribution	Using Quantum Key Distribution as basis for establishing secure DLT infrastructure, ...		
5. Use Cases	Use cases illustrating interoperability along legal, governance and technical areas		

UN/CEFACT project UNECE Chain working groups preparing
Whitepaper on strategy for development and implementation of interoperable global
blockchain technology infrastructure

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Working groups

- (1) *WG 1: Legal Interoperability***: analysed through (a) applicable laws, (b) tamper evidence, resistance, immutability, (c) privacy, (d) governance, (e) digital signatures, (f) smart contracts and multichain transactions
- (2) *WG 2: Governance Interoperability***: analysed through (a) Policies (data privacy, trusted identity, infrastructure security, law enhancement mechanisms and compliance monitoring), (b) Governance models (permissioned/permissionless), (c) Commercial models (like cooperatives), (d) On-chain/off chain solutions

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(3) WG 3: Technical Interoperability: analysed through (a) on-chain/off chain solutions, applicable laws, (b) data standardization (c) fundamental principles of interoperable data sharing, (d) containerization, (e) consensus mechanisms

(4) WG 4: Quantum Key Distribution: analysed through (a) Quantum Computing impact on Cryptography, (b) Quantum Resistant Cryptography, (c) Post quantum Algorithms, (d) Impact of Quantum Computing on blockchain/DLT (together with its possible implementation in DLT and benefits of Quantum Encryption in DLT interoperability), (e) Transnational Quantum Resilient Communication

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(5) WG 5: Use cases: analysed through three dimensions of interoperability: legal, governance and technical interoperability

– three groups of use cases:

- (a) Energy efficiency
- (b) Value chain/Supply Chain
- (c) Digital identity

We invite you to the Workshop „**Towards Global Interoperable Blockchain Infrastructure**“, on **09/07/2020**, on which the first version of Whitepaper will be presented by project team





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