Open Source Decentralized Network
Ensuring Provenance for Digital Media
Created by Humans & AI

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Delivering Accessible, Trustworthy & Verifiable Content

By indexing and storing on-chain data we are able to create comprehensive digital media histories that can be traced back to its origins.
Records are on the blockchain and immutable. Which helps in building the foundation of the trust.

All records are transparent and are easily accessible. ERC standards allow all open-sourced developers to build together.

Can leverage the Web3 ecosystem including the decentralized storage, allowing users own their own data, and the broader creativity economy such as NFT.
Numbers
Content
Infrastructure

**Capture SDK**
Developer tools to allow developers adopt provenance standards such as IPTC, C2PA easily

**Capture Cam**
Mobile app for quickly taking photos with content integrity assured

**Capture Dashboard**
Manage and monitor tools to manage content and its metadata

**Blockchain Proof**
Eco-friendly, fast and reliable blockchain
Use Case: 2020 US Post-Election Archive (Reuters)

78 Days
Creating a Photographic Archive of Trust

A Starting Lab Case Study
Use Case: Ukrainian Children’s Drawings (MISW Museum)
Use Case: War-crime Evidence (Rolling Stone)
Use Case: 318 Sunflower Protest Archive (哲攝, Taiwan)

太陽花10週年 影像紀實資料庫
Mar 18 - Apr 10, 2014 | Taipei, Taiwan
Use Case: 2024 Election Archive (Local media outlets)

Indonesia 2024
Rebuilding Digital Trust
01.02.2024 14.02.2024
Pemilu Indonesia 2024
Otentikasi & Pelestarian Media

Taiwan, Indonesia, India, US

India 2024
Rebuilding Digital Trust
01.03.2024
India General Election
Media Verification and Preservation
Use Case: Awards Ceremony (Songwriters North America)

SONA’s Warrior Awards Embrace Innovation with Capture through Jen Rosenstein’s Lens
Verification Pipeline (1)

1. Content with C2PA
2. Basic metadata is shown in C2PA Verify Site
3. Acquire unique Content ID (Nid)
4. Search on Blockchain network(s)

Immutable content provenance and history

Content ID (Nid)
Verification Pipeline (2)

Content with NO C2PA → Numbers Verify site → AI to match image patent and find the match

(Screenshot)

Upload → AI Search

https://verify.numbersprotocol.io
Verification Pipeline (2)

Content with NO C2PA

Numbers Verify site

AI to match image patent and find the match

Search on Blockchain network(s)

Immutable content provenance and history

Upload

AI Search
EIP-7053

Interoperable Digital Media Indexing

Fostering growth in the provenance space by committing to promoting open standards through EIP proposals

ERC-7053: Interoperable Digital Media Indexing

A universal indexing method to record, discover and retrieve the history of digital media on EVM-compatible blockchains.

Authors: Bofu Chen (@bafu), Tammy Yang (@tammyyang)

Created: 2023-05-22

https://eips.ethereum.org/EIPS/eip-7053
EIP-7053 Design Concept: Registration

Content Creator

Original File

Decentralized Content ID (Content Address)

CID

Metadata

Tx

Blockchain

Provenance Metadata
An Asset’s metadata can be extended or updated, like Git’s commits.
EIP-7053 Design Concept: Asset History

On Chain History, “Commits”
EIP-7053 Design Concept: Asset Tree

Asset Tree contains a comprehensive collection of metadata that are important to authenticating digital assets.
EIP-7053

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Nit: Git for Web3 Digital Assets

“Git” Web3 digital media helping to create on-chain provenance records in the form of tree structure we coined as Asset Tree

Nit

Nit is git for web3 digital asset and helps user to commit an asset’s activities (chronicle) to blockchain. Please note, this repository is for nit open-source tools. If you are looking for accessing nit via API services, please visit this wiki for more details.

Why Nit

To make digital assets trustworthy and traceable, Nit leverages web3 technologies and Git core concepts. Everyone can chronicle their assets by creating on-chain records so that we can productively debate, narrate, and analyse. All asset histories are written on chain and are searchable by asset CID. A sample transaction can be found here.

Case study

1. A crypto-based dossier could help prove Russia committed war crimes, CNN
2. Starling Lab and Hala Systems file Cryptographic Submission of Evidence of War Crimes in Ukraine to the International Criminal Court, CAGR

Commit & Asset Tree

nit adopt similar design as git.

- When there is an update to the asset, such as updating creator information or updating content itself to create a child asset, there should be a new commit attach the asset itself.
EIP-7517: Content Consent for AI/ML Data Mining

A proposal adding "dataMiningPreference" in the metadata to preserve the digital content's original intent and respect creator's rights.

This EIP proposes a standardized approach to declaring mining preferences for digital media content on the EVM-compatible blockchains. This extends digital media metadata standards like ERC-7053 and NFT metadata standards like ERC-721 and ERC-1155, allowing asset creators to specify how their assets are used in data mining, AI training, and machine learning workflows.

Motivation

As digital assets become increasingly utilized in AI and machine learning workflows, it is critical that the rights and preferences of asset creators and license owners are respected, and the AI/ML creators can check and collect data easily and safely. Similar to robot.txt to websites, content owners and creators are looking for more direct control over how their creativities are used.

This proposal aims to propose a standardized method of declaring these preferences. Adding `dataMiningPreference` in the content metadata allows creators to include the information about how they want their work whether the asset may be used as part of a data mining or AI/ML training workflow. This ensures the original intent of the content is maintained.

For AI-focused applications, this information serves as a guideline, facilitating the ethical and efficient use of content while respecting the creator's rights and building a sustainable data mining and AI/ML environment.

Decentralized protocol to preserve the values of both Human & AI creations