# Privacy-Preserving Blockchain Solutions

For Tokenization of Bill of Lading as ERC-721 compliant token

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### Current Problems with Paper BoLs



## Expensive

Up to \$180 for 1 Bol



#### Slow

In transit for 5-10 days



#### Unreliable

May be stolen or forged

#### Solution Overview

#### Electronic Solution +

 Reduce cost and temporal inefficiencies associated with sending paper documents

#### Public Blockchain +

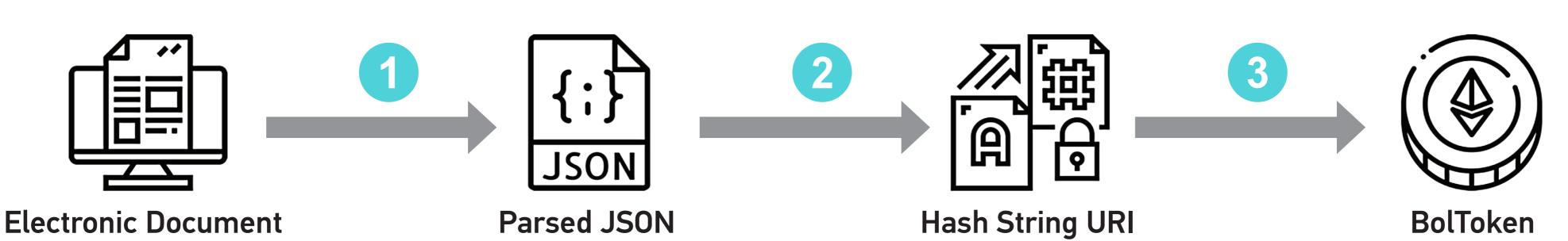
 Decentralized and immutable ledger to keep track of movement of all BoLs

#### **Private Transactions**

 Allow privacy-preserving shielded transactions of tokens to protect user identity and token details

BoLChain is a web platform that provides a streamlined and intuitive application flow beginning from uploading and tokenizing a BoL document to transferring it on an Ethereum blockchain in a privacypreserving manner.

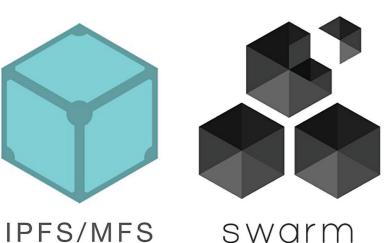
## **BoLChain Workflow**





Docparser is an external data capture solution which parses electronic documents into key-value JSON format based on usercustomizable parsing rules.





swarm

The JSON is stored in distributed storage services with contentbased addressing. Stored information can be located and retrieved by a URI generated using the hash of its content.

Nightfall creates a non-fungible token from the URI and the BoL's details. Tokens can be further minted into a commitment, which leverages zero-knowledge proofs (zk-SNARKs) and shield contracts to ensure future transactions are privacy-preserving.

## Cheaper

<\$15 for private transfer



**Fast** 

5-10 minutes per token



Reliable

Decentralized & Private