

**FINANCIAL TECHNOLOGY SANDBOX
BLOCKCHAIN DEFINITION WHITEPAPER**

Date: January 24, 2020

To: The Blockchain and Digital Currency Taskforce

From: Florida Blockchain Business Association Blockchain Definition Working Group

Re: Financial Technology Sandbox Act, Fla. Stat. § 559.952
SB 1870/HB 1391

SUMMARY

Recently introduced bills SB/1870 and HB/1391 aim to create a Financial Technology Sandbox program in Florida operated and managed through the Office of Financial Regulation. Recognizing the importance of supporting innovation for financial services and the challenges presented by the time and cost required for compliance, this program allows small-scale, live testing of new financial products using real customers. While regulatory supervision is provided, regulatory licensure and associated compliance is limited for the duration of one’s participation in the program. In particular, the FCA sandbox model of financial innovation has enjoyed remarkable success, with 90% of participating companies going on to market.¹ Thus, implementation of a sandbox program in Florida is expected to likewise lead to the promotion of business innovation and association economic growth.

In reference to the requirement that a program applicant provide an “innovative financial product or service available”, the bills include the following definition of “blockchain”:

“Blockchain” means a digital record of online transactions that are stored chronologically and obtained through consensus and that are decentralized and mathematically verified in nature.

¹ Zuckerman, Molly. 2019. "UK Financial Regulator Introduces Global Fintech Sandbox, '90%' Success Rate Domestically". *Cointelegraph*. <https://cointelegraph.com/news/uk-financial-regulator-introduces-global-FinTech-sandbox-90-success-rate-domestically>.

Florida Blockchain Business Association
Blockchain Definition Working Group

The Florida Blockchain Business Association has organized a working group to thoroughly explore, consider and make recommendations regarding the proposed definition of “blockchain” at use in the draft bills. Of further concern to the working group is how this definition may be later integrated into future legislation, or how present definitions may restrict the future development of blockchain as a technology and its implementation across industries. As explained by SEC Commissioner Hester Peirce,

[b]ecause the market is always changing, we must always keep in mind that a rule that once made sense may have outlived its usefulness. . . . Outdated rules can impose significant costs on market participants. These costs are why I oppose the mandating of specific technologies in our rules. To the extent that we . . . do issue such specific mandates, we have an affirmative obligation to revisit these requirements periodically.²

RECOMMENDATIONS

With a nod towards the sound advice of SEC Commissioner Hester Peirce, due to the rapidly changing pace of technology and the impossibility of anticipating future advances, iterations or how the technology may be used, it is this group’s recommendation that:

1. The legislature should not include the definition of “blockchain” in any legislation; or
2. In the alternative that a definition of “blockchain” is required, then we recommend:

“Blockchain” means a type of distributed ledger, or peer-to-peer database spread across a network, that digitally records transactions in theoretically unchangeable blocks of encrypted data. Each block is timestamped and includes a reference to the previous block, linking the blocks together in an append-only, chronologically ordered chain. Blockchains use varying consensus rules to verify information before a block may be recorded to the chain, and may utilize a token as a network incentive or for other purposes.

² Peirce, Hester. "SEC.Gov | Regulatory Apparitions: Remarks At The Exchequer Club". *Sec.Gov*, 2018, https://www.sec.gov/news/speech/speech-peirce-112818#_ftn4.

SUPPORT AND RATIONALE

Methodology: In order to arrive at a unanimous group consensus in support of the above recommendations, this group first considered several definitions published by other industry giants, and also the various definitions that have been written into the statutes of other states. Recognizing certain key attributes that distinguish blockchain from other kinds of distributed ledger technologies, and from other kinds of data management systems, this group then vetted a core list of descriptive identifiers based on their likelihood to evolve together with the technology, and the likelihood of misinterpretation or misapplication to the detriment of industry growth. By circulating several drafts of a working definition through the group, and integrating various comments and concerns of the participating members, the final definition was crafted with the support of all. Consequently, this group believes that the recommended definition of blockchain is sufficiently broad to cover the future evolution of blockchain as a technology, its expansion throughout industry and society, and yet it remains sufficiently narrow to identify and distinguish blockchain from other distributed ledger technologies and data management systems.

Key Terms: Having thoroughly studied the issue of how to define blockchain as a technology, this working group has concluded that there are several terms that are key to understanding blockchain. These key terms are those that have gained broad acceptance within international industry and academia as identifying the most common and popular blockchain attributes that are responsible for driving this technology into the forefront. While some of these terms are imperative to defining and distinguishing blockchain as a technology, others run the risk of misinterpretation as blockchain is rapidly modified and adopted for novel use cases. Consequently, those terms deemed critical to any statutory definition of blockchain, together with a reasoned application for their inclusion, are included in the following table in the order in which they appear in the definition.

KEY TERMS	SUPPORT AND RATIONAL FOR INCLUSION
Distributed	Refers to networks where the computers, software and data are spread out across many computers that communicate complex information among each other to coordinate shared resources or solve computational problems. Blockchain networks are distributed networks.
Ledger	Blockchain serves as a general ledger for the digital recordation and storage of information about transactions occurring on the blockchain network.
Peer-to-Peer	A particular kind of distributed network in which tasks or workloads are shared equally among the network participants. Blockchain is a peer-to-peer distributed network.
Database	Blockchains organize and store collections of electronically accessible data.
Theoretically	Every encryption scheme is theoretically breakable, especially with the continued growth and evolution of quantum computing.
Unchangeable	A synonym to “immutable”, this quality is essential to preserving the integrity of the data recorded on the chain, making it impervious to later instances of fraud.
Block	Blockchains organize data about transactions in packages called blocks before the data is recorded and stored.
Encrypted Data	A subset of cryptography, encryption is the most effective and popular data security technique used to encode messages. A mathematical operation deployed throughout blockchains, encryption maintains important security features like data integrity, authentication, non-repudiation and confidentiality that are fundamental attributes of blockchain. Not all blockchains encrypt their blocks, but all blockchains encrypt data.
Time-Stamp	Whether a blockchain time-stamps an individual transaction, or only the block of data, the time-stamp provides information about the timing of the transaction essential for audits, and is a critical attribute of all blockchains.
Append-Only	Blocks are only added to the end of the chain, and cannot be added anywhere up the chain, an attribute critical to maintaining the integrity of the audit trail of information and resistance to fraud.
Chronological	It is the blocks that are ordered chronologically and not necessarily the individually transactions (e.g. Bitcoin orders transactions by price paid).
Chain	As each block of data is added to the prior the block, a chain of data blocks is formed, hence – a “blockchain”.
Consensus	Blockchain networks use varying methodologies to achieve agreement among the network participants about what transactions get bundled into a block and when the block gets added to the chain. Not all distributed ledgers require consensus among network participants, but all blockchains do.
Token	Many blockchains, but not all, may incorporate or issue “tokens” as part of their architecture. These tokens may sometimes be referred to as “digital currency”, “virtual currency”, “cryptocurrency” or “coins”; whereas, “token” has the broadest meaning and application. The word “token” does not evoke any particular regulatory treatment.
Network Incentive	Digital tokens, or coins, are most often included in public, permissionless networks (e.g. Bitcoin and Ethereum) to incentivize people to expend resources for the operation of network computers called “nodes”.
“... or for other purposes”	Tokens may also be issued not to incentivize network participation, but to track certain information like stock transactions or membership points.

Excluded Terms: This working group also considered terminology that is frequently used to describe blockchain as a technology, but then determined to exclude the use of those terms as they are either inexact, inaccurate, or subject to misapplication as interpreted pursuant to their inclusion in a statutory definition. A reasoned account for these excluded terms is explained in the following table.

KEY TERMS	SUPPORT AND RATIONAL FOR EXCLUSION
Coin	“Coin” is more often identified as a kind of cryptocurrency and does evoke special regulatory treatment.
Cryptography	A broad field of study based on mathematics and algorithms concepts that uses digital signatures and security related algorithms like symmetric and public key cryptography for message verification. While certain cryptographic applications are irrelevant to blockchain, encryption, as a narrower subset, is critical.
Decentralized	Refers to a kind of distributed network that has no discernible command or control over the greater network to provide make decisions or provide direction for network operation. All blockchains are distributed, but not all blockchains are decentralized.
Immutable	Not widely used in the vernacular.
PoW/PoS	Consensus protocols at work in individual blockchains refer to the type of security mechanism employed in a blockchain. Blockchain, as a technology, does not require a particular level of security; thus, reference to specific consensus protocols like proof of work or proof of stake is inappropriate.
Private/Permissioned Public/Permissionless	Blockchains may be private, requiring certain permissions for access, or they may be public, requiring no permission to access. Blockchain, as a technology, does not require a particular level of access.

WORKING GROUP COMPOSITION

This working group is comprised of 11 recognized industry professionals with experience in law, legislation, engineering, entrepreneurship and academia together with their respective law firms, businesses, not-for-profit organizations and educational institutions. Each member has primary operations or substantial nexus in Florida and an authentic interest in assuring Florida has the best framework possible to support blockchain as an emerging technology.

Florida Blockchain Business Association
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