TITLE: Report on the JPEG NFT Call for Proposals

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Report on the JPEG NFT Call for Proposals

Context

Recently, fungible and non-fungible tokens have garnered considerable interest. Several digital assets that tokens point to are either in existing JPEG formats or can be represented in current and emerging formats under development by the JPEG Committee. Additionally, various trust and security concerns have been raised about these tokens and the digital assets on which they rely.

NFTs, and more generally, media tokenization represent a prominent use case within the ongoing explorations of JPEG Trust, which provides a framework for establishing trust in media. The JPEG Trust framework will include aspects of authenticity, provenance, and integrity through secure and reliable annotation of the media throughout its life cycle.

To better understand the specific user requirements for media tokenization formats, the JPEG Committee adopted a definition of non-fungible token (NFT)\(^1\) and launched the JPEG NFT exploration initiative.

Five workshops have been organised within a year between July 2021 and June 2022. Their proceedings - presentations and recordings - are publicly available\(^2\).

As a result of the exploration, the committee prepared a “Final Call for Proposals on JPEG NFT (ISO/IEC JTC 1/SC29/WG1 N100551)” and associated “Use Cases and Requirements for JPEG NFT (ISO/IEC JTC1/SC29/WG1 N100552)”, which were released at the 100th JPEG Meeting. They are also publicly available\(^3\).

The scope of JPEG NFT was defined as “the creation of effective specifications to support a wide range of applications relying on tokens applied to media assets.

The standard shall be secure, trustworthy, and energy efficient, allowing for an interoperable ecosystem relying on tokens within a single application or across independent applications”.

Two parties expressed their interest in submitting a proposal and the Centre for Blockchain Technologies, University College London, United Kingdom (UCL CBT), representing a group of companies and institutions, sent their proposal in January 2024.

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1 An NFT is a unique data record containing a verifiable reference to an asset. The record is stored on a ledger in the form of metadata and conditions of the transaction. The ledger could be distributed or centralized and the conditions of the transaction may be implemented as a smart contract.” Source: NIST-IR 8301Section 6.3, Tokenizing Uniquely Identifiable Things and Supply Chains

2 See https://jpeg.org/jpegnft/documentation.html

3 See https://jpeg.org/jpegnft/
Outcomes of the Call for Proposals

Two (non-mandatory) pre-registrations were received for the Call for Proposals on JPEG NFT.

The Centre for Blockchain Technologies, University College London, United Kingdom (UCL CBT), representing a group of companies and institutions, submitted their proposal on 15 January 2024 and presented it during the 102nd JPEG meeting.

The discussion of the proposal and other contributions outlined a potential technical roadmap and alignment with JPEG. JPEG NFT is now referred to as JPEG Media Tokenization.

The JPEG Committee identified and invited stakeholders from academia, industry, and end-user communities to liaise and contribute to its work.

The JPEG Committee now discusses the timeline of further extensions to JPEG Trust and identifies potential new parts and amendments (beside Trust Profiles Catalogue) to address tokenization, authorship, ownership, and terms of use. It started to integrate the JPEG NFT Use Cases and Requirements v5.0 into the JPEG Trust Use Cases and Requirements v1.1.

Immediate next steps

The JPEG Committee contemplates a multi-layered model of media tokenization based on the ongoing work of JPEG Trust. At the declaration level, authorship, ownership, and terms of use build upon the core foundation of asset provenance and authenticity.

Then, the monetization layer includes negotiated legal agreement and executable smart legal contract.

Finally, the remuneration layer encompasses content delivery, royalty collection, remuneration, and trade.

The focus is on the declaration layer. The first step concerns authorship.

At the 103rd JPEG Meeting in April 2024, the following documents were made publicly available:

- Terms and definitions document for JPEG Trust v1.0
- Use cases and requirements for JPEG Trust v2.0