

f. Preface

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The Distributed Immutable Data Objects (DIDO) [Reference Architecture \(RA\)](#) is meant to be used as a resource to guide the design, use, or selection of [blkchn](#), [Distributed Ledger Technology \(DLT\)](#), or other Distributed Computing solutions such as [InterPlanetary File System \(IPFS\)](#) and [Data Distribution Service \(DDS\)](#).

The purpose of DIDO RA 1.0 was to create a better understanding of the Blockchain and DLT, which were exploding in the [Information Technology \(IT\)](#) world after the publication of Satoshi Nakamoto's paper "Bitcoin: A Peer-to-Peer Electronic Cash System"¹⁾ and the subsequent success of the Bitcoin. Since the publication of Nakamoto's paper, this excitement has grown way beyond the original Bitcoin. It has led to the promise/emergence of many other new cryptocurrencies, as well as the application of the well known and established concepts of distributed, peer-to-peer applications to supply chains, the [Industrial Internet of Things \(IIoT\)](#), natural resources, environmental sciences, and even the monetization of data.

In DIDO RA 2.0, the goal was to focus less on cryptocurrencies and more on generalizing peer-to-peer, distributed computing. As a parallel effort to the publication of DIDO RA 2.0, several products have been developed to work in parallel with and complement this paper:

- **DIDO Data Model (DIDO-DM)**: captures the conceptual data constructs described in the DIDO-RA including the [Community of Interest \(CoI\)](#) and testing.
- **DIDO Testing Environment (DIDO-TE)**: creates an environment that allows for virtualized testing of a [Distributed Application \(DApp\)](#) before it can be released into the "wild" using real hardware and networks.
- **DIDO Command Line Interface (CLI)**: defines a high level command language with which to send commands to each node covering the configuration, definition, and manipulation of data on distributed nodes.
- **DIDO Reference Implementation (DIDO-RI)**: provides a working interface to the DIDO-DM, DIDO-TE and DIDO-CLI.

In DIDO RA 3.0 the goal was to expand the the focus to include

A Special Thanks. This work would not have been possible without the efforts of:

• Peter Denno, Computer Scientist, National Institute of Standards and Technology (NIST), Engineering Laboratory, 100 Bureau Drive, Gaithersburg, MD 20899

- **[char, nick]Need to update for 2.0 -- keep the paragraph for 2.0 but change to past tense, add a paragraph for 3.0**

¹⁾

S. Nakamoto, "Bitcoin: A Peer-to-Peer Electronic Cash System," 24 May 2009. [Online]. Available: <https://bitcoin.org/bitcoin.pdf>.

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