

Blockchain White Paper

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Project Details

Domain	eData Management Domain
Project Identifier	P1049
Bureau Decision #	#1704007
Project Proposal Status	Official
Project Page	Blockchain White Paper
Supporting VC	Tahseen Ahmad Khan
Project Lead	Virginia Cram-Martos
HoD Support	N/A
Status	Completed
Version	5.0
Submitted date	2017-04-20
Draft Development Completion	2018-03-01
Publication Date	2019-03-18

Project Purpose

Blockchain is a relatively new technology; The first concept paper was published in 2008 by Satoshi Nakamoto for use in developing crypto-currencies (a crypto currency exists only on the net and has no government backing) and the proposal for smart contracts based on Blockchain was made in 2013 by Vitalik Buterin. Today, there are many different Blockchains and variations of Blockchain technology. In addition, there is a large amount of ongoing research on how to further, develop and improve the ability of this technology to be used for various purposes. As a result, it is reasonable to expect that even more Blockchain variations will come into existence during the coming years. Some Blockchain and blockchain-based technologies are called "Distributed Ledgers" (DL). There are also forms of Blockchain that are public/open networks and others that are private/permissioned networks. For the purposes of this project, unless otherwise indicated, references to "Blockchains" are considered to cover "Distributed Ledgers" as well as both public and private network versions.

Blockchains are based on an innovative use of cryptography and have attracted a lot of attention due to their characteristics which reduce the need for trusted third parties and intermediaries. These characteristics include the:

- Creation of data records that are permanent, i.e. cannot be changed or deleted
- Ability to identify the time and origin of every entry in the Blockchain
- Access by all participants to all data in the Blockchain
- Guaranteed implementation of smart contracts (programmes) that automatically execute once a set of agreed conditions are met

As one result of Blockchain having been originally used for crypto-currencies, the majority of the original research into the use of Blockchain came from the finance industry. This has changed during the last two years and an increasing amount of research and an increasing number of trial implementations have been for supply-chain, trade and business processes. In addition, during the first quarter of 2017 large companies, such as IBM, have begun to announce commercial business process and trade-related products based on Blockchain technology.

Blockchain technology has an immense potential for facilitating supply-chain and trade processes. The purpose of this project is to look at this technology in the context of UN/CEFACT's mandates in order to provide input to the Bureau, Programme Development Areas and Domains on:

- 1) Possible future work and a possible common approach to Blockchain-related projects
- 2) Blockchain developers as a potential new user group for UN/CEFACT standards

Project Scope

The scope of this project is to look at:

- How existing UN/CEFACT deliverables could be used by Blockchain application developers
- Possible changes to existing UN/CEFACT deliverables, or new deliverables, that could be considered in order to support Blockchain trade-facilitation related applications.
- How Blockchain technology could be used to facilitate trade and related business processes

All of the above will be examined from the perspective of UN/CEFACT's mandates and providing input to the Bureau, Programme Development Areas and Domains on:

- 1) Possible future work and a possible common approach to Blockchain-related projects
- 2) Blockchain developers as a potential new user group for UN/CEFACT standards

Project Deliverables

The project deliverables are two inter-related white papers, based on consultations and research within both the UN/CEFACT and Blockchain communities.

- 1) Half-day workshop on Blockchain during the autumn 2017 Forum (preferably on the Monday afternoon or Tuesday morning)
- 2) A white paper on a gap analysis of technical aspects of Blockchain and its relation to UN/CEFACT deliverables applications
- 3) A business-case / process-oriented white paper on how Blockchain technology could be used to facilitate trade and related business processes.

Exit Criteria

The exit criteria which will indicate the deliverable has been completed, are specified as below.

- 1) Half-day workshop on Blockchain during the autumn 2017 Forum.
 - a. Successful completion of a workshop during the autumn 2017 Forum
- 2) A white paper on a gap analysis of technical aspects of Blockchain and its relation to UN/CEFACT deliverables
 - a. Draft white paper ready for publication.
- 3) A business-case / process-oriented white paper on how Blockchain technology could be used to facilitate trade and related business processes.
 - a. Draft white paper ready for publication.

Project Team Membership and Required Functional Expertise

Membership is open to experts with broad knowledge in the areas of: Blockchain technology and/or trade facilitation and related business processes. In addition, Heads of Delegations may invite technical experts from their constituency to participate in the work. Experts are expected to contribute to the work based solely on their expertise and to comply with the UN/CEFACT Code of Conduct and Ethics and the policy on Intellectual Property Rights.

Geographical Focus

The geographical focus of the project is global.

Initial Contributions

Initial contributions include existing descriptions and technical specifications for the UN/CEFACT: Core Components Library (CCL); Business Requirement Specifications (BRs), Requirement Specification Mappings (RSMs) and Reference Data Models (RDMs) as well as already published material on Blockchain technology and implementations.

Resource Requirements

Participants in the project shall provide resources for their own participation. The existence and functioning of the project shall not require any additional resources from the UNECE secretariat. The project will be prepared in between Forums, in face-to-face meetings, if feasible, and using conference call facilities.

Project Proposal Files

File	Modified
PDF File 170420-3d Blockchain Whitepaper Project Proposal v5.pdf	Apr 28, 2017 by Lance Thompson