



Outcome report: Blockchain and Decentralized Identity for enabling online Trust and accountability.

Session Date and Time: Session 4, Thursday, 8 July 2021 (14:00 – 15:00 Geneva time). 60 minutes.

Speakers:

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- Xiaoyuan BAI, ITU-T Study Group 17, Q14/17 Associate Rapporteur, WP4/17 Vicechair, Alibaba, China.
- Abbie BARBIR, ITU-T Study Group 17, Q10/17 co-Rapporteur and Co-Founder ADIA.
- Vasily DOLMATOV, ITU-T Study Group 17 Vicechair, WP1/17 Chairman, Technology Advisor, Kryptonite, Russian Federation.

Moderator: Lia Lia Molinari, ITU-T Study Group 17 Vicechair, WP2/17 Vicechair

1. Session summary :

Blockchain technology has the potential to transform all sectors and will bring greater trust and transparency in the world's major industries. With the emergence of Decentralized Identifiers (DID) and verifiable Credentials (VC) as core standards, decentralized identity can finally provide individuals the ability to securely manage their identities online. This is achievable when coupled with Distributed ledger technology (DLT). The combination of DID, VC and DLT technologies can provide adopters the ability to construct trust framework in which the individual can exercise control over their identity relation and transaction in a manner that is secure and private.

The session covers an overview of blockchain and decentralized identity systems, applicable use cases such as digital vaccine certificate, examples of DLT based frameworks for implementing various applications and strong decentralized on-line identity solutions, and new approach to decentralized identification and Personally Identified Information (PII) handling.

2. Main outcomes highlighting the following:

a. Main issues discussed

The issues addressed were the decentralized identity through emergent technologies. The speakers, all of them with mandates and roles in ITU, introduced concepts and showed application cases and and solution.

b. Key achievements and challenges shared by the panellists and/or the audience

- ✓ Key use cases for Blockchain and decentralized identity such as digital vaccination certificate service, used car delivery service and digital driver's licence service were addressed.
- ✓ Providing quantum secure cryptography is critical considering commercial quantum computers could be available in a few years.
- ✓ Standards are needed to ensure interoperability of services and applications based on Blockchain and for Decentralized Identity.

- ✓ Decentralized Identity has wide application area that can benefit from additional standardization work.
- ✓ Applying TEE (Trusted execution environment) to realize confidential computing on DLT system can provide sensitive data protection in various practical scenarios with guaranteed system performance.
- ✓ Current standardization roadmap for Blockchain in Question 14 in SG17 is introduced.
- ✓ 5 Core Principles and Global Interoperability of Decentralized Identity were introduced.
- ✓ Building PII protection system corresponding to standards, recommendations and country legislation
- ✓ Providing control of the individual identities benefit without mandating user constant engagement and technological know how

c. Main conclusions reached during the discussion

There were no discussions at the end of the exhibitions. However, it seems that Standardization work is inevitable to ensure interoperability of services and applications based on Blockchain and for Decentralized Identity by ITU-T, which can provide an basis for LDC5 group use for the digital transformation.

3. Panellists contributions to the outcome reports

There was a question about ITU-T SG17's plan to address this issue. The pannelist responded with plan for holding the ITU workshop on digital vaccination certificates which will be held on August 11, 2021, to identify various use cases for digital vaccination certificates, identify challenges for implementing and federating these vaccination certificates, investigate potential collaboration with WHO in terms of Smart Vaccination Certificate initiative, share on-going activities among relevant technical groups or international organizations, and identify ways forward or directions for ITU-T SG17/SG16/WHO to undertake in the future.

Services and applications using DLT and decentralized identity are key enablers for digital transformation in LDC5 group.

- **What are the opportunities and challenges of emerging technology (specific to the session topic) for LDCs, LLDCs and SIDS**

The set of emergent technologies and related standards applicable to decentralized identity support the ability to securely manage their identities individual online.

The use of these technologies in different scenarios (government, industries), the numerous research articles and documentation about its, bring tested experience and acknowledge.

The challenge is to increase human capabilities, to stablish relationships of trust, and to continue working for the maturity of standards.

- **What are the most important points/aspects of the emerging technology that should be considered in order to accelerate the digital transformation in LDCs, LLDCs and SIDS?**

Various applications and services using Distributed ledger technology and decentralized identity to innovate governments and industries should use key cryptographic primivites and underlying technologies. The security, trust and privacy in the use of distributed ledger technology and decentralized identity should be ensured for applications and services based on distributed ledger technology and decentralized identity.

- **Takeaway**

Key words: DLT, Decentralized Identity

Sentence: Blockchain and decentralized identity are key enablers for digital transformation. Decentralized identity using Blockchain can provide individuals the ability to securely manage their identities online.