



BLOCKCHAIN INTEROPERABILITY: THE MAIN ISSUES AND HOW ISO/TC 307 IS CONSIDERING ADDRESSING THEM

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LEDGER TECHNOLOGIES

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DISCLAIMER

As the documents representing the work of ISO/TC 307 are not publicly available, this presentation is only based on public information and broad approaches. As a Class A liaison to ISO/TC 307, UNECE has access to the underlying draft materials and they can be shared with those who have agreed to IP protection policies; I can provide additional detail as helpful.

The following presentation does not represent the official point of view of ISO/TC 307 or UN/CEFACT. The opinions expressed are my own.

ISO/TC 307 BLOCKCHAIN AND DISTRIBUTED LEDGER TECHNOLOGIES

Scope: Standardisation of blockchain technologies and distributed ledger technologies

Study Group	Related Working Group
1. Reference Architecture, Taxonomy and Ontology	1. Foundations
2. Use cases	(continues as SG)
3. Security and Privacy	2. Security, Privacy and Identity
4. Identity	(combined with WG 2, above)
5. Smart Contracts	3. Smart Contracts and their applications
6. Governance of B&DLT Systems	(newer SG)
7. Interoperability of B&DLT Systems	(newer SG)

<https://www.iso.org/committee/6266604.html>

TIMELINE TO DATE

April 2017

- Sydney, Australia
- Establishment of SG 1 - 5

November 2017

- Tokyo, Japan
- Establishment of first WGs and SG 6 - 7

May 2018

- London, UK
- Recommendations to be discussed

STANDARDS/PROJECTS UNDER DEVELOPMENT

- Reference architecture
- Taxonomy and Ontology
- Terminology and concepts
- Security risks and vulnerabilities
- Overview of privacy and personally identifiable information (PII) protection
- Overview of identity
- Legally binding smart contracts
- Overview of and interactions between smart contracts in blockchain and distributed ledger technology systems

FOCUS ON HOW BLOCKCHAIN/DLT IS UNIQUE

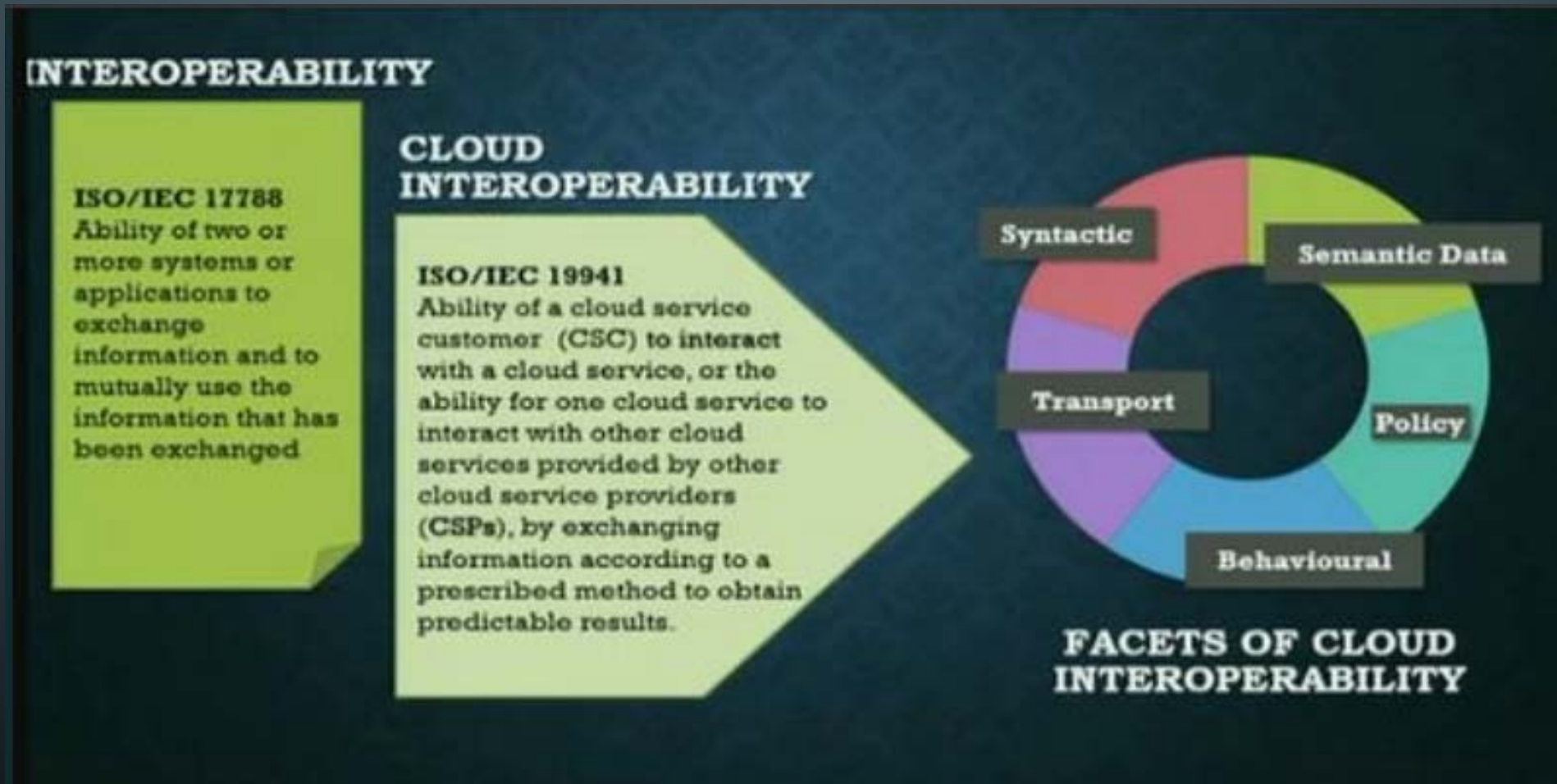
- How different from Cloud Computing, IoT?
 - Cryptoassets/stores of “value”
 - Decentralization and consensus mechanisms
 - Immutability by design
 - Smart Contracts
 - Unique fingerprint of the layers of the Reference Architecture

SG 7: INTEROPERABILITY

- Looking to prior work and finding what is unique for B/DLT
 - CORBA (1995)
 - EDI (1960s) and XML (1990s)
 - Web Services (2004)
 - ISO recent effort
 - Cloud Services Interoperability (ISO/IEC 19941 2017)
 - Internet of Things Interoperability (ISO/IEC AWI 21823-1 2018)

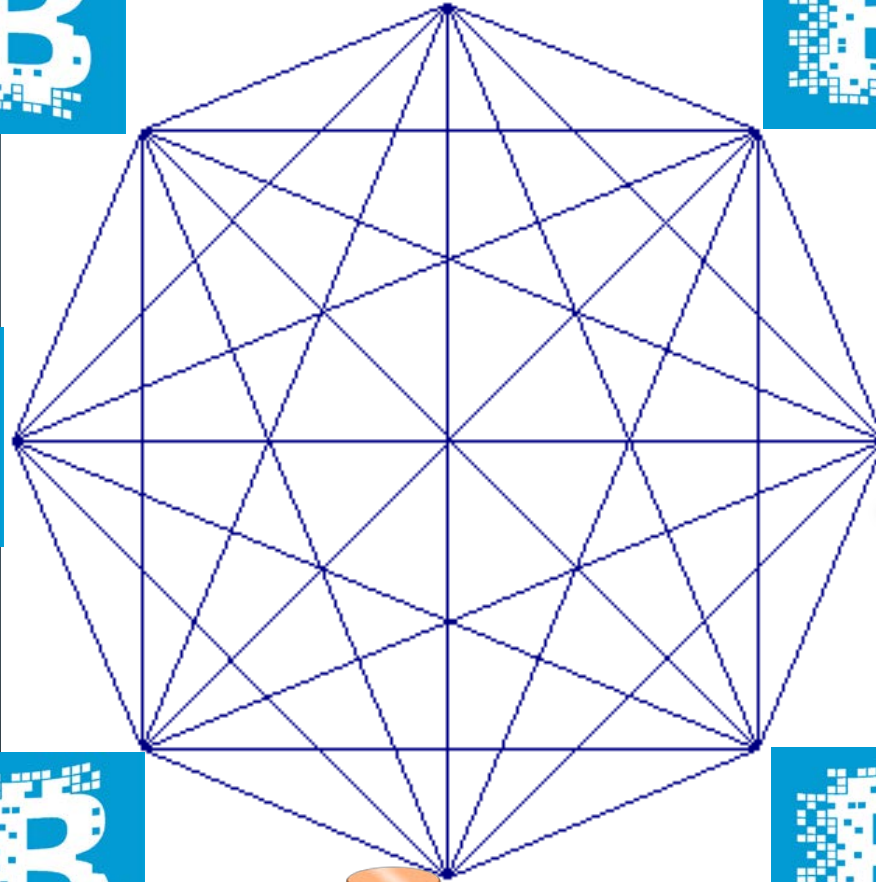
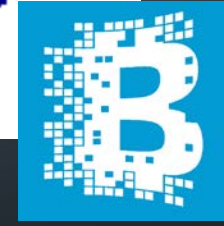
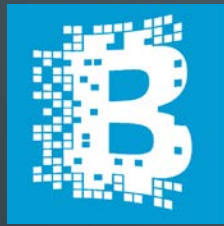
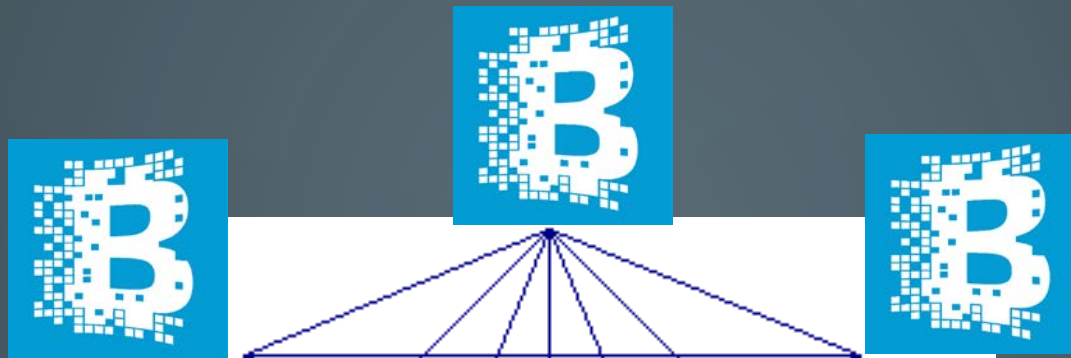
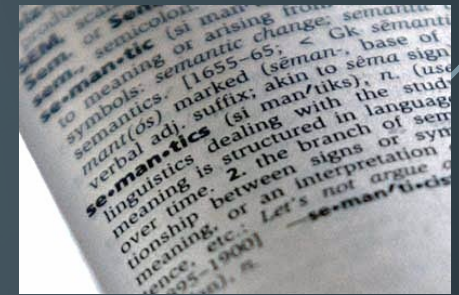
PRIOR ISO WORK: “5 FACETS” MODEL FROM ISO/IEC 19941

Source: NIST tweet: <https://twitter.com/usnistgov/status/776122926353362944>



SG 7 PROCESS SINCE NOVEMBER

- Application of “five facets” to/from/between layers of B/DLT
 - Syntax: Format of information
 - Semantics: Meaning of information
 - Behavior: Informational rules behind information and services
 - Policy, Trust, Organization: Legal and organizational rules behind information and services
 - Transport: Method of moving information
- Also considered
 - Discovery: Publishing/responding to inquiries and finding sources for information and services



SG 7 PROCESS SINCE NOVEMBER (CONT.)

- Yet to be considered
 - Cryptoassets: Coins, tokens, et al.
- Recommendations made for consideration in London on
 - Which topics should become new projects (TR, TS, IS)
 - Which should be picked up under the work of existing WGs
 - Ongoing work of SG 7
 - Which should be left to the market to develop

LEVERAGING UN/CEFACT STANDARDS

- Payload content (e.g., A&A schemas)
- Payload description (e.g., SBDH)
- Rules/Processes

FOR MORE INFORMATION

- ISO/TC 307
 - <https://www.iso.org/committee/6266604.html>
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