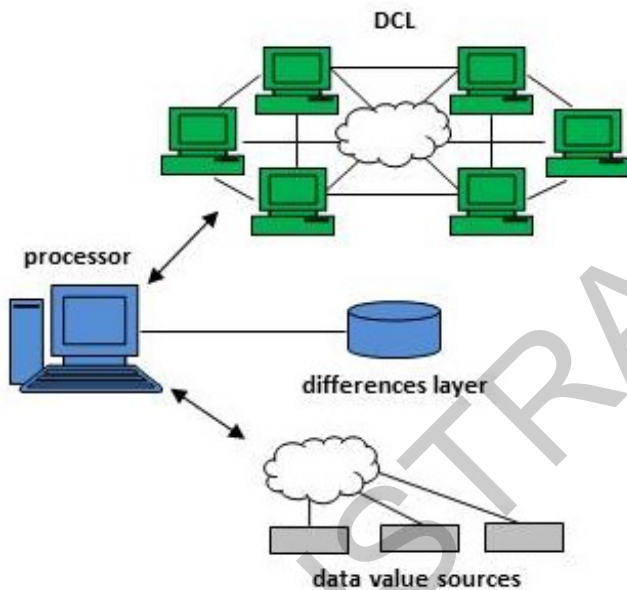## EXECUTIVE SUMMARY

Global trade and shipping requires the complex coordination of worldwide events and the handling of a large number of documents and ledger items at many locations. Containers change hands many times in transport, including ground transportation, sea transportation, customs, and border controls. Some of the largest shippers and enterprise ledger systems providers announced the launch of limited pilot programs in 2018. Over the last year, a number of high profile joint ventures and partnership networks have been announced. More recently, a number of these programs have released technical documentation and have initiated limited full-scale operations.

ILLUSTRATIVE APPLICATION

basic system components include:
- (i) a distributed computer ledger (DCL),
- (ii) a centralized or decentralized differences layer (DL),
- (iii) data values (DV) and data value sources (DVS), and
- (iv) a processor which executes inter-component operations

the figure illustrates a basic system where:

(1) a group operates a global trade tracking & logistics platform,

(2) events, schedules, contents details, weights, and other unstructured raw data items are gathered as descriptive and numerical data values,

(3) an entry is created on the DCL & DL for one or more shipments, and the DL will store structured data items which are linked to a DCL,

(4) shipment data including specifications, customs forms, and certificates are stored on the DL and accessed through the DCL real-time,

(5) parties may track & move the shipment, retreiving necessary items real-time through the DCL and the DL linkage and alignment

'797 UNIQUE BENEFITS

'797's technology enables products and systems where transactions and transaction records are maintained on a blockchain or alternative distributed ledger ("on-chain"), but where the processing and storage of descriptive and/or numerical values are maintained "off-chain". Traditional "smart contract" arrangements are built around "on-chain" operations and "on-chain" external data calls which raise problematic storage, efficiency, and security concerns. '797 separates elements of processing and storage between "off-chain" and "on-chain" components for improved security, data integrity, and improved computer processing efficiency.

COMPETITIVE SPACE

In early pilot projects, retailers and shippers conducted pilot testing where sensor-tracking data was recorded to a database. Fully integrated systems with hybrid storage and transceiving features are a recent development.

SHIPPING & TRADE LOGISTICS DATA ITEMS DIAGRAM

A listing of selected export/import data items and steps -

TRADE LOGISTICS ILLUSTRATION

EVENTS AND MILEPOSTS (selected)

export items
- begin tracking
- container ID and pack
- container inland move
- VGM submission & container sealed
- scheduled vessel departure
- container loading
- vessel departure

import items
- estimated vessel arrival
- import documentation processed
- vessel arrival at terminal
- container inspection
- customs release
- container inland transit completed
- tracking ended

DOCUMENTS AND DATA

Shipping Instructions
Bill of Lading
Export Documentation
Customs Clearance
Import Documentation

BASIC COMPONENTS (summary)

variables, descriptors, events

decentralized/centralized

decentralized/distributed