



## **BILLON UNIFIED BLOCKCHAIN**

**On-chain document and data processing –  
a future of the IT and data security**

May 2025

Jacek Figuła - Billon Group

# TECHNOLOGY COMPANY THAT CREATED ITS OWN BLOCKCHAIN SOLUTION

## Billon

High-performance, regulatory-compliant blockchain for on-chain document and data exchange, asset tokenization, and digital cash. Secured by user controlled sovereign identity.



**Robert KAŁUŻA**  
CO-FOUNDER & CEO



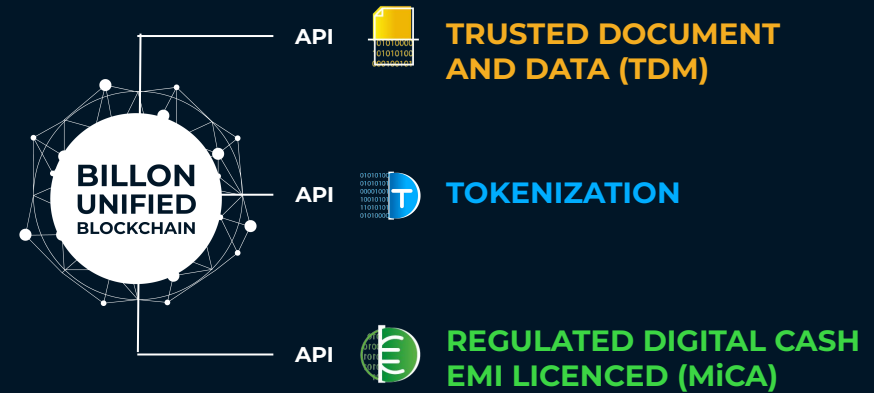
**Andrzej HOROSZCZAK**  
FOUNDER & CHIEF TECHNOLOGY OFFICER



**Bogumiła CEBELIŃSKA-WOZNAK**  
PRODUCT LEADER



**Jacek FIGUŁA**  
CHIEF COMMERCIAL OFFICER



**IP: 11 patents filed**

### CLIENTS



### PARTNERS & ACCELERATORS



### GRANTS & AWARDS



# THE CORE OF BILLON VALUE

## We innovate the protocol layer into the last-mile blockchain

### KEY TECHNOLOGY INNOVATION :

Innovation	Outcome
Blockchain	Durability, Immutability & Transparency
Digital Signature	Proof of origine and time
onChain Dispersion	Cybersecurity & Privacy, Transaction irrevocability
Self Sovereign Identity	End user controlled data and Web 3.0

### KEY PERFORMANCE :



World's leading energy efficiency

0.23 nanoWh / transaction

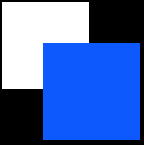


World Class performance

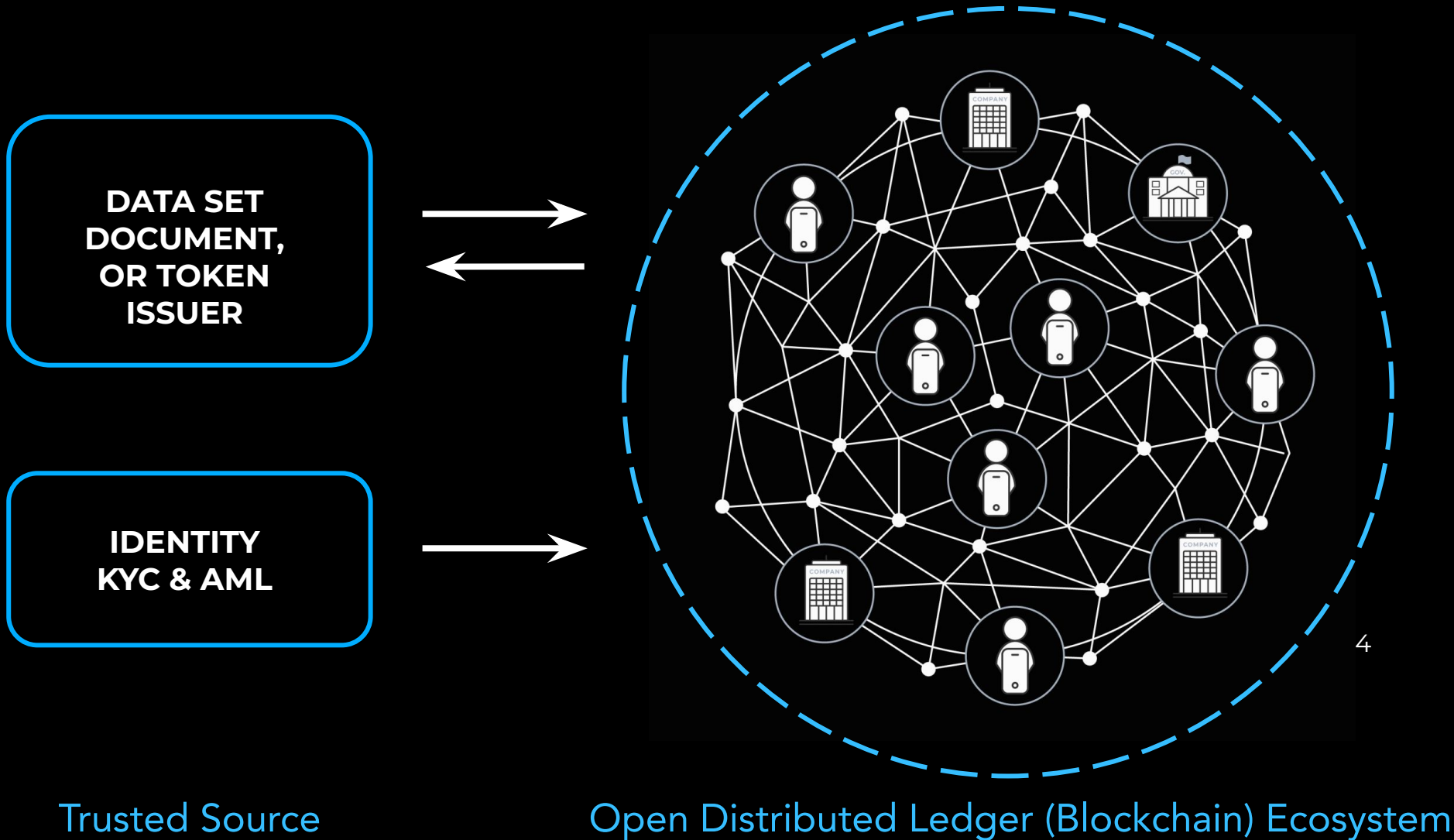
530K transactions per second

Over 10 years of experience on global market

Tailor made blockchain solutions for enterprise



# The architecture



## KEY OUTCOMES:

### 1. DATA PRIVACY

Access only to an authorised party, having blockchain address and own private key set.

### 2. CYBERSECURITY

No central components. Only part of data can be compromised following a successful attack.

### 3. NO INTERMEDIARY

Truly peer to peer custody and transaction solution.

### 4. OPENNESS

Ease of access for read and validation, implying process transparency.

## EU WIDE BLOCKCHAIN IMPLEMENTATION

# Billon selected to EBSI by EU Commission



### European Blockchain Service Infrastructure

project funded by 27 member states to build a pan-European DLT for multiple use cases

Named Top 3 tech for scalability, performance and maturity by EU Commission body - EBSI, part of European Blockchain Partnership:



Outstanding performance 530K transactions per second - it outperforms both best blockchains and legacy systems;



World's leading energy efficiency 0.23 nanoWh / tr (peak efficiency);

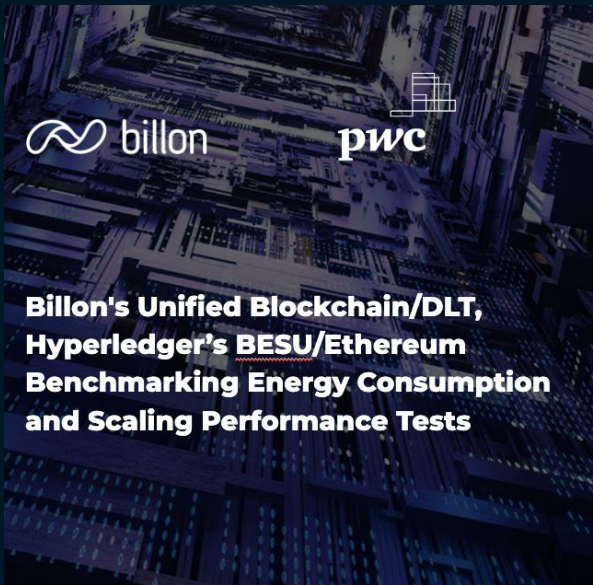
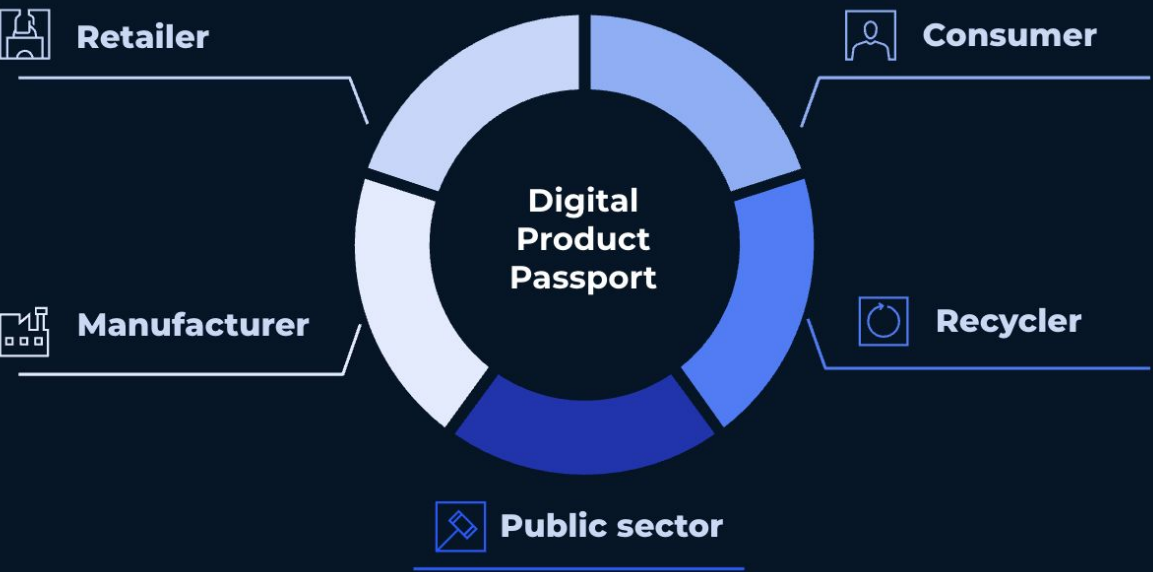
### Large scale tests:

# Digital Product Passport framework (EBSI)

Digital Product Passport is a blockchain-based end-to-end **provenance and traceability solution** that allows companies to digitally record and share information about the product to prove the product origin and sustainability. The solution provides easy access to transparent product information for supply chain participants, supporting objectives of circular economy goals provided by UE.

Performance proven by large scale tests under the supervision of EU Commission (EBSI) and audited by PWC Germany; available here:

[https://files.billongroup.com/uploads/Billon\\_vs\\_Ethereum\\_performance\\_report\\_9e64ab29a0.pdf](https://files.billongroup.com/uploads/Billon_vs_Ethereum_performance_report_9e64ab29a0.pdf)



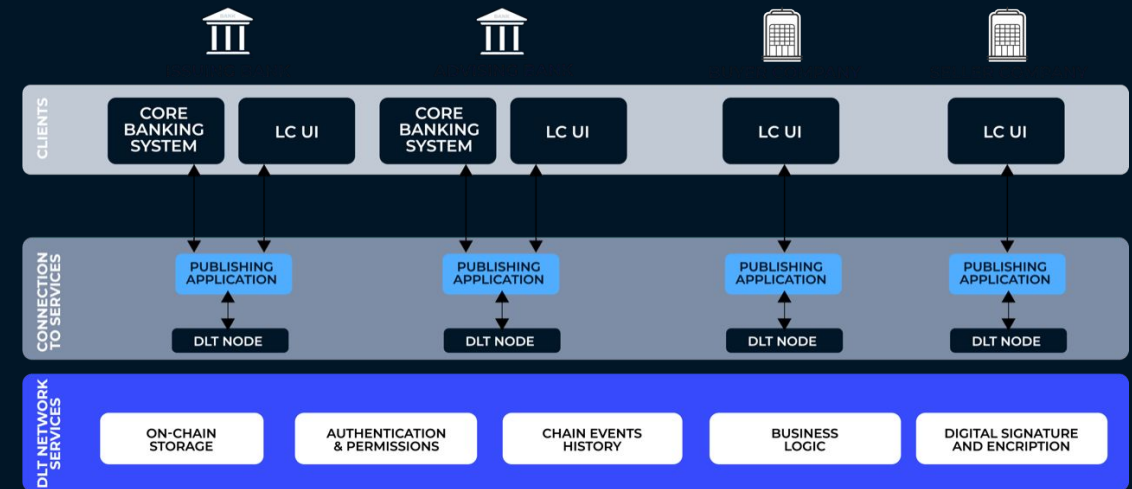
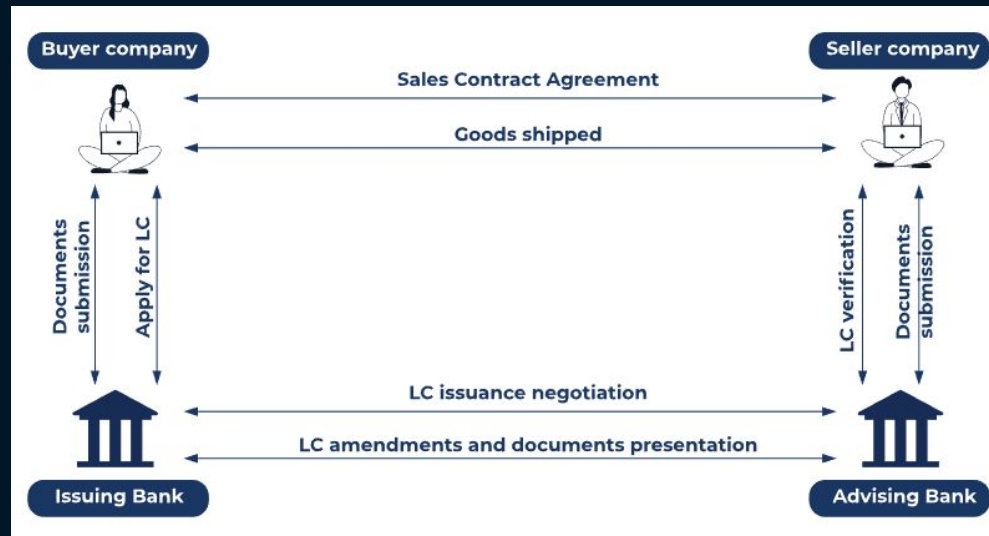
The **European Blockchain Partnership (EBP)** is an initiative to develop an EU strategy on blockchain and build a blockchain infrastructure for public services.



# Reserve Bank of India - Innovation Hub (RBIH)



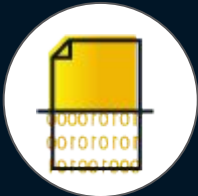
**The exchanged documents (Letter of Credits) cannot be modified or deleted by design, and every information update is visible to the process participants, ensuring a high level of traceability.**



Billon based Multi Party Document Exchange solution allows to issue, certify, store and exchange documents and data directly between multiple enterprises through permissioned shared ledger.

# Trusted Document & Data

MULTIPURPOSE DOCUMENT MANAGEMENT BLOCKCHAIN PLATFORM FOR  
RELIABLE AND TRANSPARENT BUSINESS PROCESSES AND DATA  
AUTHENTICATION



## TRUSTED DOCUMENT & DATA

Documents Delivery  
and Signature

B2C



Documents  
Certification and  
Verification

B2C



Multi-Party Document  
and Data Exchange

B2B



Immutable Data Storage  
and Sharing

B2B



### Send

Confidential and provable  
business communication  
for public and private documents



### Store

Decentralized "on-chain", immutable  
documents and data



### Sign

E-signature on contracts  
linked to validated identity  
on ledger



### Share

Secure data exchange of one  
source of truth, with verifiable  
record of the provenance,  
access and usage



### Verify

On-line verification of document  
origin and ultimate confirmation  
of the authenticity of documents.

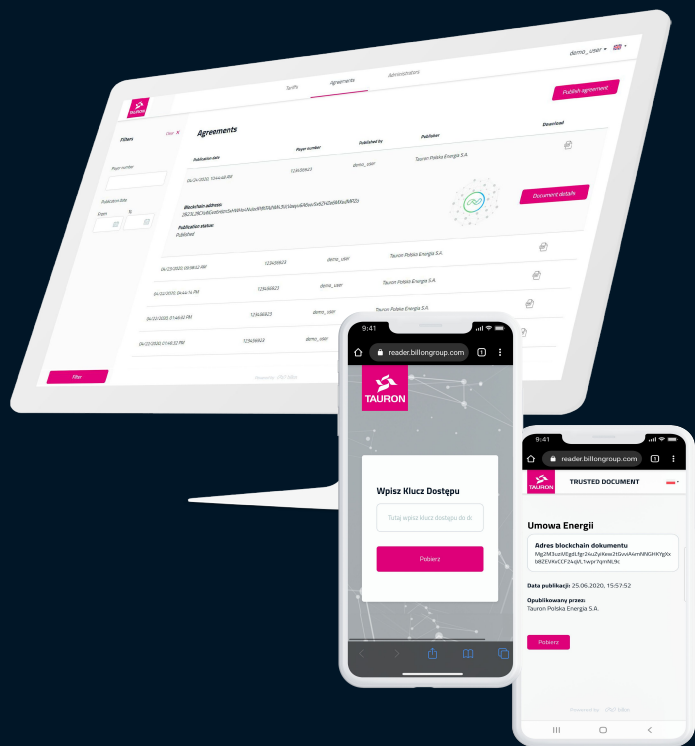


IN COMMERCIAL SERVICE SINCE Q1'2023

# TAURON - Remote Client Contracts on Blockchain



Solution allows for handling entire contracting process digitally with fully digital delivery and signing of legally binding documents.



Legally binding contracts – eIDAS and GDPR compliant



Delivery and receipt confirmation



Trust service providers integration (qualified timestamp, seal, signature)



## WHAT DOES THE SOLUTION SOLVES?

**FROM:** Hybrid & expensive where Energy Agreements completed remotely had to be followed up (+T&Cs) with 'hard' copy

**TO:** All contract documents automatically stored on blockchain and available to clients in real time

## BENEFITS :

- ✓ Cost saving and process efficiency increase eliminating paper and ops steps
- ✓ Achieving regulatory compliance and improved customer experience without own investment in systems
- ✓ Much shorter customer sales cycle

Other possible use cases: any B2C document exchange, contracting process, HR onboarding, client onboarding

IN COMMERCIAL SERVICE - MAY 2023

# Ergo Hestia - Enhanced Data Cybersecurity

**ERGO Hestia, together with BIK implemented the document delivery and exchange solution using Billon Unified Blockchain. Our process gained the additional privacy and cybersecurity of data.**



**ERGO HESTIA  
(PART OF MUNICH RE) IS  
SINCE 2023 THE CLIENT OF  
THE BIK PLATFORM AND  
THE FIRST WITHIN  
INSURANCE SECTOR.**

**THE KEY DRIVER IS HIGHEST  
CYBER SECURITY AND EASE  
OF USE.**



**Blockchain usprawnia obsługę  
klientów ERGO Hestii dzięki  
partnerstwu z BIK i Billonem**

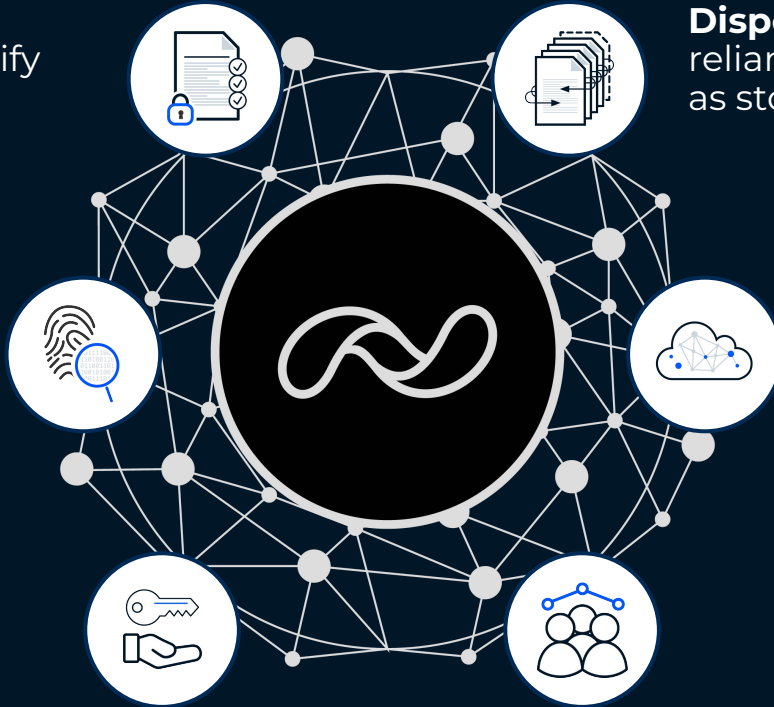


# DLT & Blockchain Key Properties

**Immutability-**  
in practical terms impossible to modify past entries

**Transparency-**  
no way to hide an entry from an entitled/ authorized party

**Cryptographic security-**  
every data entry mathematically verifiable and encrypted where needed



**Decentralization & Data Dispersion** and replication reliance on distributed database as storage

**Distributed transactions-**  
transactions are processed P2P without involvement of central infrastructure

**Accessibility**—permanently accessible to entitled parties



## Security & data protection

Decentralizing data storage in a way that prevents any one single storage device from containing a complete copy of the data



## Immutability & Transparency

Blockchain leverages a decentralized ledger within which every entry on the ledger is mathematically tied to previous ledger entries.

# On-Chain Trustless Storage & Sharing: 70-year Evolution of IT Architecture

## CLOUD COMPUTING ("serverless")

- Improved client-server
- Auto-clustering, large data
- Eliminates admin hassle



2010

## EARLY INTERNET (CLIENT-SERVER)

- Two-Way Sending Of Data
- Unable To Process Shared Data
- Data silos



1990

## EARLY COMPUTING (MAINFRAMES)

- Local Processing
- Isolated data



1952

NEW

2020



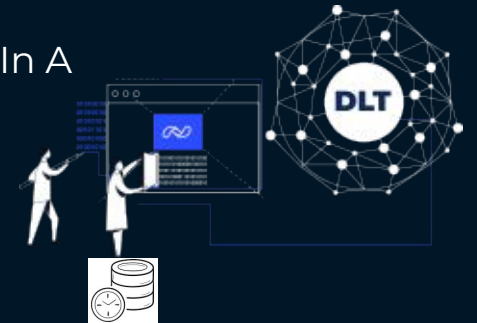
## ON-CHAIN UNIFIED DLT (Billion Blockchain)

Full Multi-Party Processing,  
Sending And **Storing Of Shared  
Private Data** with autoscaling



## EARLY BLOCKCHAINS

- Multi-Party Processing But Only Small & Public Data Objects
- Unable To Store Full Content Of Data In A Shared Manner (Only Hash'es Are On-Chain)
- Additional System For External Large Data Object Storage Is Needed
- Eliminates admin hassle



# The difference between on chain and off chain storage

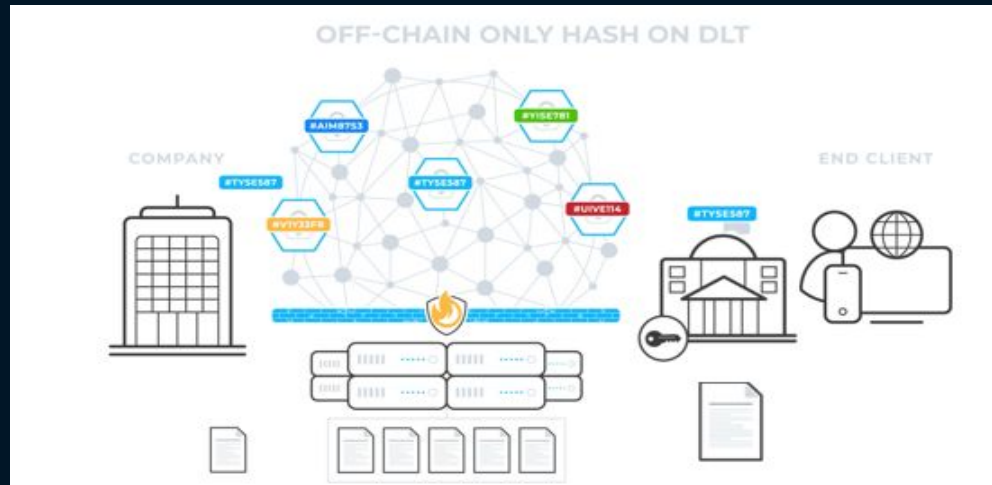
## OFF CHAIN

Only hash on-chain and documents kept separate on central servers

Possibility to lose a document by e.g. hardware manipulation

Possibility to restrict the access to the document for End User

The server is under administrator's control, blockchain only provides information regarding the existence of a document



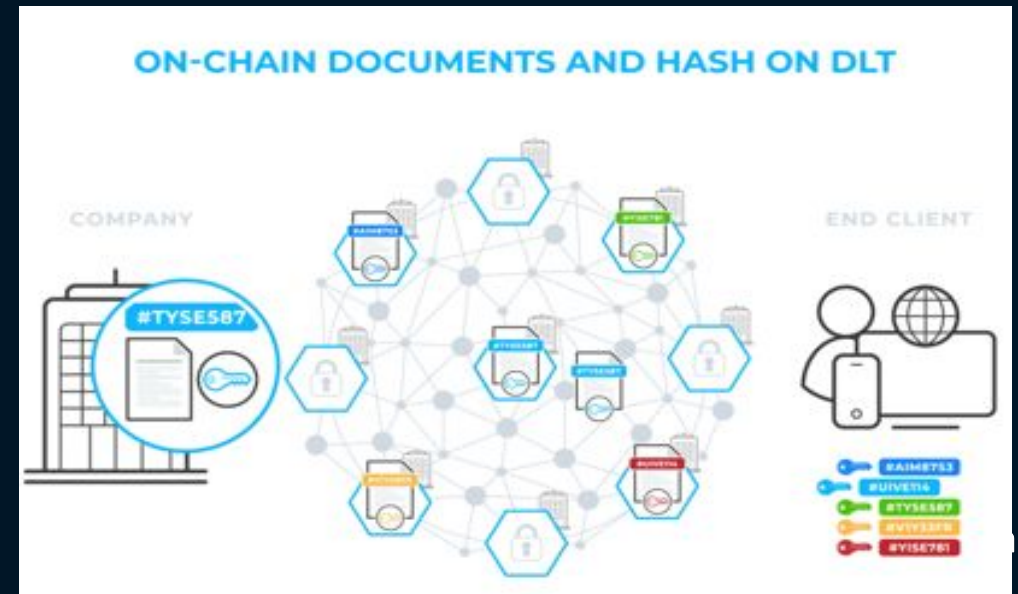
## ON CHAIN

Entire document stored in blockchain which provides automatic backup and security that the document will not be erased or modified by anyone

It is technically impossible to unilaterally modify or erase information providing possibility to preview documents in unaltered format

Client-side encryption where data can only be viewed on the client side, data is isolated from server-side access

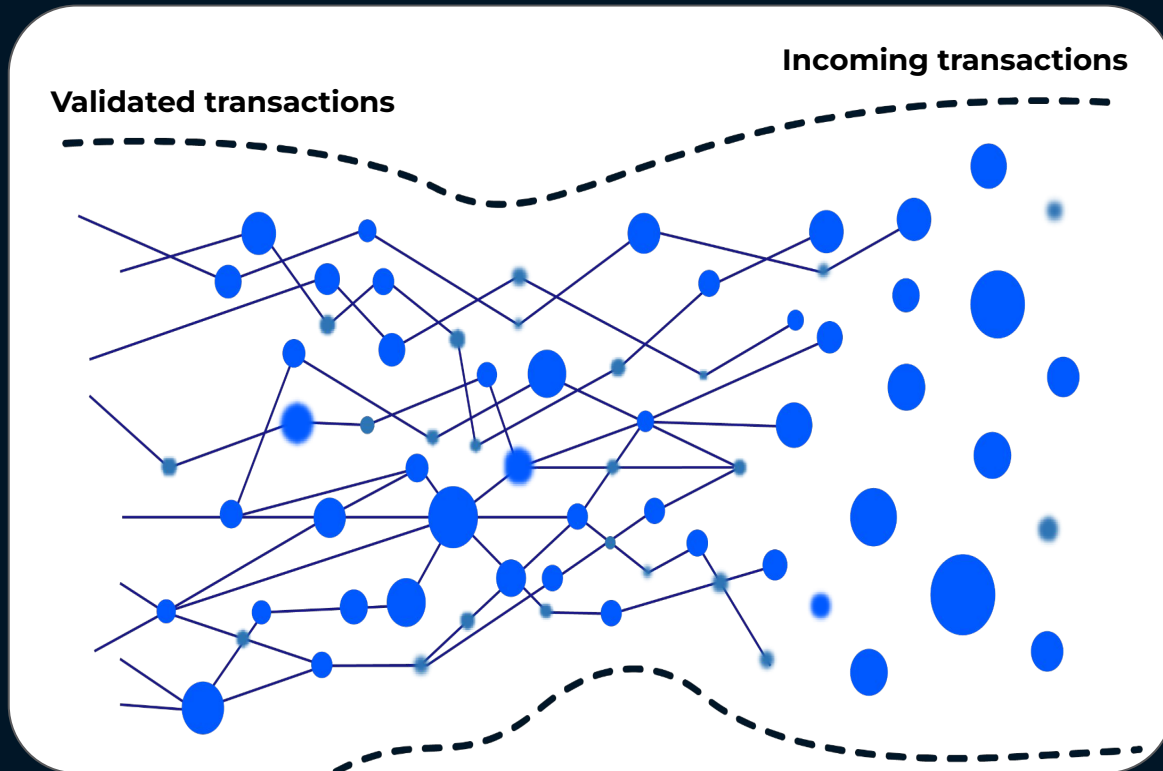
Ongoing and unrestricted access to the content over a conveniently long period of time





# TDM on Unified DLT with consensus-agnostic approach

**For on-chain documents and large data objects default consensus for large operating groups establishes proof of sequence of history**



**Every participating node validates submitted publications on fair usage basis with the graph correctness of the preceding history of documents**

## Multi-Dimensional Directed Graph (DAG)

- All individual transactions are interlinked into provable history
- There is no need for notaries nor for central coordinator, as every processing node is the center of its own universe (graph)
- Every publisher node is also a maintenance node
- For high volume publishing organizations, additional dedicated maintenance nodes help to achieve fair usage-principle
- Minimum number of nodes to operate is 1 per publishing organization and 5 per operating group; there is no maximum

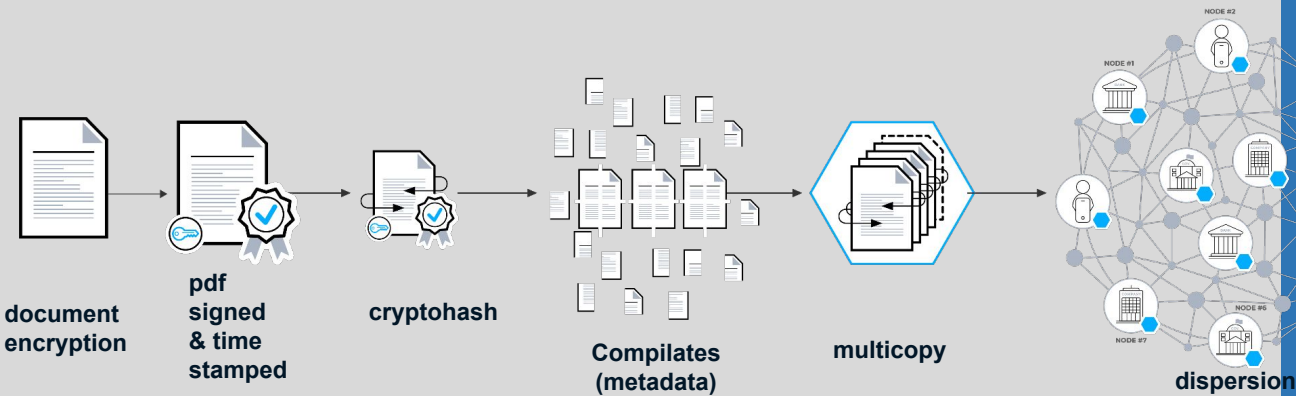


# Documents decomposition - Compilates from Private Documents

## Publication and decomposition

Every private document encrypted with a unique key, transformed into elements called “compilates” that are recorded individually in the DLT. Stored data is immutable with built-in redundancy.

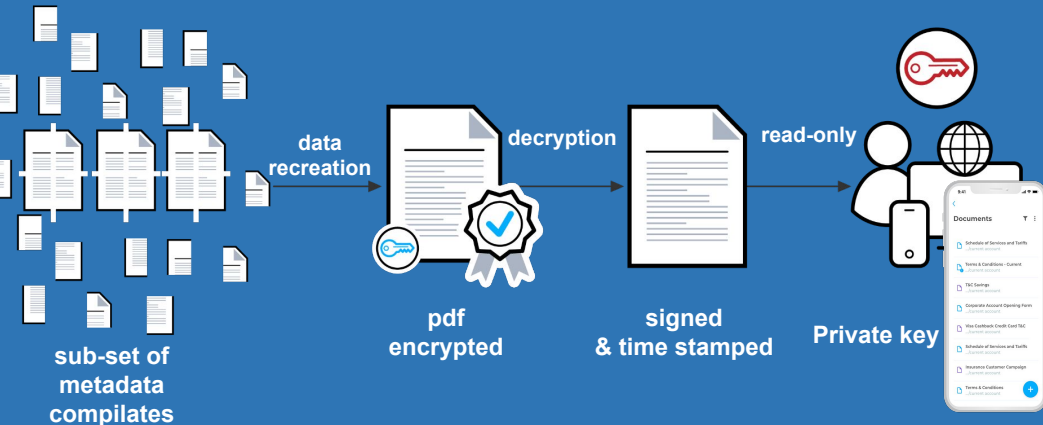
**stored data is immutable and massively redundant**



performed on local user device

## Retrieval and decryption

Accessing private documents requires an end user to authenticate themselves, e.g. by logging in a Billon application. The application will automatically start retrieving the requested document(s) and will use the end user's private key to assemble and decrypt them.



final decryption performed on local user device

# Tech breakthrough: On-Chain Sensitive Data & Documents

Shared single source of truth needs to be provably secure

## HOW IT WORKS:

- mathematical fragmentation of data suitable for even most sensitive data
- **information-theoretic security** on decentralized network (quantum ready)
- **immutable storage of data in its indirect representation** (compilates)
- processing of data while in its fragmentary form (Secure MPC)
- suitable for automated **data pattern extraction** (Artificial Intelligence)
- **leak-proof way of quarrying sensitive data** (ZNP)

## KEY LEARNING:

on chain data is totally safe and fully quantum ready

## ON-CHAIN - WHY?

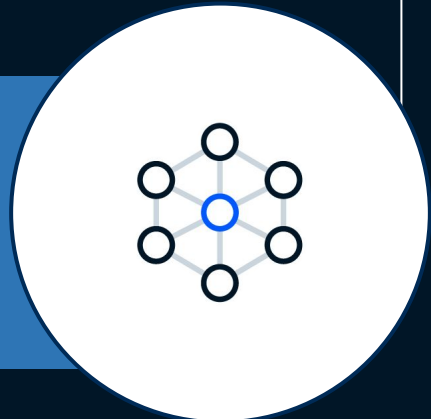
**Reduce risk** of single point of failure  
-independent from vulnerable, external databases,

**Fully decentralized** system where documents and data are not controlled by one institution;

**Documents availability**, the access to data and documents cannot be blocked or lost once published,

## RESULT

- ✓ Sensitive Data is under technical control of each user individually via Sovereign Identity





# Billion approach to smart contracts - Dynamically Loadable L2 Code

Dynamically Loadable L2 Code functionality purpose is to allow Billion Unified Blockchain users to write, publish and execute shortcode snippets:

- standard and wide-spread language JS/TS rather than via specialised & niche languages like Solidity;
- access to blockchain functionality via system library rather than via custom language extensions;
- possibility to **interact with: virtual assets, national currencies, on chain data publication, off-chain data** and external oracle access
- Instead of the concept of “gas” and CPU cycle pricing, we are implementing a step cost approach via a system of limits controlling execution thresholds. The limits are assigned to users wishing to deploy and execute code on the blockchain;
- both public and private code is supported with user-definable groups participating in contract code execution;
- built-in contract discovery service based on tree-like structure of contracts' classification. The primary benefit of contract discovery is that users do not need to resort to sometimes untrustworthy websites for finding out what smart contracts have been published. Additionally, when combined with our on-chain accessibility of contract source code, it provides a basis for code reflection capability for the code itself to be aware of itself and what other contracts have been published - including contract diffs & version control awareness



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last-mile, multi-assets blockchain platform



# Operating groups and heterogeneous nodes in Billon's DLT



- **Operating Groups** - independent cohort of nodes that validates transactions
- **Share data between different Operating Groups** there is a mechanism that allows to interact with other groups and allows to
- **Supervisory node** - each group has a Supervisory node that sets the rules for legal compliance and choice of cryptographic protocols; provisions privileged nodes but does not participate in transactions