

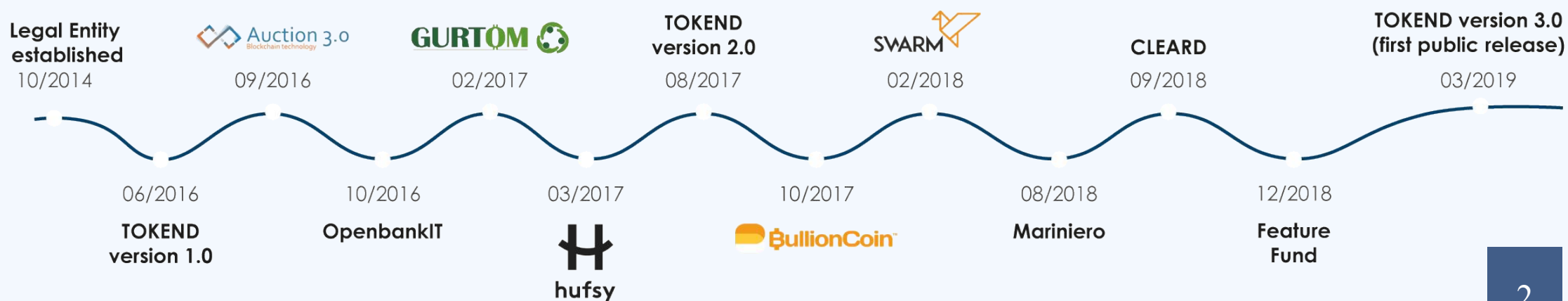
# Secure Healthcare Records Using Blockchain



TOKEND

# TOKEND Blockchain Platform

- Business-oriented blockchain platform for enterprises
- Fast time to market and predictable costs
- More than 14 production projects
- 3 major versions released



# e-Health Pain Points

- Health data are spread throughout multiple systems and aren't available for patients directly.
- Existing systems may not guarantee:
  - *Data interoperability;*
  - *Data integrity;*
  - *Audit trail of changes.*
- Digital transformation of health care and implementation of all-in-one e-Health (EHR) systems is a highly complex task due to the low level of integration and interoperability of today's Health IT solutions
- Centralized technologies implementation introduces higher risks due to a single point of failure

# Data Integrity Verification Solution (DIVS) Benefits

- Single source of truth for all participants, without intermediaries.
- Reduced transaction costs due to disintermediation, as well as near-real-time processing.
- Secure digital identities management enabled by the use of cryptography
- Shared data enables near-real-time updates across the network for all parties.
- Smart contracts create a consistent, rule-based method for accessing the patient data, which can be permissioned to selected health organizations.

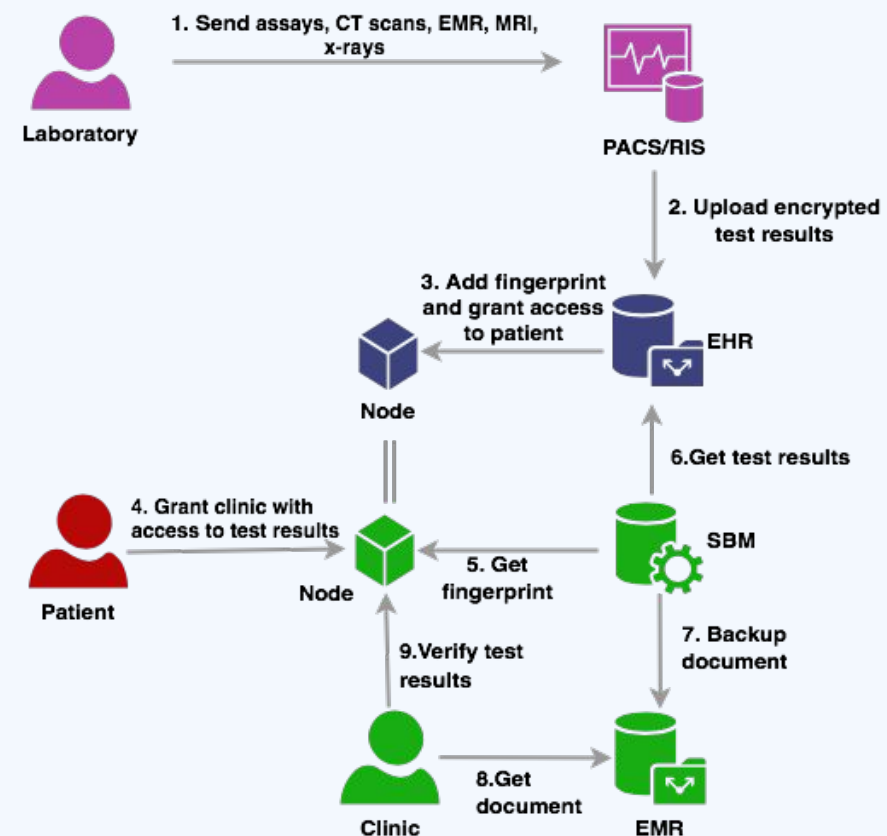
# Data Integrity Verification Solution (DIVS)

## Proof of value for Healthcare

- Ability to share clinical assays and medical histories in real-time can greatly help improve patient care and health outcomes.
- Customer identities increased security by using new blockchain-based digital identity applications.
- No central point of failure.
- Proof of the medical documents immutability & data provenance verification (assays, CAT scans, EMR, MRI, x-rays).
- Secure documents sharing.

# DIVS Architecture Overview

- Cryptographic hash function is used to generate a unique fingerprint of data;
- Data is encrypted on the client side during each data transfer.
- Hash value and digital signature of the data owner is anchored to the blockchain;
- Data is securely replicated off-chain among authorized participants.



EHR – electronic health record  
 EMR – electronic medical record  
 SBM – smart backup module  
 PACS – picture archiving & communication system  
 RIS – radiological information system

# Summary

- DIVS provides tools to securely manage identities and encryption keys, assuring patient's health data integrity, authenticity, immutability and auditability.
- Creates a solid foundation for securely connecting EHR systems with PACS/EMR managed by separate entities while giving patients full control over their data.
- DIVS as key component of the healthcare digital transformation

# Learn More

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