



CAICT 中国信通院

ITU-T FG DLT outcomes and the way forward

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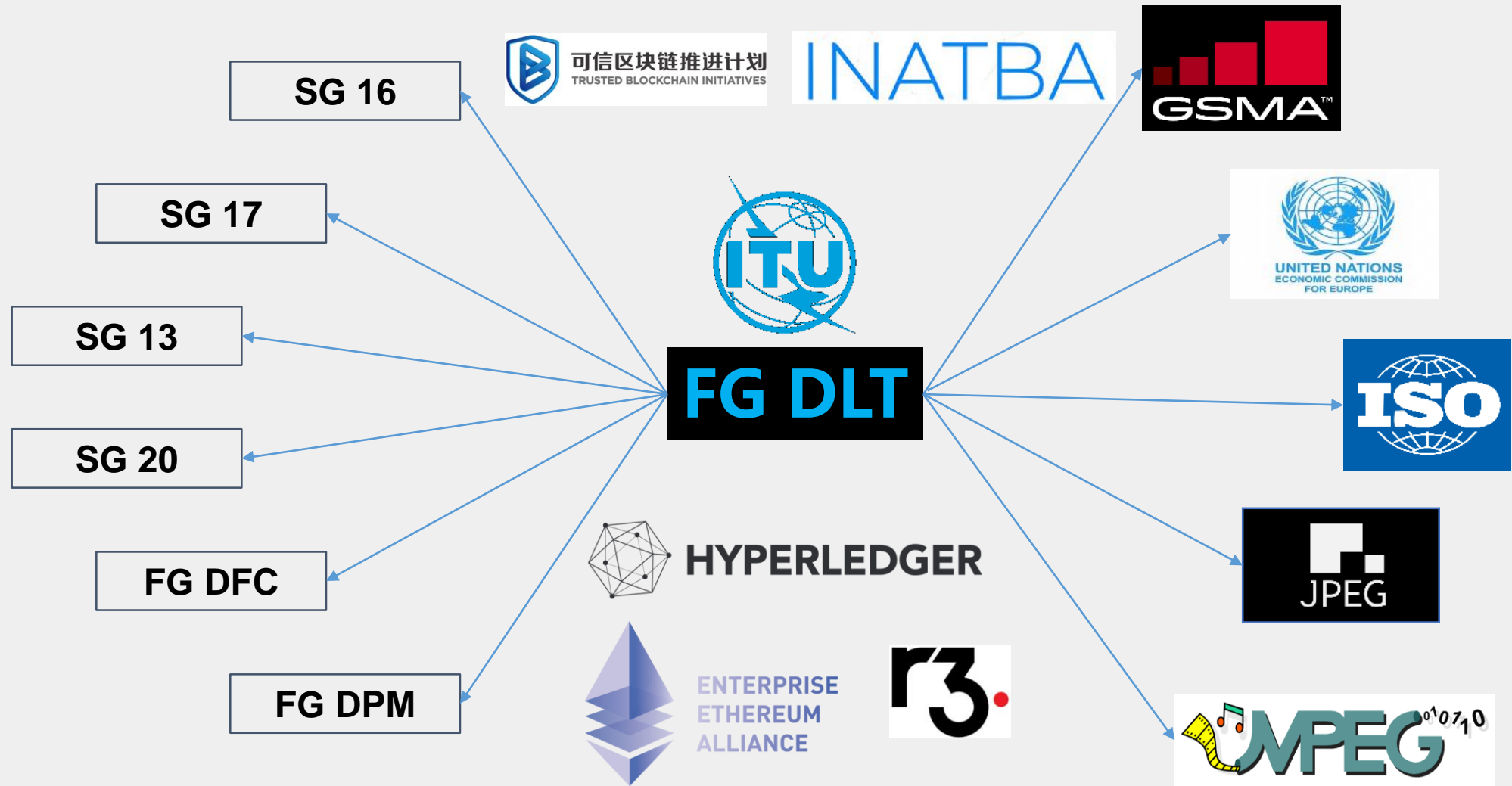
Chairman of ITU-T FG DLT

Rapporteur of ITU-T SG16 Question 22

ITU-T FG DLT meetings

	Meeting	Host	Inputs	Outputs	Total participants	Co-located events
1	Geneva, 17-19 October 2017	ITU	<u>39</u>	<u>7</u>	<u>81</u>	-
2	Bern, 5-7 February 2018	Swisscom	<u>37</u>	<u>12</u>	<u>64</u>	-
3	Geneva, 28-30 May 2018	ITU	<u>26</u>	<u>12</u>	<u>60</u>	-
4	Beijing, 9-12 October 2018	CAICT, Trusted Blockchain Initiatives	<u>21</u>	<u>14</u>	<u>47</u>	Trusted Blockchain Summit 2018
5	Rio de Janeiro, 14-17 January 2019	BNDES	<u>34</u>	<u>12</u>	<u>67</u>	Workshop on DLT for transparency and integrity
6	Madrid, 1-4 April 2019	Alastria	<u>41</u>	<u>13</u>	<u>48</u>	Workshop on DLT, Blockchain and SDG Attainment
7	Geneva, 29 July - 1 August 2019	ITU	24	10	62	Workshop on DLT scalability and interoperability

ITU-T FG DLT as a Hub



ITU-T FG DLT deliverables

Number	Title	Proposed action
D1.1	DLT terms and definitions	Adopt as ITU-T Recommendation
D1.2	DLT overview, concepts, ecosystem	Adopt as ITU-T Technical Paper
D1.3	DLT standardization landscape	Keep information up-to-date
D2.1	DLT use cases	Adopt as ITU-T Technical Paper
D3.1	DLT reference architecture	Adopt as ITU-T Recommendation (existing work item H.DLT)
D3.3	Assessment criteria for DLT platforms	Adopt as ITU-T Recommendation (existing work item F.DLT-AC)
D4.1	DLT regulatory framework	Adopt as ITU-T Technical Paper
D5.1	DLT outlook	Adopt as ITU-T Technical Paper

<https://extranet.itu.int/sites/itu-t/focusgroups/fgdlt/output/Forms/AllItems.aspx>

Real world use cases study

FG DLT collected 50 use cases

Vertical
Use
Cases

Finance

Healthcare

ICT

Entertainment

**Government
and Public
Sector**

Horizontal
Use Cases

**Identity Management/Security Management/Data
Management/Governance and DAOs/Crypto-infrastructure**

Apply DLT to Financial sector

Key benefits of DLT adoption:

- ✓ Simplifying settlement and reconciliation
- ✓ Removal of intermediaries
- ✓ Trust enforced programmatically by design
- ✓ Increased transparency;
- ✓ Risk reduction and fraud minimization;
- ✓ Compliance efficiency improvement

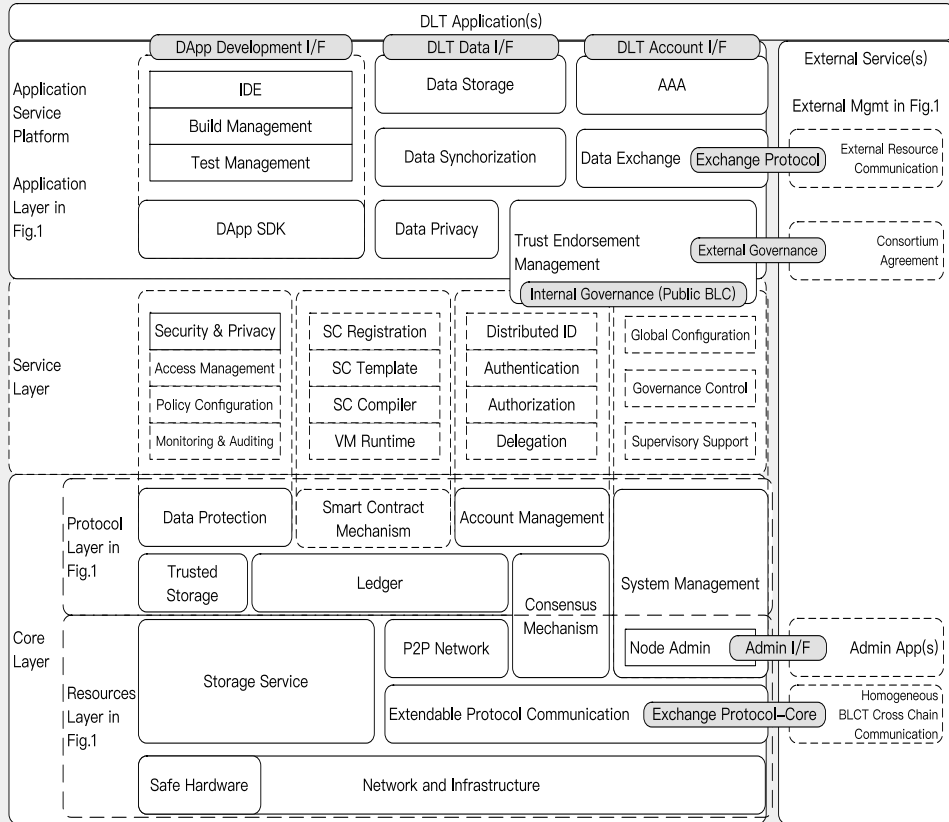
Table 1: How DLT can be applied to the subcategories

ID	Subcategories	How DLT can be applied
1	ID verification (KYC/AML)	DLTs can provide a trusted way to do customer verification to satisfy KYC (Know your Customer) and AML (Anti-Money Laundering) obligations, e.g., through past immutable data in the DLT.
2	Tokenization and stable coins	The digitization of regulated financial products and services such as security/asset tokens and utility tokens and create new ones, e.g., cryptocurrency/payment tokens through tokenisation.
3	Financial management (accounting and auditing)	Smart contracts can automate some accounting processes. Auditing costs can be reduced through cheaper verification of transactions in DLT [ref-coa-4].
4	Reduction in the risk of fraud	Real time data is decentralised and this can increase trust of the shared data, e.g., management of cash or financial controls, data of maritime industry for insurance purposes, etc.
5	Funding	DLT creates new revenue opportunities such as new models of funding and new types of markets such as equity crowdfunding, secondary market or new types of exchanges.
6	Investments	Tokenised assets can support the transformation of the regular investments model and promote accessibility to new asset investments.
7	Regulatory compliance and audit	DLTs can provide accurate and tamper-proof financial, audit and regulatory reports thereby improving speed and quality.
8	Clearing and settlement	Automation and improvement of the centralized clearing and settlement processes using DLT can result in increased efficiency and reduction of costs, time and agents involved.
9	Payments and P2P transactions	DLTs can bring new models and arrangements to make payments and transfers faster with lower costs and less or no intermediaries. E.g., remodelling correspondent banking, cross-border payments, etc.
10	New product models	New peer-to-peer insurance models can be secured with DLT. Credit: Decentralised financing.

FG DLT Reference Architecture-Methodology

FG DLT RA

Real world implementations



FG DLT D3.1

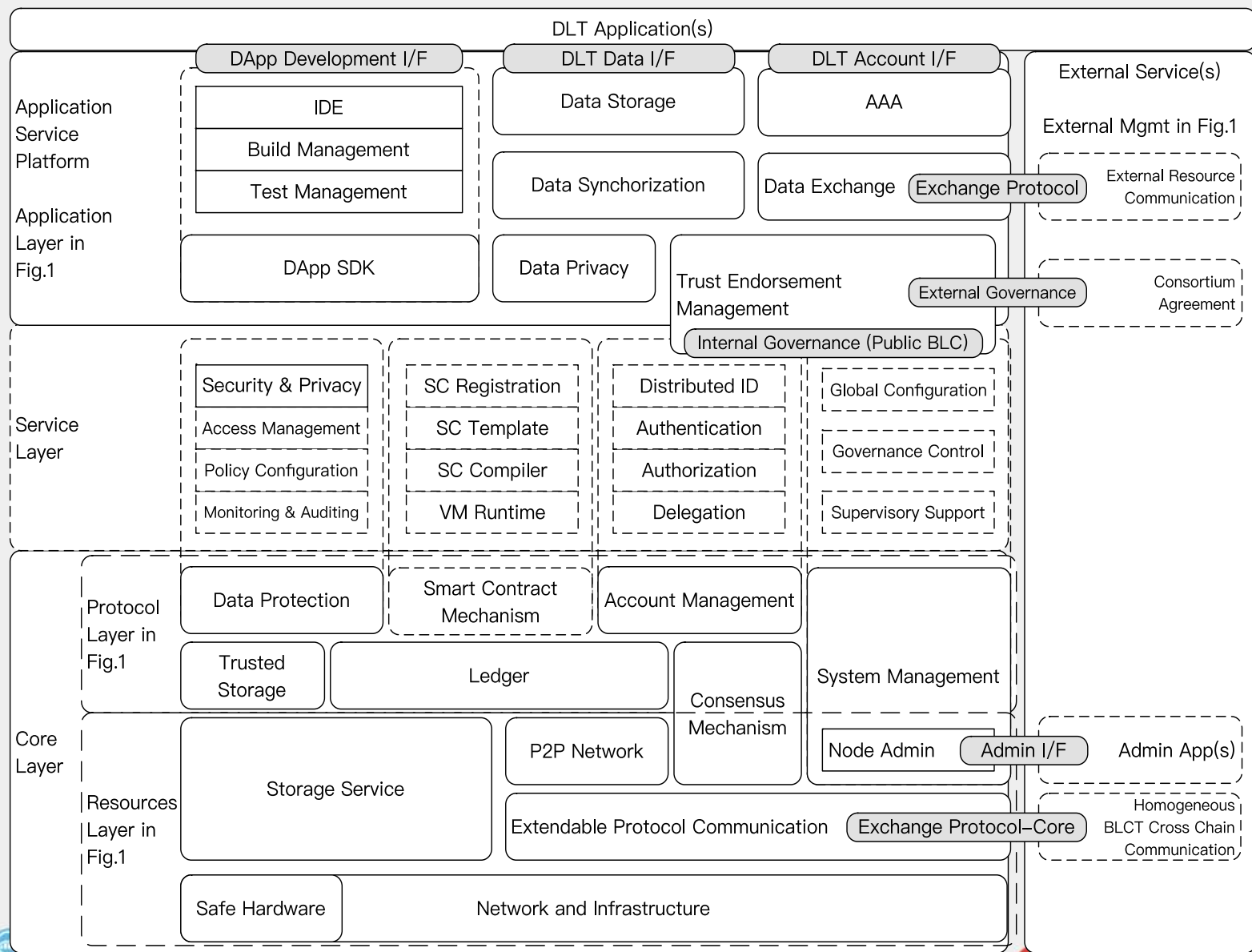
Abstraction

Mapping



FG DLT D3.1 attachments-mapping

FG DLT Reference Architecture



Technical Specification ITU-T FG DLT D3.1 Distributed ledger technology reference architecture

DLT features and regulatory challenges

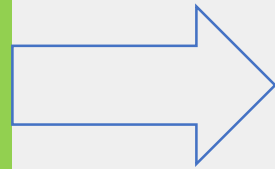
Table 1: DLT features and regulatory challenges

Feature	Examples of regulatory challenges
Distribution, shared ledger (no central repository) [b-Yaga]	<ol style="list-style-type: none">1) Applicable law with respect to nodes established in different states;2) Legal subjects in multiple jurisdictions;3) Distributed storage solutions to meet the requirements of production environments;4) Interoperability requirements;5) New civil or commercial-law forms, organizations and contracting;6) Protection of secrecy in open environments.
Autonomy and responsibility	<ol style="list-style-type: none">1) Legal smart contract definition and enforceability (valid source code execution);2) Boundaries of anonymity;3) Applicable law;4) Liability of smart contract managers (SC layer governance);5) Intellectual property of code.
Incentive mechanism and digital assets [b-FINRA, b-Yaga]	<ol style="list-style-type: none">1) Coin, token, tokenization legal common (UNCITRAL) definition;2) ICO definition and minimal requirements for investor protection;3) Crypto asset/token financial system: legal concept and boundaries;4) Supervisory policies and procedures in accordance with applicable rules [b-FINRA].
Openness and transparency/ anonymity	<ol style="list-style-type: none">1) AML issues, secrecy leaks, personal security [b-FINRA];2) Anonymization (no name/encrypted users vs KYC) and pseudonymization [b-EU-a].

DLT features and regulatory challenges

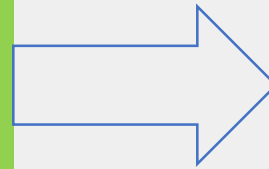
1

Introduction of
the property



2

Regulatory
challenges



3

Approaches
and/or
recommendations

Technical Report FG DLT D4.1 Distributed ledger technology regulatory framework



Lesson learnt: Barriers to DLT adoption

Foundational technology vs legacy infrastructure

Trilemma trade-offs (decentralization, scalability and security)

Lack of standards

Data security

Privacy risks

Failure points remain

Slower Return on investment (ROI)

Potential high cost to implement

Regulatory uncertainty

Next Steps for ITU-T DLT Standardization

- **Putting forward the deliverables for adoption in ITU-T Study Groups**
 - **Especially DLT dedicated Q22/16 and Q14/17**
- **Internal coordination and collaboration between different ITU-T study groups**
- **Joint rapporteur meeting or co-located meeting arrangements of different groups**
- **Furthering the work on DLT will discuss SDG relevance and inclusiveness**

Thanks

