Question 22

5-6 分鐘

(New Question)

Motivation

A distributed ledger is a consensus of replicated, shared, and synchronized digital data geographically spread across multiple sites, countries, or institutions. There is no central administrator or centralized data storage.
Distributed ledger technologies (DLT) are secure by design and exemplify a distributed computing system with high Byzantine fault tolerance. Decentralized consensus has therefore been achieved with a DLT system. This makes DLT potentially suitable for the recording of events, medical records, and other records management activities, such as identity management, transaction processing, documenting provenance, food traceability, and voting.

A range of standardisation-related and industry initiatives have commenced across the globe examining different aspects of DLT/Blockchain. Various activities, including exploratory workshops and cross-industry collaboration initiatives, such as the Hyperledger project have served as forums for discussion of potential technical challenges around the widespread adoption of DLT.

An ITU-T Focus Group on Application of Distributed Ledger

Technology (FG DLT), was established May 2017 under the auspices of TSAG. The focus group addresses a number of topics of DLT, for example, use-cases and applications, requirements for the implementation, regulatory and policy aspects, security and privacy aspects, among many other aspects.

ISO/TC 307 develops standards on DLT/Blockchain based on the market need.

ITU-T SG16 is a leading group of e-services and multimedia applications. DLT technology has a good potential of new technology and multimedia applications that needs trusted infrastructure. SG16 does not have the explicit group to discuss the above problems.

This Question develops Recommendations on Distributed Ledger Technologies and DLT based e-services.

Study items

Study items to be considered include, but are not limited to:

- concepts, coverage, vision and use cases of multimedia applications and e-services based on DLT;
- characteristics and requirements for multimedia applications and e-services based on DLT;
- architectural framework and communication technologies of multimedia applications and e- services based on DLT;
- analyse and evaluate the current status of DLT and its maturity to support multimedia applications and e-services;
- research on consensus algorithm for different multimedia applications and e-services with various requirements on DLT;
- investigation of digital assets of multimedia applications and e-service on DLT, including management, exchange and etc.;

- general requirements and framework for DLT;
- research security and privacy aspects related to multimedia applications and e-services based on DLT;
- examine means for extending on-line trust in the context of multimedia applications and e-services using DLT;
- identify stakeholders with whom ITU-T could collaborate further on and potential collective actions and specific next steps.

  NOTE – This Question will take into consideration identified policy and regulatory implications of application of DLT in multimedia applications and e-services.

  Tasks

  Tasks include, but are not limited to:

- Utilize the deliverables related to DLT that were produced by relevant ITU-T Focus Groups (e.g. FG DFS, FG DFC, FG DLT), and study gaps among those groups and what need to be achieved;
- Develop documents which reflect how technologies enable applications and services by the underlying nature of the ecosystem taking into account existing applicable best practices of risk assessment methodologies and business models;
- Develop Recommendations on the definitions of terminologies, taxonomy, reference architecture, testing and evaluation for DLT infrastructures and DLT for multimedia applications and e-services;
- Study and analyse the implications of mandating interoperability and interconnection of services based on DLT. This will include the development of a standardization roadmap for interoperable services based on DLT taking into consideration the interoperability challenges and best practices;

- Study and analyse technology competitiveness issues that may hinder the deployment of multimedia applications and e-services based on DLT;
- Develop technical reports describing and addressing the standardization gaps and identifying future standardization work for ITU-T study groups in the area of multimedia applications and e-services based on DLT.

Recommendations:

- N/A

Questions:

- 13/16, 21/16, 24/16, 28/16

Study groups

- ITU-T SG17 Q14/17, "Security aspects for Distributed Ledger Technologies"
- ITU-T SG3, SG11, SG13 and SG20

Other bodies

- ITU-T JCA-MMeS
- ISO/TC 307
- ISO/TC 307/JWG 4 (Joint ISO/TC 307 - ISO/IEC JTC 1/SC 27 WG: Blockchain and distributed ledger technologies and IT Security techniques)
- ISO/IEC JTC1/SC 29 WG11
- GSMA
- Financial institutions
- United for Smart Sustainable Cities (U4SSC) initiative