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Blockchain certificates for intellectual property management

STARTUP CORPORATE EXCHANGE
www.scxmeetup.com
Meetup

Munich, 25.01.2018

Why the blockchain will revolutionize IP

How to make your company future-proof?

Together with partners, create a **blockchain-based alternative** for conventional IPR that is quicker, more transparent, impossible to manipulate, and works without middlemen.

Dennemeyer
The IP Group

We need to be aware that with blockchain technology the private sector will become an **ancillary record keeper**.

-- Francis Gurry
WIPO Director General

WIPO
WORLD
INTELLECTUAL PROPERTY
ORGANIZATION

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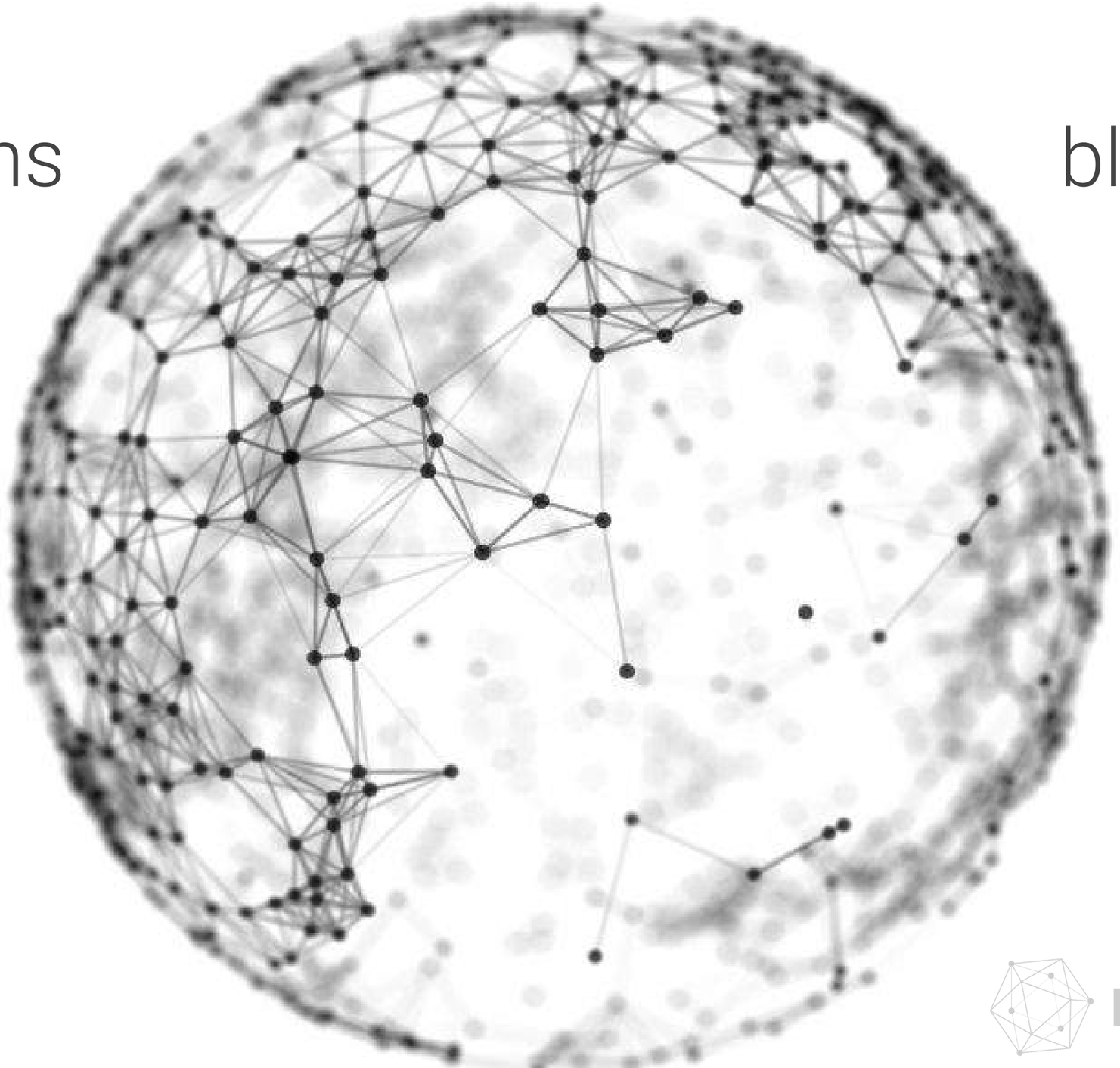
Public blockchains

Decentralized
Permissionless
Uncensorable
Resilient



Private blockchains

Distributed
Permissioned
Trust based

ethereum

bitcoin

ripple

HYPERLEDGER

Public blockchains are a new common

{Common: a resource accessible to all members of a society, including natural materials such as air, water and a habitable earth. These resources are held in common, not owned privately.}

A public blockchain is a public registry
with very unique features

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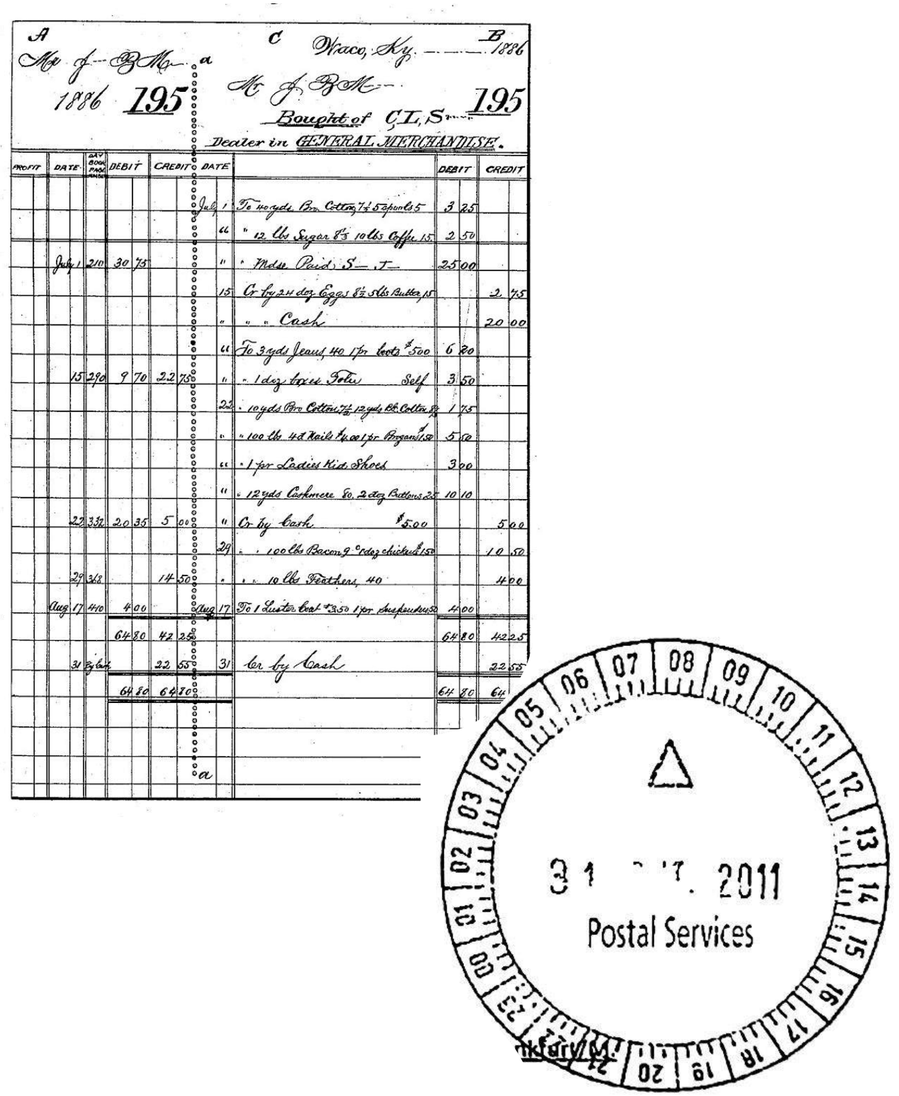
Transactions and timestamps

- The blockchain only contains transactions (no files, no documents, …)
- Each transaction includes a timestamp (10 min average accuracy for Bitcoin)

How can we use the blockchain as public record if we are not able to store data on it?



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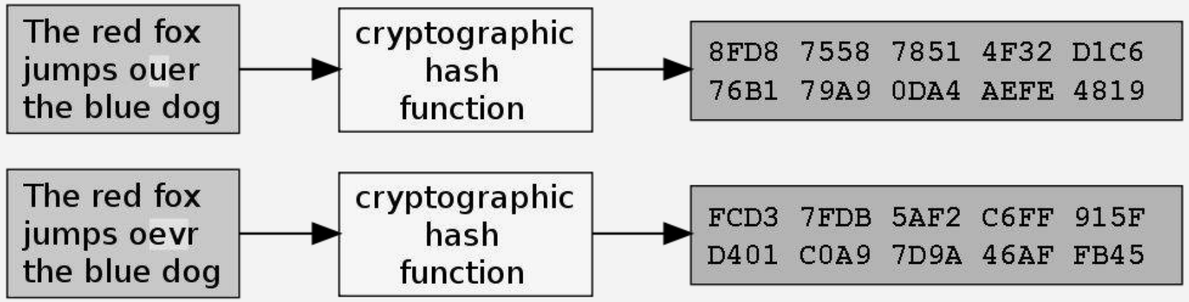
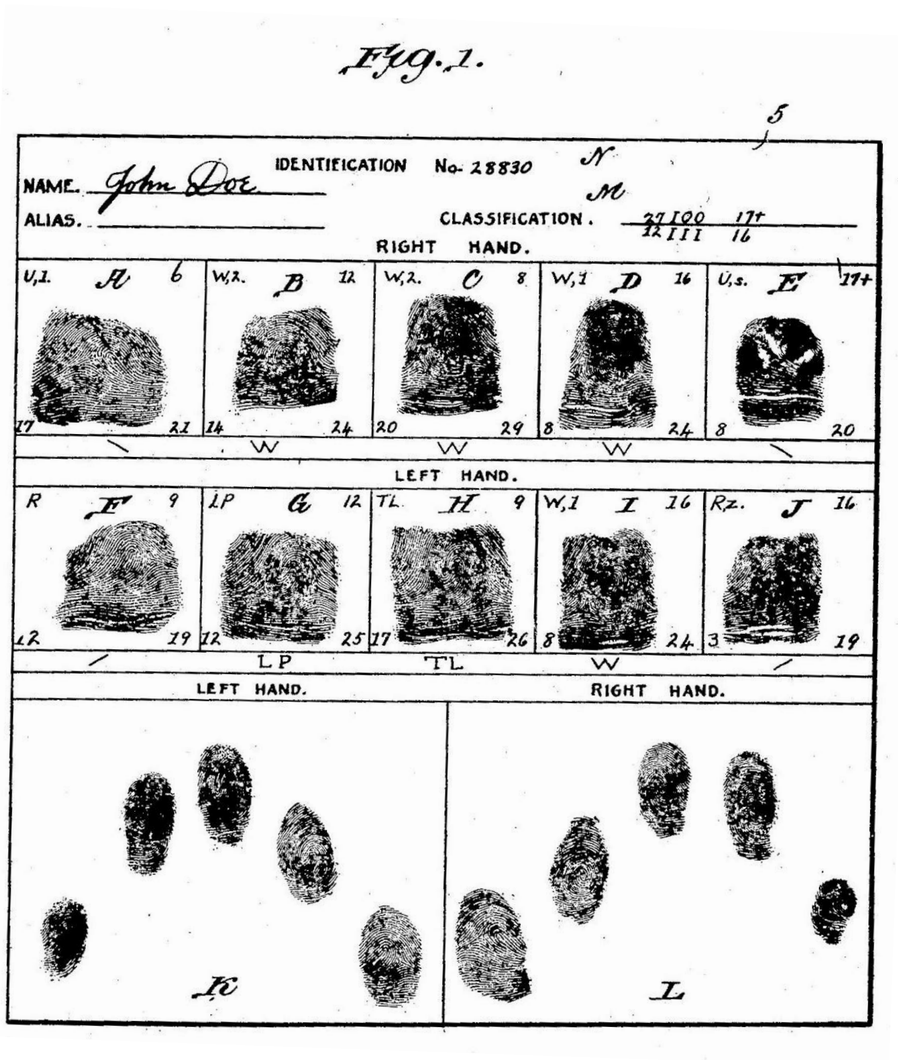
Cryptographic fingerprints

Any arbitrary set of data can be reduced to short string of bits, called a **hash**.



The Bitcoin protocol allows a few options for adding short textual data to a transaction.

⇒ **We have a public registry!**



The challenges of IP management

Multifaceted and complex:

- Securing trade secrets
- Claiming copyrights
- Proving prior use
- Make defensive disclosures
- Confidentiality agreements
- Technology licenses
- ...

Risks: product delays, wasting R&D money, legal costs, going out of business, litigations, ...

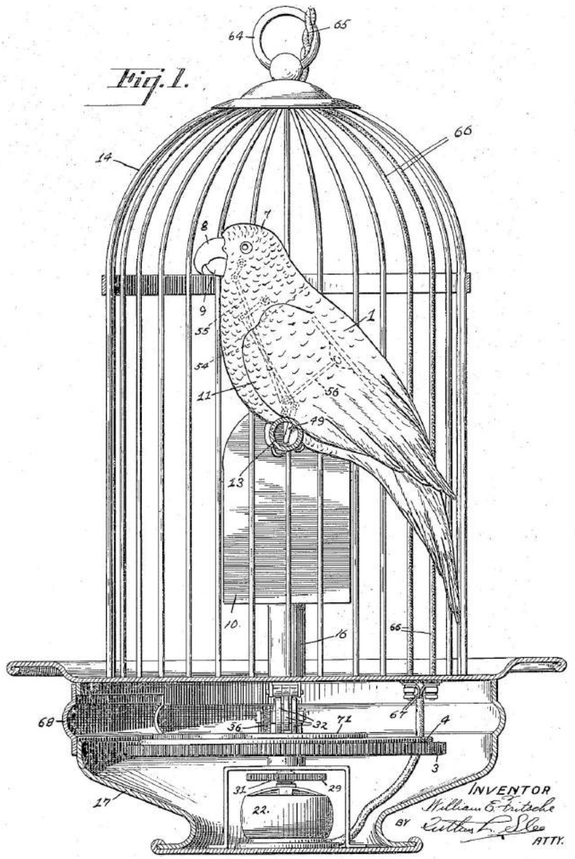
Patent trolls

Competitors

Employees

Hackers

Partners



The blockchain allows companies to create solid foundations to neutralize these risks.

At **low effort** and **low cost**.

The whole innovation lifecycle on the blockchain

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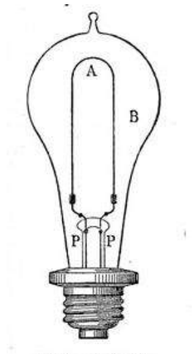
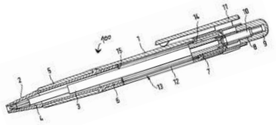
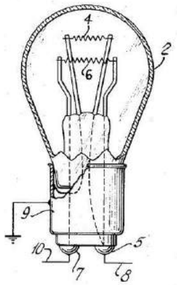


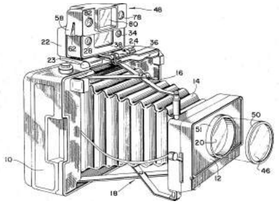
Invention
March 2016



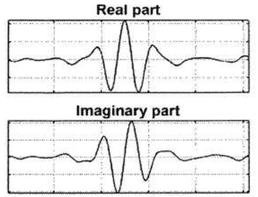
Lab notes
Proof of use
May 2016



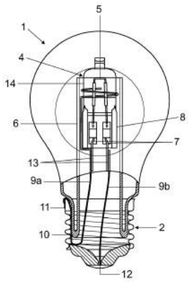
Updated invention
October 2016



Lab picture
Proof of use
January 2017



Lab dataset
Proof of use
February 2017

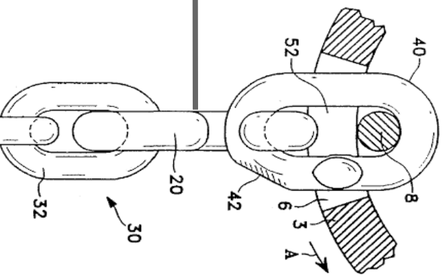


Updated invention
April 2017

Private

Public
Disclose inventions on a decentralized file system (IPFS).

Invention disclosure
November 2017



Blockchain

Bernstein solutions for a future-proof IP portfolio

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Bernstein is a web service that allows innovators to **register IP assets on the blockchain**.

Bernstein's unique protocol will create blockchain certificates that can prove: **existence**, **integrity** and **ownership**.

Blockchain certificates are linked together to create a **trail of records of the whole innovation lifecycle**.

To improve security and reliability, Bernstein protocol is deployable on **multiple blockchains**, both public and private.

Bernstein also provides digital certificates issued by **timestamping authorities**.

- EU - Bundesdruckerei
- China - Unitrust
- Japan, USA, Korea - coming soon

bitcoin

Sidechain Elements

ethereum

BUNDES DRUCKEREI

联合信任 UNITRUST

TIME BUSINESS

KICA Korea Information Certificate Authority

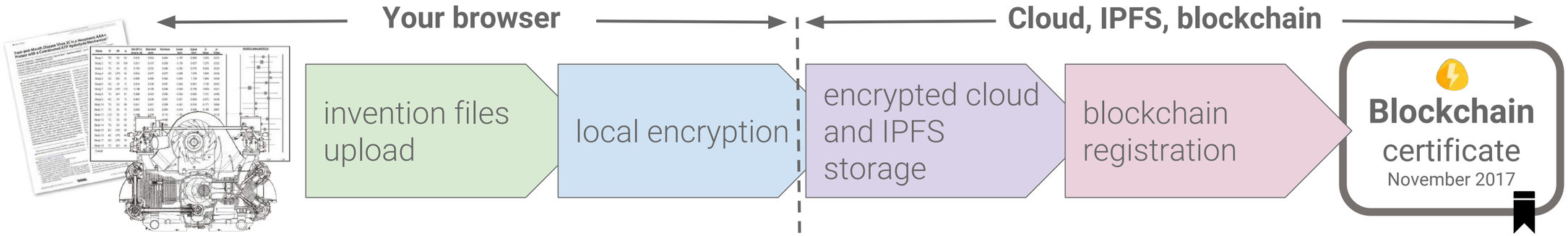
How does Bernstein work?

IP owners just need to select their files, and Bernstein will take care of:

1. inserting a cryptographic fingerprint of the files in a bitcoin transaction
2. encrypting all files and associated metadata in the user's browser
3. upload an encrypted copy of the files on an immutable repository

This bitcoin transaction is the root of the blockchain certificate issued by Bernstein.

- IP assets are **not disclosed to anyone**, not even to Bernstein itself.
- Bernstein certificates are **independently verifiable** by any third party exclusively against the blockchain.
- The encrypted content of your innovations can be **stored at multiple locations**: cloud, local, IPFS.



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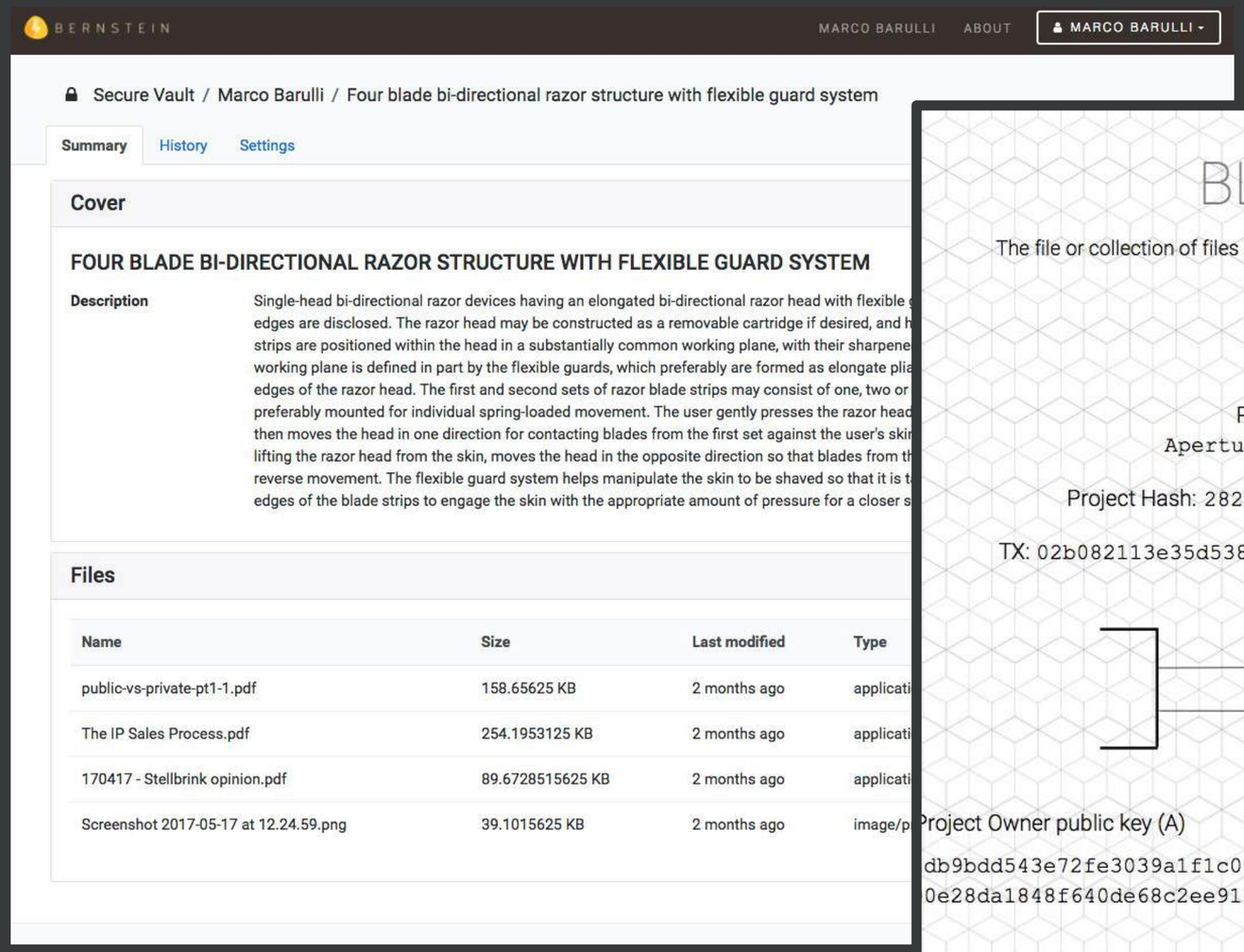
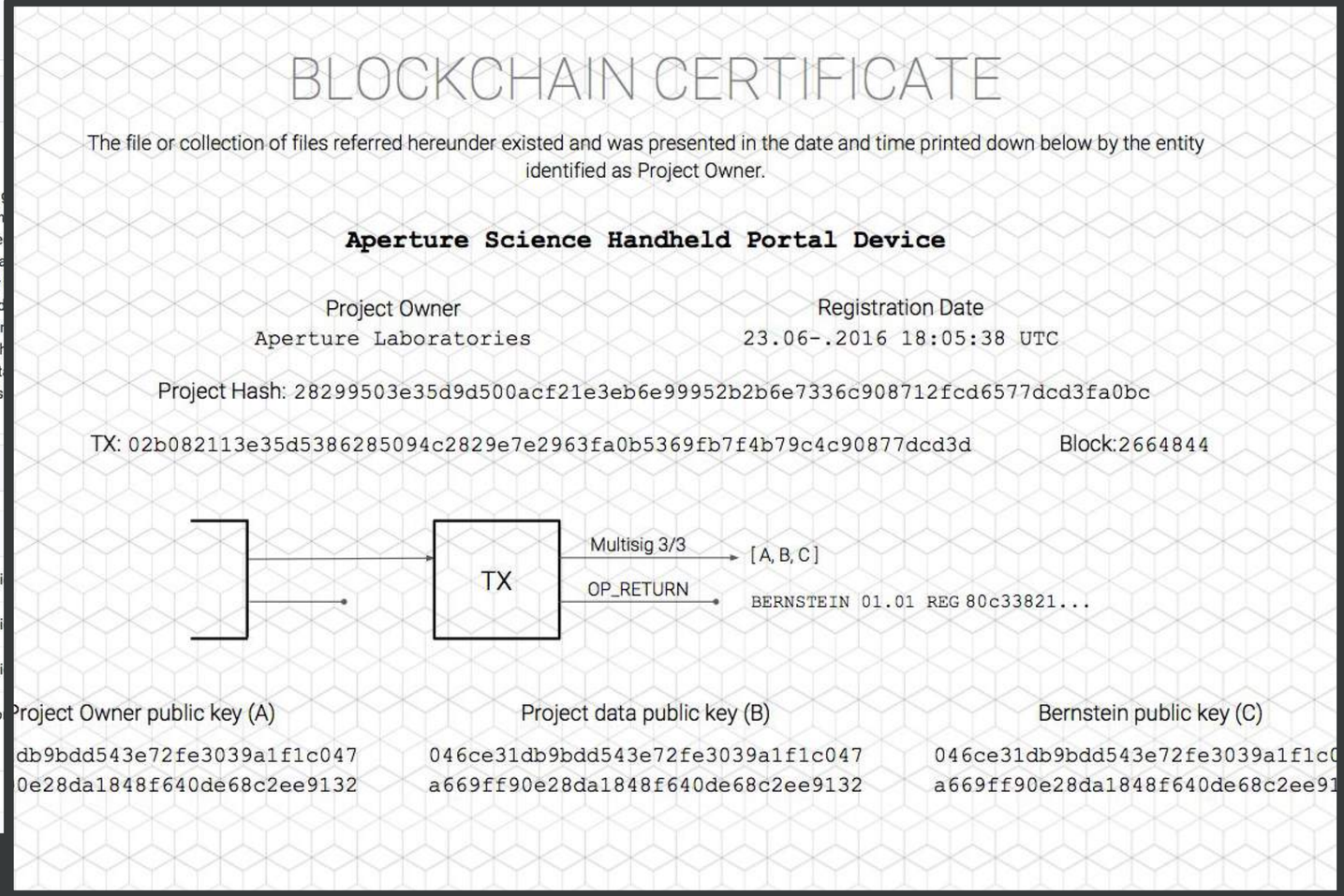
Bernstein blockchain certificates



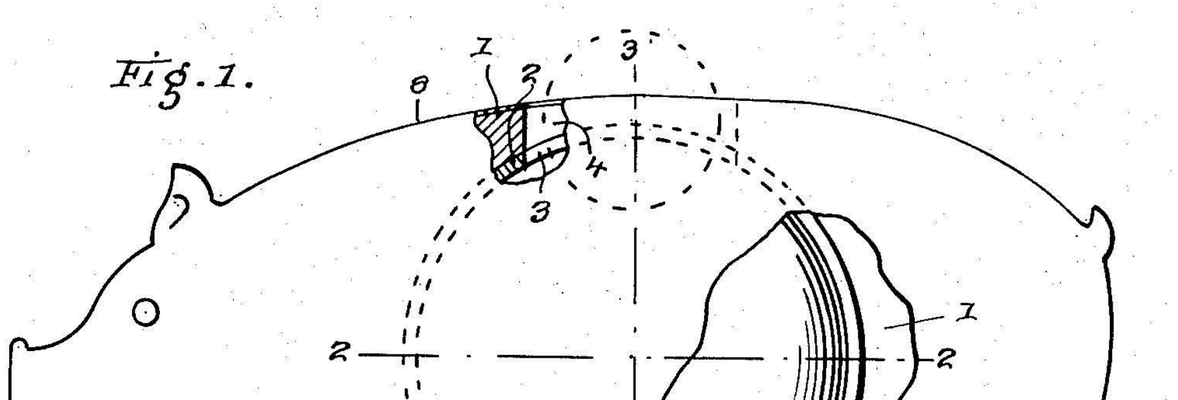


Benefits of blockchain certificates

- Secure trade secrets
- Prove prior knowledge
- Prove prior use
- Fight patent trolls
- Deter unloyal employees and partners
- Define and protect the largest IP perimeter

- Secure copyright
- Keep your privacy
- Notarize every file format
- Save time, save money
- Easy deployment even to large, dispersed organizations.

In a first-to-file world, defensive IP strategies are becoming increasingly important.



Use case

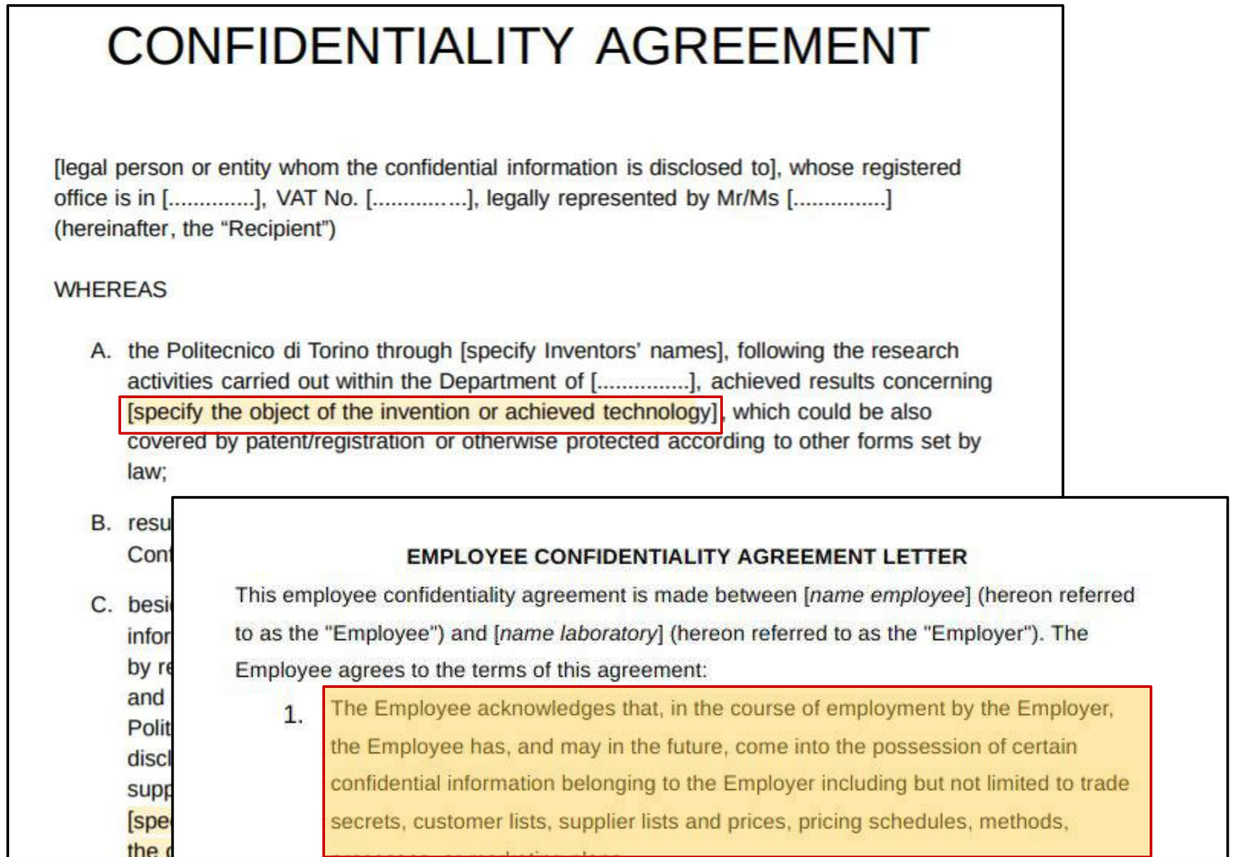
Enhanced confidentiality agreements

The NDA dilemma:

- broad ⇒ unenforceable
- specific ⇒ complex, discloses trade secrets

Blockchain enhanced NDA:

- simple, strong, private



CONFIDENTIALITY AGREEMENT

[legal person or entity whom the confidential information is disclosed to], whose registered office is in [.....], VAT No. [.....], legally represented by Mr/Ms [.....] (hereinafter, the "Recipient")

WHEREAS

A. the Politecnico di Torino through [specify Inventors' names], following the research activities carried out within the Department of [.....], achieved results concerning [specify the object of the invention or achieved technology], which could be also covered by patent/registration or otherwise protected according to other forms set by law;

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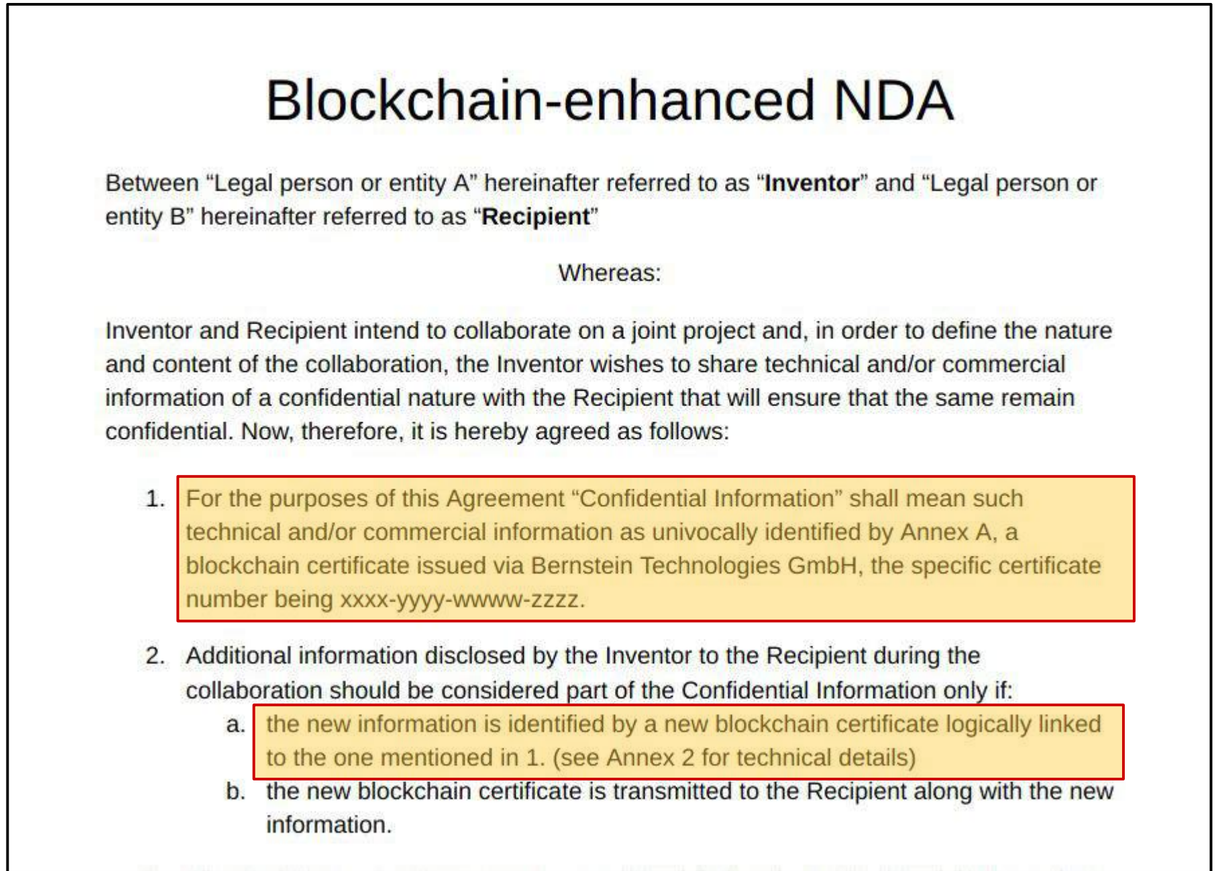
EMPLOYEE CONFIDENTIALITY AGREEMENT LETTER

This employee confidentiality agreement is made between [*name employee*] (hereon referred to as the "Employee") and [*name laboratory*] (hereon referred to as the "Employer"). The Employee agrees to the terms of this agreement:

1. The Employee acknowledges that, in the course of employment by the Employer, the Employee has, and may in the future, come into the possession of certain confidential information belonging to the Employer including but not limited to trade secrets, customer lists, supplier lists and prices, pricing schedules, methods,



Blockchain-enhanced NDA

Between "Legal person or entity A" hereinafter referred to as "**Inventor**" and "Legal person or entity B" hereinafter referred to as "**Recipient**"

Whereas:

Inventor and Recipient intend to collaborate on a joint project and, in order to define the nature and content of the collaboration, the Inventor wishes to share technical and/or commercial information of a confidential nature with the Recipient that will ensure that the same remain confidential. Now, therefore, it is hereby agreed as follows:

1. For the purposes of this Agreement "Confidential Information" shall mean such technical and/or commercial information as univocally identified by Annex A, a blockchain certificate issued via Bernstein Technologies GmbH, the specific certificate number being xxxx-yyyy-wwww-zzzz.
2. Additional information disclosed by the Inventor to the Recipient during the collaboration should be considered part of the Confidential Information only if:
   a. the new information is identified by a new blockchain certificate logically linked to the one mentioned in 1. (see Annex 2 for technical details)
   b. the new blockchain certificate is transmitted to the Recipient along with the new information.

Use case

Securing 3D models

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Copyright claims: the traditional way

3D model → redacted 3D model → Copyright office

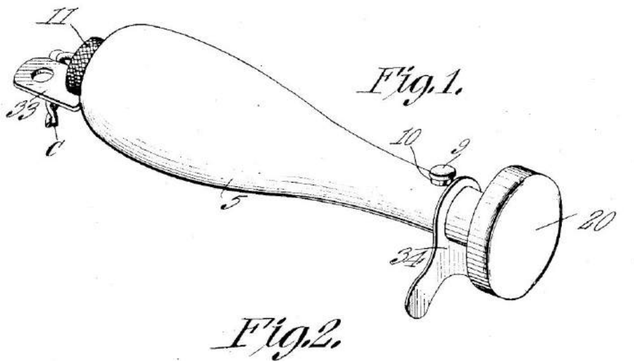
- Slow and inconvenient
- Reveal trade secrets
- Expensive
- Limited geographies

Copyright claims: the blockchain way

3D model → BERNSTEIN → **Blockchain** Certificate May 2017

- No need to redact files
- Perfect confidentiality
- Strong ownership claim
- Convenient, quick, global.

Consistent enforcement and **statutory damages** may dissuade infringers (anyone with a 3D printer). But strong copyright claims are required.



IndustryWeek

3D Printing May Lead to Increased Copyright Litigation

Mar 13, 2017

Use case

Better defensive publishing

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Defensive publishing is getting more popular, but it is not trivial neither cheap to execute in a robust and indisputable way.

In-house

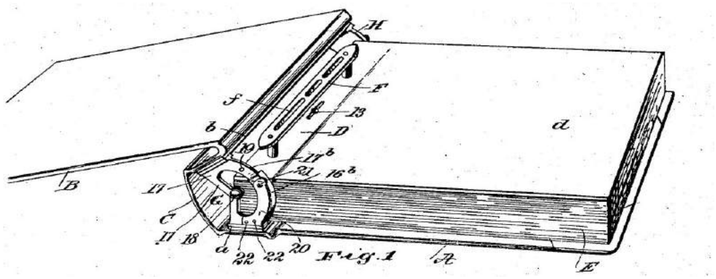
- publication date can be challenged
- public availability is hard to prove

Commercial services

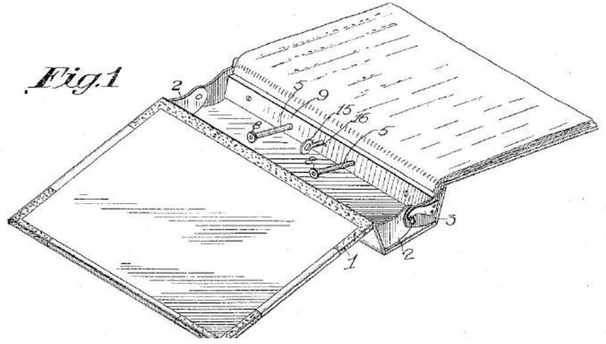
- expensive
- limited visibility, for paid access

Blockchain registration + IPFS publishing

- robust and indisputable timestamp
- proven public availability
- optionally anonymous
- convenient and inexpensive
- always secures the largest perimeter
- not just for documents (datasets, visuals, ...)
- freely available to anyone



Disclosure
certificate
October 2017



Legislators are paving the road for blockchain records

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What is missing? Identity!

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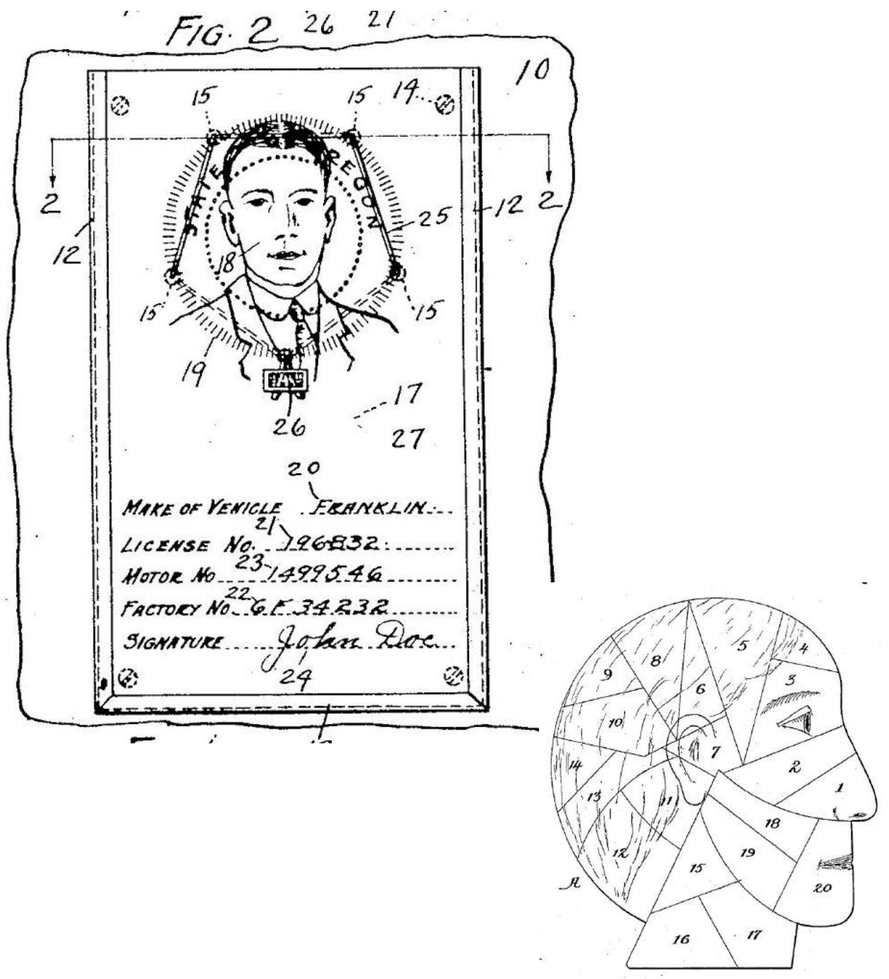
Blockchain certificates “only” creates a link between some data and the owner of a specific secret.

The blockchain lacks any identity feature.

Therefore a **traditional legal framework** that makes the best use of the certificates is **still needed**.

The futures of identity

1. self-sovereign
2. authorities embrace blockchain

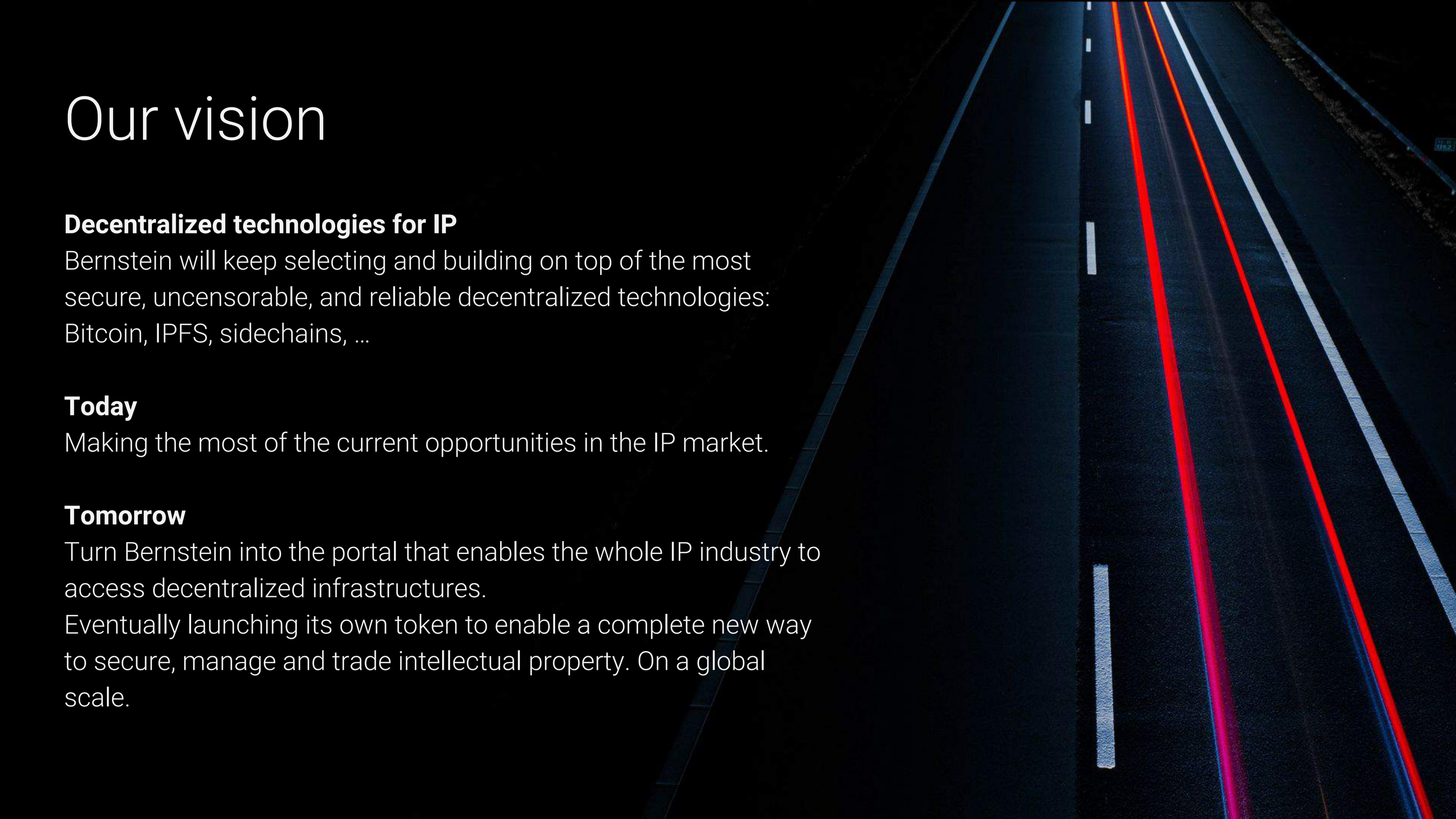


Our vision

Decentralized technologies for IP
Bernstein will keep selecting and building on top of the most secure, uncensorable, and reliable decentralized technologies: Bitcoin, IPFS, sidechains, …

Today
Making the most of the current opportunities in the IP market.

Tomorrow
Turn Bernstein into the portal that enables the whole IP industry to access decentralized infrastructures.
Eventually launching its own token to enable a complete new way to secure, manage and trade intellectual property. On a global scale.



Team & Contacts

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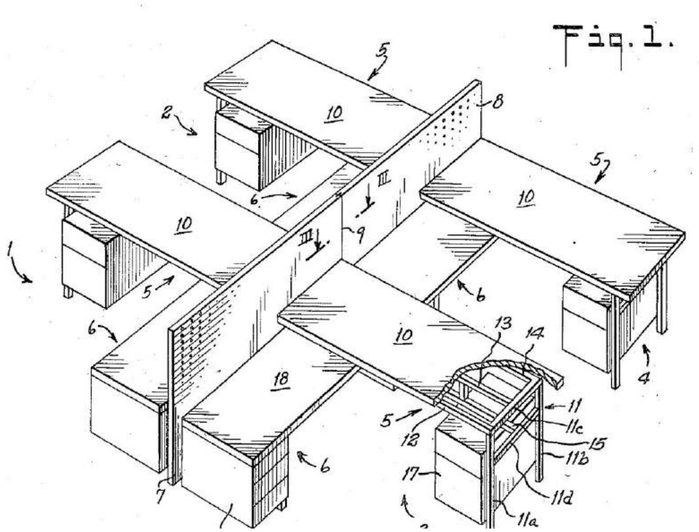
Managing Director

Paul Reboh
Chief Technology Officer

Jean-Maxime Rivière
Business Development



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