

Recent Issues over Non Fungible Token (NFT) and Copyright Issues

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I Introduction

Two hot technology topics being discussed in the media are Metaverse¹⁾ and Non Fungible Token (NFT). NFT has become popular through CryptoKitties, a blockchain-based game released in 2017, and the market has increased significantly to the extent that the market size skyrocketed from 141.55 million dollars in 2019 to 3.038 million dollars in 2020²⁾. Along with such market trend, many companies such as Microsoft and NIKE are entering the NFT market and the movement to use NFT for transaction in metaverse is identified³⁾. In the meantime, NFT is widely used in the transaction of artwork due to the characteristics that NFT has a unique and non-fungible value.

However, recently, copyright infringement issue was raised in the process of issuing the artworks of artists Lee Jung-seob, Kim Hwan-ki and Park Soo-keun in NFT and

- 1) Metaverse is a portmanteau word of “meta” and “universe” meaning the 3D virtual worlds. To be more specific, it has a broad meaning of virtual worlds for life and game where both virtual and physical worlds can exist together in all aspects of politics, economy, society and culture. Metaverse market has been on the continuous increase and relevant market is grabbing the attention with increased non-face-to-face activities due to COVID-19.<Wikipedia: Metaverse, <https://ko.wikipedia.org/wiki/%EB%A9%94%ED%83%80%EB%B2%84%EC%8A%A4>(last visit on June 2, 2021)>.
- 2) Lee Ji-hyeon, Is the next thing to come after cryptocurrency NFT? The blockchain market is heading toward NFT, the next generation market., KOTRA, <<https://news.kotra.or.kr/user/globalBbs/kotranews/782/globalBbsDataView.do?setIdx=243&dataIdx=188333>(last visit on June 2, 2021)>.
- 3) PlayDapp, ‘Aiming’ the ‘metaverse’ game market using NFT, <<https://www.techm.kr/news/articleView.html?idxno=81370>(Last visit on June 7, 2021)>.

selling them via online auction.⁴⁾ Because the argument that the company which issued NFT and conducted auction did not have a copyright to those artworks emerged. In response to this argument, the agency which conducted auction argued that the copyright was transferred to the agency but soon the agency suspended auction as the controversy grew.⁵⁾

Why did such a copyright issue arise in relation to the NFT even when the blockchain-based NFT is recognized for its reliability and is known as a technology that can secure scarcity and uniqueness in that it is non-fungible unlike token? Following sections examine how NFT, which is the hot topic these days, is used for the transaction of copyrighted works and review the relevant copyright issues.

II Transaction of Copyrighted Works Using NFT

1. Overview

As mentioned earlier, NFT refers to a token which is non-fungible.⁶⁾ It is a kind of digital assets and cannot be forged or falsified as the ownership of digital files are stored on the blockchain. While other coins such as Bitcoin is fungible as it can be exchanged 1 to 1 with other coins, NFT is differentiated from others as unique identification value is entered. Therefore, it is used for matters where authenticity is important such as driver's license and certificate. In particular, NFT has been widely used in the world of art where there are many controversies over forgery. In March this year, it became an issue when 'The First 5000 Days' by digital artist Mike Winkelmann (known professionally as Beeple) for 69 million dollars (KRW 78.1 billion) at Christie's Auction New York.⁷⁾ In the meantime, such technology creates the concept of 'digital original' in the digital world, where duplication is easy, exploring a new art market.⁸⁾

4) Artworks of Lee Jung-seob, Park Soo-keun and Kim Hwan-ki NFT, 'Noise' over forgery and copyright issues, Maeil Business Newspaper, <<https://www.mk.co.kr/news/culture/view/2021/06/529003>>(Last visit on June 2, 2021)>.

5) Suspension of NFT auction for artworks of Lee Jung-seob, Park Soo-keun and Kim Hwan-ki'...Apology for controversy over copyright and authenticity, Newsis, <https://newsis.com/view/?id=NISX20210602_0001462404>(Last visit on June 2, 2021)>.

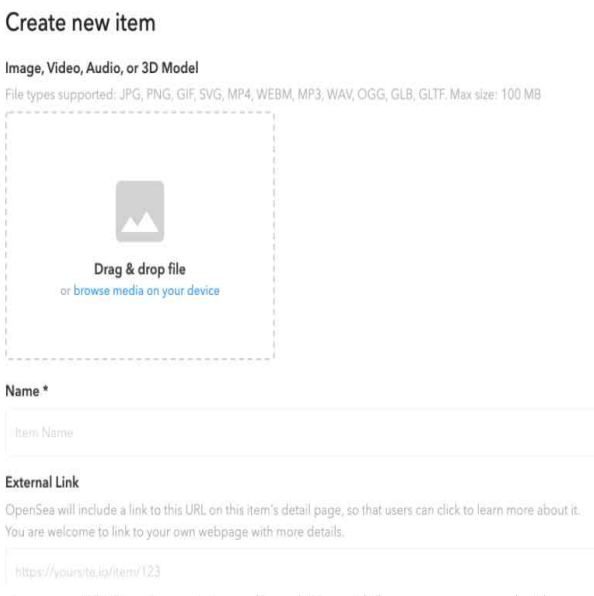
6) The things that are used by establishing an independent platform (mainnet) are called a coin and things that are based on other coin's platform without an independent platform are called a token.

7) Beeple sold an NFT for \$69 million, <<https://www.theverge.com/2021/3/11/22325054/beeple-christies-nft-sale-cost-everydays-69-million>>(last visit on June 4, 2021)>.

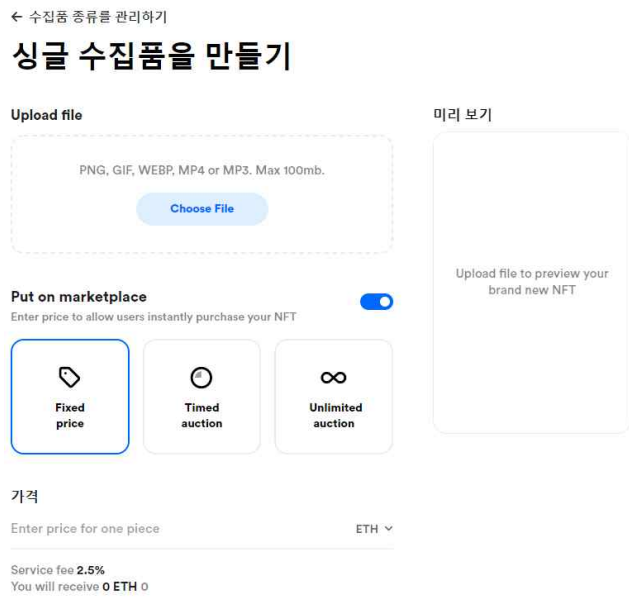
8) No risk of manipulation and loss... Rapid expansion of 'digital original' NFT market <<https://www.chosun.com/economy/mint/2021/03/19/4DV3MH7R65EEJKWOXGWTL5Y5TI/>>(last visit on June 4, 2021)>.

2. Issuance of NFT for Copyrighted Works

NFT utilizes ERC (Ethereum Request for Comments)-721, a standard interface issued and traded on Ethereum blockchain. There are various ways to create NFT but in this article, the explanation is given based on creating NFT through intermediary site (marketplace) where NFT is generally traded.⁹⁾ In order to create NFT, it is necessary to prepare artwork (copyrighted work), coin¹⁰⁾, and coin wallet¹¹⁾. The process of turning copyrighted work into NFT is called minting¹²⁾. Here, Gas (fee required to conduct a transaction on Ethereum successfully) is required and the fee is paid in coin¹³⁾. In this process, the users who want to sell NFT need to upload the copyrighted work on the marketplace site.



<Figure 1 Process of uploading copyrighted work on Opensea site>



<Figure 2 Process of uploading copyrighted work on Rarible site>

The minting process requires time and different gas fee is applied depending on the speed of minting process. Gas fee can be selected by a user but there is a risk of failing transmission if the gas fee is too low. Activities of sending tokens from

9) There are Valuables, Rarible, OpenSea, Nifty Gateway, Super Rare, Makers Place, etc.

10) It refers to virtual assets such as Ethereum and Zilliqa.

11) It refers to a wallet that can be used for storing virtual assets or using them for transaction. Representative virtual wallet sites include metamask and Trezor One.

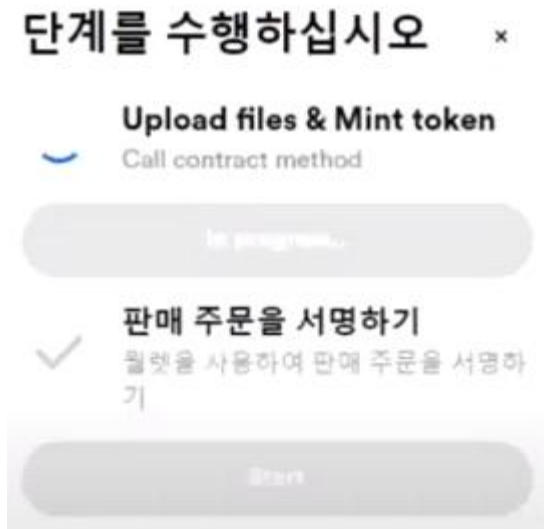
12) Minting is to turn the digital copyrighted work into NFT through Ethereum blockchain.

13) In some cases, payment is made in advance or made after sales.

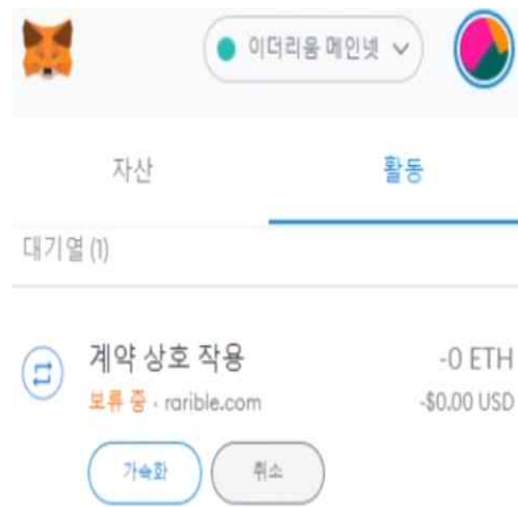
Ethereum network to a network or sending Ethereum to other places are called transaction and the activity of linking the copyrighted work with NFT is one of the transactions, requiring the payment of fee regardless of success of the transaction.

In this process, specific details can be set. For example, name of artwork, description, high quality image link (link to original artwork if there is any), ratio of royalty to receive each time when the artwork is sold (ex: 10% of the resale amount) and the number of copies (meaning that how many copies are issued as part of the series in the concept of edition). Details are different depending on marketplaces as some market places require the input of the name of an artist and date of creation while some market places require the selection whether to transfer the copyright together or not.

After filling out required information, minting process is conducted together with uploading. The time required and success of the transaction depend on the gas fee paid.



<Figure 3. Process of file uploading and minting>



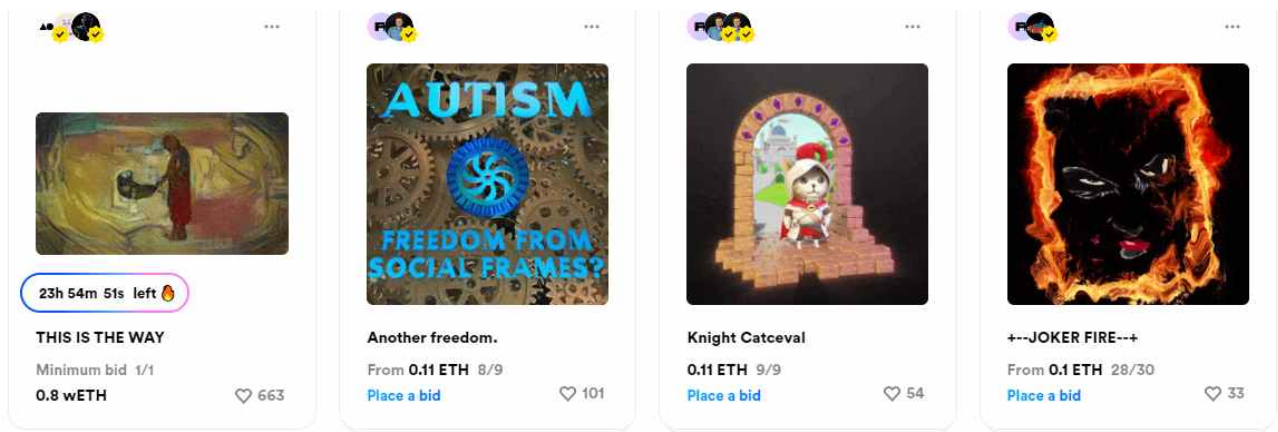
<Figure 4. Process of transaction>

3. Transaction of Copyrighted Work Using NFT

NFT created in this way can be sold on a marketplace and purchasers can buy the NFT by participating in an auction. In the meantime, the NFT created can be sold

14) When the file is uploaded, minting is processed and an alarm ‘Pending’ is displayed. If you want to shorten the time, it is necessary to pay additional gas fee by pressing acceleration button.

on marketplaces other than the one where the NFT was created. Once the sales starts, uploaded images are displayed in the marketplace as shown below.



<Figure 5. Sales page on Rarible site>

On the paintings above, the number before ETH is the sales price and 8/9 means that there are a total of 9 editions and it is the 8th work among them. As there are many editions for artworks, NFT has uniqueness for each artwork so it is sold at the edition level. Each edition has different price and accordingly, the first edition is the most expensive.

When NFT is purchased on the marketplace, the transaction details are recorded in the NFT and a purchaser owns it. All transaction details recorded in NFT can be searched on the site called Etherscan.¹⁵⁾ In addition, NFT does not contain copyrighted work and only the metadata of the copyrighted work is written in it. Only the name of artwork, contract terms and conditions, details of the artwork and image link are written in the meta data.¹⁶⁾ Therefore, copyrighted work is not used upon transaction of NFT.

```
{
  "name": "Promise",
  "description": "A new Jacques Greene song. 'Promise'\n\nThis NFT represents not only a 1of1 AV, but the publishing rights to the song upon its release, in perpetuity. \n\nAs we explore the possibilities of art on the chain and the promise of web3, we can maybe begin to let go of old systems.\n\nThis platform is a promise. You can buy the copyright here. In purchase you will own the publishing to the song, but I reserve the right to approval. That's the promise.\n\n1920 x 1920\n6secs",
  "image": "ipfs://ipfs/QmSVxc4PbrupTLv3wkNXpBVcdk5MwXDwSqnEC1orSPTuli/nft.mp4"
}
```

<Figure 6. Metadata of an artwork uploaded on Foundation, an NFT auction platform>

15) Etherscan Non-Fungible Token Tracker<<https://etherscan.io/tokens-nft> (Last visit on June 4, 2021)>.

16) <https://ipfs.io/ipfs/QmYN99ycFoM6ERnA5TBpc3w7Le9QpGMdDyxMNbixuCsztM/metadata.json> (Last visit on June 4, 2021).

III Copyright Issues in NFT Transaction

1. Copyright Infringement in the Process of NFT Transaction

The potential copyright infringement issues that may arise in the process of NFT transaction can be summarized as follows. NFT is a metadata and does not contain copyrighted work¹⁷⁾, so the transaction of NFT itself does not cause copyright infringement. However, the process of minting into NFT may cause copyright infringement issue. As explained earlier, some marketplaces require the upload of the artwork and if a person other than a copyright holder uploads the copyrighted work, it constitutes the infringement of transmission right (reproduction right). In case of digitalizing offline copyrighted work into NFT, the infringement of reproduction right may occur. In case of selling artwork under the name of people other than an author, it may cause the infringement of author's moral rights. If copyrighted work is used in the process of NFT transaction, copyright infringement issue does not occur only when the copyright is transferred or permission to use is given to those who use the artwork from copyright holder except for the case where the user is a copyright holder of the digital artwork.

2. Issues Related to the NFT Minting by Unentitled Person

The most ideal NFT transaction is the case where a copyright holder of the digital copyrighted work determines the terms and conditions for transaction, creates NFT and sells it on the market. However, as explained earlier, minting to create NFT for copyrighted work does not have any restrictions¹⁸⁾, so it is possible for people other than a copyright holder to perform minting of other people's copyrighted work. A person, who lacks understanding of copyright, may perform minting and sell it, considering that he/she owns the digital image. The problem here is that a person who purchases and uses such NFT can be caught up in copyright disputes. The

17) The example above takes the example of only the case of metadata without copyrighted work but in some cases, digital original or copies are directly uploaded on blockchain. However, the number of such case is not many as it requires high fee of uploading the data on blockchain (gas fee). (About 13 dollars for uploading about 1 kilobyte). <<https://medium.com/coinmonks/storing-on-ethereum-analyzing-the-costs-922d41d6b316>, (Last visit on June 7, 2021)>.

18) Some exchanges require verification process but open marketplace does not have such process.

recent issue related to NFT issuance for artworks of Lee Jung-seob, Kim Hwan-ki and Park Soo-keun is whether the issuer has the right to minting or not. Of course, buyers who purchased NFT with a belief that the seller has the right may not be responsible for the issue as they do not have intention of copyright infringement but it could cause confusion in the market.

The NFT minting issue by unentitled person expands its boundary to creating and selling NFT for copyrighted works which are classified as public domain as the copyright protection period is over.¹⁹⁾ Creating NFT for copyrighted work whose copyright protection period is over does not constitute copyright infringement but it may not be an appropriate act socially and ethically.

To prevent such problem, minimum level of verification process is required in the process of creating NFT for copyrighted work. However, as it is hard to prove a true right holder for ~~general~~ a copyrighted work, the verification process should not be excessive. In this regard, linking it with copyright registration system, which has legal power of presumption. In the meantime, it is necessary to put a certain restriction to solve problem related to the claim of rights over public domain by referring to copyright act in Chile.²⁰⁾

3. Problem Caused by Not Linking NFT with Copyrighted Work

NFT is sometimes described as the receipt for the transaction of copyrighted work as it contains metadata only.²¹⁾ As such, NFT contains only the information on the location and description of copyrighted work so transaction of NFT does not mean the transmission of copyrighted work directly. Copyrighted work can be accessed only through link written in NFT metadata. As explained, there is a gap between the existence of original work and NFT transaction, which raises the

19) Global Art Museum caused controversy over turning famous paintings in the 16th century of Rijksmuseum Amsterdam into NFT. <<https://news.artnet.com/art-world/global-art-museum-nfts-1953404>(last visit on June 4, 2021)>.

20) Under the Copyright Act in Chile

the intellectual property rights infringement that belongs to each item of Article 80 is subject to penalty ranging from 25 UTM to 500 UTM.

① Those who falsely reproduced, distributed or published the name of the public copyrighted work or public cultural heritage even though he/she knows the name of the author.
② Those who monopolize or claim the rights to public works or public cultural heritage.
③ Those who have the obligation to pay the compensation for the demonstration or disclosure of the protected copyrights failed to write down the performance ledger.

21) Buying a pink NFT cat was a crypto nightmare, <<https://www.bbc.com/news/technology-57273904>(Last visit on June 6, 2021)>.

question whether NFT transaction can be replaced with the validity of copyrighted work transaction.

It is necessary to review the legal nature of NFT and validity of the NFT transaction to answer to this question. NFT is one of the virtual assets like Bitcoin and there is controversy over the legal nature of it. The criminal ruling by the Supreme Court of Korea regarded the Bitcoin as “an intangible property whose economic value is shown digitally, which can be transferred, stored and transacted” and stated that Bitcoin was the property that can be confiscated,²²⁾ but it is vague to determine which property belongs to this category.²³⁾ The Act on Reporting and Use of Certain Financial Transaction Information which took effect on March 25, 2021 specified the definition of virtual assets²⁴⁾ but it deals with the matters regarding the reporting and use of financial transaction information, without defining the legal nature of virtual assets clearly. However, apart from legal nature, transaction of virtual assets occur in reality and not only the Act on Reporting and Use of Certain Financial Transaction Information but also other acts such as Inheritance Tax Act and Income Tax Act recognize the sales and purchase of virtual assets indirectly so it should be regarded that the transaction of NFT is made with validity.

Even though NFT transaction is valid, equating NFT transaction with the transaction of copyrighted work is a different matter. As NFT transaction provides metadata only, it is vague to regard this as valid transfer of copyrights or contract that permits the use of copyrights. Since the physical transfer of the copyrighted work is not made and link is provided, resulting in high instability of the benefits. As link is not permanent, the copyrighted work may disappear after purchase or NFT in which a link disappeared may be purchased. To solve this problem, artists send copyrighted work in addition to NFT to buyers of edition²⁵⁾ or save files using IPFS (InterPlanetary File System)²⁶⁾. However, there is legal uncertainty as there is no

22) Supreme Court Sentence on May 30, 2018, 2018Do3619 judgement.

23) There are differences of opinion regarding digital virtual assets as some argue that it is property under the Civil Law while others view it as securities under the Capital Markets Act (Jeon Woo-jeong, Legal Characteristics of Cryptocurrency and Regulation Improvement- Review on whether it is property, money under the Civil Law or securities under the Capital Markets Act, Korea Financial Law Association, vol 16, no. 1, 2019, pages 147 to 199; Choi Dan-bi, Definition of virtual currency and how to protect the investors, Legal Review, vol 20, no. 2, 2020 pages 597~618).

24) “Virtual Assets” are defined as electronic certificates that can be transacted or transferred electronically as they have economic values (Article 2(3) of the Act on Reporting and Use of Certain Financial Transaction Information).

25) Mike Shinoda, a rapper of Linkin Park, an American rock band, signed on its single album ‘Happy Endings’ released in NFT in March and sent it offline to 10 successful bidders.

26) It refers to distributed storage on multiple computers with **hash values converted from data** content using p2p method such as Torrent.

institutional protection mechanism. Even when such transfer is legally recognized, the question remains whether this can be the basis for registration of transfer by assignment of author's right under Article 54 of the Copyright Act.

4. Other Copyright Issues

In addition to the issues mentioned above, there is an issue whether NFT transaction is the subject to exhaustion of rights under Article 4 Right to Distribute of the Directive 2001/29/EC of the European Parliament and of the Council of 22 May 2001 on the Harmonization of certain aspects of copyright and related rights in the information society²⁷⁾ and the judgement of CJEU is that right is not exhausted for digital reproduction²⁸⁾, it is likely that right is not exhausted by NFT.²⁹⁾

For NFT, it is possible to set a certain amount of royalty to be paid to the original seller for each resale and such right is similar to droit de suite and if the NFT transaction is vitalized, it could result in the introduction of droit de suite.³⁰⁾ There is a concern that it results in introduction of droit de suite without restriction on the scope of copyrighted work and event, having a significant impact on the market.

IV Conclusion

Despite many concerns, transaction of copyrighted works is still active and many creators are doing creative work to issue NFT. It seems that such changes are likely to be accelerated along with other technologies such as metaverse. In the meantime, collective management organizations (CMO) are about to utilize NFT. Società Italiana

27) Directive 2001/29/EC of the European Parliament and of the Council of 22 May 2001 on the harmonization of certain aspects of copyright and related rights in the information society.

28) European Court of Justice, 19 December 2019, C-263/18, ECLI:EU:C:2019:1111.

29) For more details, refer to the judgement whether to apply right to exhaustion or not in the e-book [Issue Report] (CJEU C-263/18 judgement) <[30\) In Europe, the coherence with Directive 2001/84/EC of the European Parliament and of the Council of 27 September 2001 on the resale right for the benefit of the author of an original work of art is under discussion.](https://copyright.or.kr/information-materials/trend/the-copyright/view.do?brdctsn=45401&pageIndex=1&brdctsstatecode=&brdclasscode=&searchTarget=SUBJECT&nationcode=&brdno=35¬iceYn=&etc1=&searchText=%EA%B6%8C%EB%A6%AC%EC%86%8C%EC%A7%84&portalcode=04&servicecode=06&searchkeyword=&portalcode04=(Last visit on June 7, 2021)>.</p></div><div data-bbox=)

degli Autori ed Editori (SIAE), an Italian CMO announced that it released more than 4 million NFTs for more than 95,000 members in collaboration with Algorand, a blockchain platform.³¹⁾ It is not clear whether SIAE manages NFT or not as details are not covered in the press release but if it is managed successfully, it can be a new business model for CMO. As such the emergence of NFT requires the changes in existing copyright system so it seems to be necessary to establish an institutional support that enable such social changes to take root successfully in the market.

However, it seems that the issue of incorporating the transaction of copyrighted works using NFT into institutional framework should be considered based on comprehensive review on systems and markets of all virtual assets as it is closely related to other virtual asset markets.

31) SIAE, Italy's largest collective management organization, represents authors' rights as digital assets managed on the Algorand blockchain, <<https://www.algorand.com/resources/news/siae-launches-4-million-nfts-on-algorand-for-creators>>(last visit on June 7, 2021)>.

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