



# Hedera™ Hashgraph

## Certificate of Blockchain Proof

Powered by **Proven**<sup>DB</sup>

hh-ieee\_coins\_paper-200516.pdf

Hedera Hashgraph (email user: [contact@hedera.com](mailto:contact@hedera.com))

This certificate constitutes proof that a document has been anchored to a Blockchain using the Hedera Hashgraph Protocol on [Mon, 21 Dec 2020 12:52:56 GMT](#) thereby proving that the document existed in its current form on the date at which the Blockchain entry was created.

You can use this proof to attest that:

- (a) the document has not been altered in any way.
- (b) the document existed in its current form on the specified date.



An online version of this proof can be found at:

<https://app.provencdb.com/app/document/share/2aab4f2597386154f9f8abfd1e8d12355d937469de36b7591289db573940e48b9b14af4048505d1d6350a3bf1ce8549dab373432a79bc6ad62d39c59e8f207605571af4b65e2d5cc80f60a704a8b10cc42812206fad3c3f77022f54b247c6952cdec1b67eb4a72e90e9839c18738dec68fe68cd50bfd3e66f0c5c1343bfca0dbd8cc0bb7bd72bddf59264e1950b4c/compliance>



## Details of the document being proved

The document was uploaded by Hedera Hashgraph (email user: [contact@hedera.com](mailto:contact@hedera.com)) at [Mon, 21 Dec 2020 12:52:53 GMT](#)

The document name when hashed was "hh-ieee\_coins\_paper-200516.pdf"

You can view a copy of this document [here](#)  
(permissions may be required to view the document)

The cryptographic hash of the document is:  
`1c4487a994a9144f56f6255d73242d69eeb073533eeb5f9e7507c9ccf250ec54`

See [Schedule 1](#) for details of the hashing algorithm employed.

## Blockchain proof details

The document hash was included within the [Hedera Hashgraph](#) proof at <https://explorer.kabuto.sh/mainnet/transaction/1e0b076a3f05a64f5591a7397a0563a2417aad93f701a28f9eec7c2ae3b3360441657542eeb36f40081fa0bf793513b9>

See [Schedule 2](#) for a detailed cryptographic proof.

The Hedera Hashgraph proof was anchored to the Blockchain in transaction [1e0b076a3f05a64f5591a7397a0563a2417aad93f701a28f9eec7c2ae3b3360441657542eeb36f40081fa0bf793513b9](#) at: [Mon, 21 Dec 2020 12:52:56 GMT](#)

## Summary

The document `hh-ieee_coins_paper-200516.pdf` with hash value `1c4487a994a9144f56f6255d73242d69eeb073533eeb5f9e7507c9ccf250ec54` was anchored to the Hedera Hashgraph Blockchain by Hedera Hashgraph (email user: [contact@hedera.com](mailto:contact@hedera.com)) at: [Mon, 21 Dec 2020 12:52:56 GMT](#). Providing that the document continues to hash to that value, you can be certain that the document existed in its current form on or before that date.

## Schedule 1: Document hashing

The document hash of `1c4487a994a9144f56f6255d73242d69eeb073533eeb5f9e7507c9ccf250ec54` was obtained by performing a [SHA-2 256 bit](#) hash on the document [here](#) (permission may be required to view this document).

The hash was calculated on the document and its metadata as stored in the ProvenDB system.

You can download a copy of the document and its metadata (permissions required) [here](#). You can independently validate the document proof by using the open source validation tool at <https://app.provencdb.com/homepage/downloads>.

## Schedule 2: Hedera Hashgraph proof

The Hedera Hashgraph proof uses a Trie structure for linking data to the public Blockchain. It aggregates multiple hash values into a single hash value which is then placed on the Blockchain. The following Hedera Hashgraph proof proves that the hash value of

`1c4487a994a9144f56f6255d73242d69eeb073533eeb5f9e7507c9ccf250ec54`

is associated with the root hash placed on the Hedera Hashgraph Blockchain in transaction

<https://explorer.kabuto.sh/mainnet/transaction/1e0b076a3f05a64f5591a7397a0563a2417aad93f701a28f9eec7c2ae3b3360441657542eeb36f40081fa0bf793513b9>

*This proof can be downloaded (permissions required) [here](#)*

## Below is a binary representation of the Blockchain proof

```
eJy0IM+um0UPxr+r+Nys2KYZ22N7pqsjcQus2ATP2CaRTpMoSQtdFjZs2zuAFrUgxAqx5D4icTEo55SKo4gNElu/r3/z+M/jb9+Ng23nOo6vww7h1kbc/
rL3sflDXN1/eL3bH//43/9ffHd7vgGvA7hCteHK5hYeDuA6OmQb0WcqeVvWyKRxmVIFZXAhRPQKL77f7d8e17ZAljtghWVyKVVvI0QpAN9QeZQRwd6
DuQsDmSb0VHOq9QK0ZhrOFc/hD4OF8wwCNrSrR9KzWZ7C7jhyRXHuhXp0IJruJ5iguyg1DpsBoYmZXChFZUro0sWQOQUfvNaq5t9YnATGLC/
nkztYsZnY0KYANDWpcKURqBSwtXblaGRIJpsMGSTlrRjYxwSglR6vjfWkOjIRZMC4AtYKbtq8QycZmdy4oRet0uuu7JZhAcQBg0Rx+qXdAJ5ZSML1
CihUWivdPU2ThimUZXSCngRnY27pXEHdeigxVILF5qVByOWa6BK73MOrAQTsTmh4fAUkAao9O5RuPgQbpSCPxkoFJ1EidpNscF2yQZYqbG0w4BRr
loPAe0XSGgTal8egnoI4pEHpM2rpoEyCoddTBIQFHqM.JzzqsmBhVteUVvuclt0v6+iaoA04T0pAaSkZwd7WHC2HDJjMIsVBp0RKt0rQPUSBCZDM
HO2xjE6EVJ61kFp2R405b0vzx9dJLkOj40tnthmu43T6uLQ3eFvVn354u197Pjymzen5/t4Pe32x/e/
bfz80UQZRcUoC5vUZO5gS12tsJBhBTXzTqkFDfv2iKkTLWgQsAkVhJUrrlw2tpbSIK2M1E4MNPqbp4fn8eX51fp02h8fL5f3Tz/
aH3a7tHEbjza75bM4bPL58mEty/9a2bubudue4qvT739p+512/mh3+GI517bZ7neb7Wn5j07a9tMnH0Jv1nZcn29g1trUeq/
WL1focheQ2ZWwokuPGEWJiSIGZw/lorPPmcglJtefL5jVxlfbnf5Y7eCNHkuZuu8Ali+MMJcoKEF
+pgz6m93Kcen48nmdlr7zJWdfsWCZQG4PgU8DHjY5bPPuDN7vAv8ZfMf8L/GQAA//+t5ffx
```

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### Schedule 3: List of printable links in the document

Document being proven:

<https://app.provencdb.com/app/document/share/2bd94055ce30b15045d22442dc42772fef97f143cbf42c7442b7ccf139779731b8b35c7220dad9a7d79c44c4d7c9b4a8992b6191632feb0ed34815f25e484977f1e2dd9b9333123dfed1eda418c8ea0896ef34abf1fbdba7c5aab408e1cc38f284d93e824efb8060b8b420ccc04b378b67454f58407dc18c2362368f99012c7e5d5650de15274b6a416223661b68d5/compliance>

Hedera Hashgraph

<https://www.hedera.com/>

Blockchain transaction:

[1e0b076a3f05a64f5591a7397a0563a2417aad93f701a28f9eec7c2ae3b3360441657542eeb36f40081fa0bf793513b9](https://www.hedera.com/blockchain/transaction/1e0b076a3f05a64f5591a7397a0563a2417aad93f701a28f9eec7c2ae3b3360441657542eeb36f40081fa0bf793513b9)

Open source validation tool:

<https://app.provencdb.com/homepage/downloads>