MOBI

Building the
Web3 Economy

JUNE 2021

FINANCE, SECURITIZATION, & SMART CONTRACTS

TECHNICAL SPECIFICATIONS

MOBI FSSC0002/TS/2021 Version 1.2

Finance, Securitizations, and Smart Contracts (FSSC) Working Group

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INTRODUCTION

This standard was issued by MOBI and its members. MOBI is a nonprofit alliance of many of the world's largest vehicle manufacturers, startups, governments/transit agencies, NGOs, financial institutions, e-mobility providers, consultancies, suppliers, logistics providers, and more working to create standards and build the Web3 digital infrastructure for connected ecosystems and IoT commerce.

MOBI is creating standards for trusted self-sovereign data and identities (e.g. vehicles, people, businesses, things), verifiable credentials, and cross-industry interoperability, with the goal of making transportation more efficient, equitable, decentralized, and circular, all while preserving the data privacy of users and providers alike. MOBI is technology and ledger agnostic. The work of preparing standards is carried out through MOBI Working Groups. Each member of the consortium interested in a subject for which a Working Group has been established has the right to be represented and participate in that Working Group.

The procedures used to develop this document and those intended for its further maintenance are described in the working group charter. In particular, the different approval criteria needed for the different types of MOBI documents should be noted. Approvals of MOBI Steering Committee and Board of Directors are obtained upon the final document release. Attention is drawn to the possibility that some of the elements of this document may be the subject of intellectual property rights. In accordance with MOBI IPLR policy, a 60-day review period is provided to the MOBI community to disclose any and all IP matters pertaining to this standard. MOBI shall not be held responsible for identifying any or all such rights. Details of any IP rights identified during the development of the document will be in the Introduction upon public release of this standard.

Any trade name used in this document is provided for the convenience of users and does not constitute an endorsement. The Working Group responsible for this document is the Finance, Securitizations, and Smart Contracts (FSSC) Working Group. Sincere thanks and appreciation are extended to those who contributed their unique insights to the FSSC Technical Specifications.

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ABOUT MOBI FSSC TECH SPECS

Advances in distributed ledger technologies and telematics have widespread implications for the various multi-party processes involved in vehicle finance.

With advances in data exchange, distributed ledgers, and telematics, the vehicle finance ecosystem is primed for adopting new blockchain use cases. For example, telematics data about geolocation is able to replace traditional floorplan auditing, reducing manpower costs and cutting the time required for an audit. Lenders and other organizations that engage in multi-party processes such as waterfall payments or loan servicings would benefit greatly from the ability to frictionlessly exchange data.

MOBI working group members believe that blockchain and distributed ledger technologies play a significant role in ensuring the secure, privacy-preserving exchange of data.

MOBI working group members believe that the use of blockchain/DLT would not scale without coherent and standardized methods adopted and implemented by the industry stakeholders who manufacture and service the vehicles. The lack of interoperability in the absence of industry standards becomes problematic at scale.

The FSSC Standards leverage distributed ledger technologies to create a trust layer for transactions and data exchange within a shared digital ecosystem.

The Finance, Securitization, and Smart Contracts (FSSC) standards provide blockchain/DLT as a trust layer for transactions and data exchanges between entities in a shared digital ecosystem. This standard prescribes reference architecture, data schemas, certificates, etc., for entities in the vehicle finance ecosystem to exchange data by leveraging blockchain/DLT.

LIST OF ACRONYMS

AC	:	Access Certificate
DBC	:	Data Host Bootstrap Certificate
DID	:	Decentralized Identifier
DLT	:	Distributed Ledger Technology
EC	:	Entity Certificate
EID	:	Entity Identifier
GPC	:	Group Permission Change Certificate
ISO	:	International Organization for Standardization
KYC	:	Know Your Customer
OEM	:	Original Equipment Manufacturer
PII	:	Personally Identifiable Information
RC	:	Revocation Certificate
SSL	:	Secure Sockets Layer
TLS	:	Transport Layer Security

URI : Uniform Resource Identifier

URL : Universal Resource Locator

UUID : Universally Unique Identifier

VC : Verifiable Credential

W3C : World Wide Web Consortium

GLOSSARY OF TERMS

This section contains the definitions of all technical and specific terms used throughout this document.

Access Certificate (AC): An Access Certificate is a document providing the ability for a particular entity to access a particular endpoint in a network's data layer.

Accessor: An entity is an Accessor of a resource if it attempts to access the Uniform Resource Identifier (URI) endpoint. An Accessor may need to go through security and authentication processes in order to actually access said endpoint.

Allow List: A list that specifies entities that are allowed to access a particular resource.

Block List: A list that specifies entities that are not allowed to access a particular resource.

Blockchain: A blockchain is a growing list of records, called blocks, that are linked using cryptography. Each block contains a cryptographic hash of the previous block, a timestamp, and transaction data (generally represented as a cryptographically secure tree structure such as a Merkle tree).

Data Bucket: A logical data abstraction for a persistent data store. Data written to a Data Bucket can be used repeatedly over time.

Data Host: A Data Host is an entity that stores data and is trusted with properly administering it, authenticating requests to access the data, and distributing the data as needed.

Data Host Bootstrap Certificate (DBC): The Data Host Bootstrap Certificate is a certificate that provides a cryptographic proof that a particular entity (Data Host) is allowed to serve a particular type of data from a specific Uniform Resource Identifier (URI).

Data Owner: The Data Owner is the owner of a certain piece of data, usually the same as the entity that generated said data (referred to as the Data Generator).

Data Stream: A logical data abstraction for data buffers. Acts as an ephemeral "stream" of data and persists for a set period of time in the network until it is purged in the online systems, thereafter, moved to nearline data systems, and ultimately moved to offline data systems.

Decentralized Identifier (DID): A W3C Decentralized Identifier represents a globally unique identifier that can be resolved to a DID Document, or de-referenced on a specific distributed ledger network, much like a URL on the Internet.

DID Document: A DID Document is a simple text document that describes how to use a given DID. Each DID Document may contain at least three things: proof purposes, verification methods, and service endpoints. A DID Document can specify that a particular verification method, such as a cryptographic public key or a pseudonymous biometric protocol, can be used to verify a proof that was created for the purpose of authentication. Service endpoints enable trusted interactions with the DID controller.

Distributed Ledger Technology (DLT): Distributed Ledger Technology enables consensus about the state of replicated, shared, and synchronized digital data geographically spread across multiple sites, countries, or institutions. A peer-to-peer network is required as well as consensus algorithms to ensure replication across nodes is undertaken. Blockchains are the most well-known example, though general practical byzantine fault-tolerant systems fall under this category as well.

Entity: An Entity (e.g. vehicle, corporation, individual, etc.) is a network participant that interacts with the system by reading/writing data, enforcing permissioning, or otherwise supporting the network in some way. An entity can be identified using an entity certificate anchored on a DLT.

Entity Certificate (EC): An Entity Certificate is the certificate that represents all of a particular entity's network-level information and metadata, including but not limited to identifiers about who they are, the URIs to delegate trust to, and their public keys. An EC is always paired with a corresponding Entity Identifier (EID).

Entity Identifier (EID): An Entity Identifier is a unique string that uniquely identifies an entity within the system network.

Group Permission Change Certificate (GPC): Group Permission Change Certificates are certificates signed by a data owner prompting a Data Host to change the permissioning information of the group.

Identity: Identity is a combination of one or more unique identifiers having meta-data associated with them. Identity meta-data may consist of certificates such as verifiable credentials (per the W3C definition) and other non-verifiable data objects associated with the unique identifier(s).

Key-Value (KV) Store: A Key-Value Store is a system that stores (key, value) pairs. The key is used to obtain access to the value in some way. Distributed KV stores are KV stores spread across multiple machines and can effectively maintain a global state table.

Know Your Customer (KYC): Know Your Customer is the process of verifying the identity, risks, and other information associated with a customer before initiating any business relationship.

Network: A group of entities that perform specific activites with a specific goal in mind. In a DLT or blockchain network, computing nodes perform a set of tasks with a goal defined by the network's rules.

Node: A node is a point of intersection/connection within a network. In an environment where all devices are accessible through the network, these devices are all considered nodes. The individual definition of each node depends on the type of network it refers to.

Original Equipment Manufacturer (OEM): An Original Equipment Manufacturer is an organization that makes devices from component parts either made internally or sourced from other organizations.

Peer-to-Peer (P2P): A peer-to-peer service is a decentralized platform whereby two individuals interact directly with each other, without intermediation by a third party. Instead, the buyer and the seller transact directly with each other via the P2P service. The P2P platform may provide services such as search, screening, rating, payment processing, or escrow. (Source: Investopedia, 2021)

Personally Identifiable Information (PII): Personally Identifiable Information is any information: (1) that identifies or can be used to identify, contact, or locate the person to whom such information pertains, (2) from which identification or contact information of an individual can be derived, or (3) that is or might be directly or indirectly linked to a natural person [ISO/IEC 29100:-1].

Revocation Certificate (RC): Revocation Certificates (RC) revoke Access Certificate (AC) permissions if the AC has not expired automatically.

Role: In a digital network, roles regulate the creation of and access to data contained within the network.

Secure Sockets Layer (SSL): SSL is the standard security technology for establishing an encrypted link between a web server and a browser. This link ensures that all data passed between the web server and browsers remain private and integral.

Tokenized Carbon Credits (TCC): Tokenized Carbon Credits are digital, tradable certificates or permits that represent the right to emit a specified amount of greenhouse gas.

Transport Layer Security (TLS): The Transport Layer Security protocol is the successor of Secure Sockets Layer (SSL) and aims primarily to provide privacy and data integrity between two or more communicating computer applications.

Trust Anchor: An authoritative entity that validates and qualifies entities on the network specific to the entity’s corresponding role.

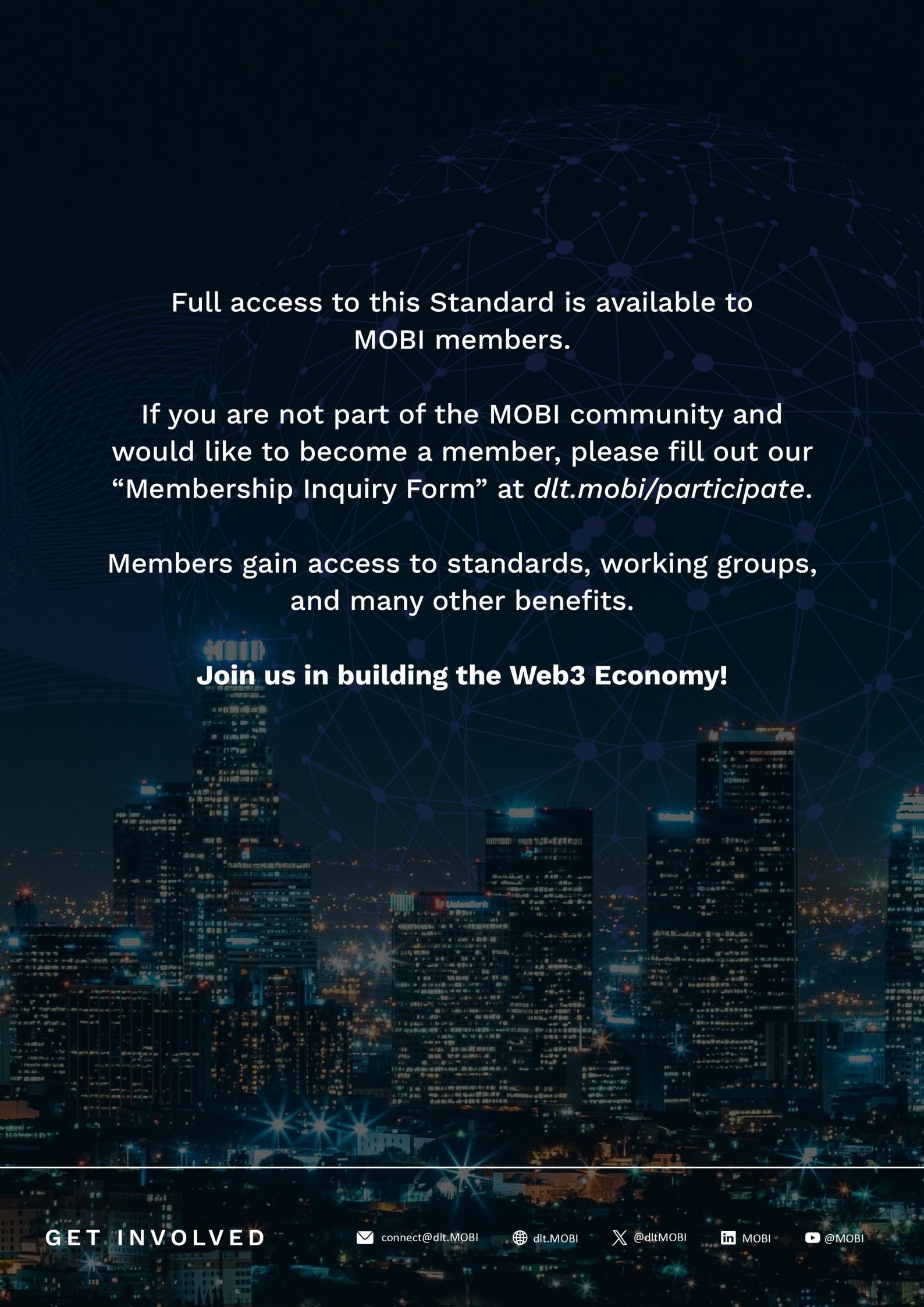
Uniform Resource Ientifier (URI): Uniform Resource Identifiers ensure that a named URI will always point to the same resource it was assigned to. Note that this is similar to the addressing system on many blockchain platforms and represents one way to implement a URI.

URL: A specific type of Uniform Resource Identifier (URI) referencing web resources.

Universally Unique Identifier (UUID): Universally Unique Identifiers are unique identifiers that are associated with pieces of digital information and can be used to address and identify them.

Verifiable Credential (VC): The W3C Verifiable Credential Standard defines Verifiable Credentials as “a part of our daily lives; driver’s licenses are used to assert that we are capable of operating a motor vehicle, university degrees can be used to assert our level of education, and government-issued passports enable us to travel between countries. This specification provides a mechanism to express these sorts of credentials on the Web in a way that is cryptographically secure, privacy-respecting, and machine-verifiable.

Waterfall Structure: Waterfall payment structures require that higher-tiered creditors receive interest and principal payments while lower-tiered creditors receive principal payments only after the higher-tiered creditors are paid back in full. Debtors typically structure these payments into such tranches to prioritize the highest-principal loans first because they are also likely the most expensive



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Join us in building the Web3 Economy!