Authenticating Art With Bioengineered DNA: The IP Issues


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Law360, New York (November 2, 2015, 11:43 AM ET) -- Recently making the rounds in the media circuit are reports on a fascinating new authentication system that would allow living artists to effectively "sign" their artworks with very small amounts of synthetic DNA.[1] This new authentication system is encompassed more broadly within "i2M," a new standards-based technology that is uniquely developed to provide an industrywide solution to the long-standing problem of faked, forged and stolen art in the art world.[2] This article provides an overview of the i2M Standards and addresses the legal implications of the i2M Standards technology from an intellectual property perspective.

Instrumental in the development of this technology is the Global Center of Innovation for i2M Standards (previously known as the SUNY Center of Innovation), a not-for-profit, independent international center.[3] Founded in 2014, the Global Center of Innovation is based at the State University of New York at Albany and is sponsored by ARIS Title Insurance Corporation, which specializes in art.[4]

Background of the i2M Standards

The i2M Standards are newly developed global standards governing the marking and identification of art objects and intellectual rights. According to the inaugural i2M Standards website, this is the first initiative of its kind to:

> establish industry standards by which all art will be invisibly and permanently marked at the point of manufacture or discovery for primary market objects and at a defined point in time and intervention for secondary market objects, allowing all objects to be recognizable as indisputably authentic or, if not previously marked, as the indisputably subsequently-identified object.[5]

The first-generation i2M solution is comprised of three parts[6], including as follows:

Part 1. Standards

The first part of the solution establishes the ground rules that define the types of complex issues being encountered by the art industry today and will encounter in the future.

Part 2. Marking Technologies

The next part of the solution involves advanced marking technologies that can mark both digital and physical art objects when works are created (primary art market) and marking artworks already circulating in the art market (secondary art market). The advanced marking technologies include encrypted, bioengineered DNA as well as other advanced and encrypted security technologies in which the DNA can be embedded into any art object to ensure its accurate identification at the point of manufacture or discovery.

Part 3. Informatics Technologies

The final part of the solution involves advanced informatics technologies to be offered by ARIS that allows for the continuous verification and protection of information associated with identified artworks. This process completes and maintains the integrity of the identification. It is imperative that the process is conducted in compliance with the strictest data privacy, protection and security laws of each global jurisdiction and in such a way that the owners control their information.

Impetus for Creation of the i2M Standards

Not surprisingly, art remains the largest unregulated legal market in the world today and the art industry continues to be affected by uncertainty with the most significant challenge being accurate object-identification and the maintenance of this integrity over the course of long, indefinite durations of time, such as centuries, for complete certainty of authenticity, attribution and originality.[7] With global annual sales ranging anywhere from $60 billion to $1 trillion in the art market, it is estimated that about 25 percent to about 40 percent of artworks sold globally are fake.[8]

Primary factors evidencing the scale of the problem include the globalization of the art

industry, the increase in art litigation, rising valuations of artworks and rapid technological advances that make it easy for inexpensive yet precise fraudulent replication of artworks.[9]

The reality of the art market today is the existence of a pervasive anxiety due to increased prices in the art market, the growth of online sales, the expansion of forged or illegally replicated artworks, the rapid development of 3-D printing and image technology and the hushing of expert opinion, contributing to the ongoing challenges faced by artist foundations, collectors, dealers, museums and law makers.[10]

Stakeholders across the art industry, which include artists, their estates and foundations, auction houses, collectors, dealers, galleries and museums, desire a reliable means of authenticating and valuing art and creating clear legal title.[11]

Until now with the development of the i2M Standards, there was no universal standard in existence for governing the identification process of an artwork and no solution for authenticating an artwork (not previously accurately identified) with any amount of certainty.[12]

The Global Center of Innovation's incubation of a new framework utilizing a new standards-based technology is being developed to guarantee the accurate identification and authenticity of every significant work of art from the past, present and future. This ecosystemwide solution, which provides a framework for independent third parties to develop compatible technologies that meet the i2M Standards, is expected to build stakeholders' confidence in the initiative as it will likewise be supported by colleagues and other art industry leaders, is relevant and technically well-grounded and is adaptable to future technological developments.[13]

How i2M's Marking Technologies Work

Scientists have harnessed the permanent nature and well-understood physical properties of bioengineered DNA in designing a digital DNA equivalent that can remarkably penetrate into the elements of any (material or virtual) artwork so that it is both unique and traceable.[14]

Specifically, the artwork is "tagged with a distinct form of this synthetic DNA, an invisible and digital marker that works at the molecular level. The markers are designed to be benign with zero physical impact and will be subjected to further ongoing testing and

evaluation by leading experts in the field to ensure stability across many different forms of art. The markers are bound through encryption, permanently linking the [art] object to its provenance and its authorship. Primary market works are tagged at the point of their departure from the artist's studio and secondary market works will be tagged when authenticity has been confirmed by existing industry 'consensus of authority.'"[15] Thus, upon the marking of an artwork, any questions or concerns of identity and authenticity can be finally resolved and the art market is given much needed certainty.

In addition, specific details of the artwork (i.e., date of creation, title, dimensions, material specifications, condition, conservation, etc.) can be verified and permanently linked to the tagged artwork.[16] It is further intended that second-tier levels of information (i.e., application, installation and handling specifications) can be made accessible to those authorized to come into contact with the art work, which include conservators, fabricators, handlers, museums and shippers.[17] In this way, movement of the artwork in the art market can be effortlessly tracked as the work is exhibited, sold, resold and/or accessioned into public and private art collections.[18]

In accordance with the newly developed i2M Standards, the secure information will be accessible only to owners of the information and their approved users, for authorized uses as well as via an iPhone/smartphone app.[19] By scanning the tagged artwork through an app, everything from the user to the scanning device is authenticated.[20] In particular, the owner or other approved users are immediately linked to privacy-protected, secured information that is controlled by the owner when routinely scanning the tagged artwork with an app.[21] Similar to the sharing of information about an artwork between owners, dealers, museums and other art industry players today, the owner can enable owner-originated information of an artwork so that the recipient can be assured that the shared information is conclusively accurate about the work.[22]

If a sophisticated counterfeiter were to tamper with or otherwise attempt to remove or replace the DNA marker, such efforts would leave behind microscopic forensic evidence.[23] If there was ever any question about the identification of an artwork, experts have the capability to easily review the embedded DNA marker without any harm to the artwork through the use of advanced forensic practices to confirm the unique encryption.[24]

Legal Implications of the i2M Standards Technology

As for legal implications of the new i2M Standards technology, the tagged artwork with synthetic DNA does not change the fact that the original work of the artist is automatically

protected by copyright when it is created and the copyright vests initially in the author of the work and endures for a specified duration depending on when the work was created and published.[25] Under the United States copyright laws, copyright protects “pictorial, graphic, and sculptural works,” which include two- and three-dimensional works of fine, graphic and applied art.[26]

Under the Visual Artists Rights Act of 1990, artists automatically hold the moral rights to their work throughout their lifetime regardless of ownership.[27] Specifically, works of art that meet certain requirements give their authors additional rights in the works, irrespective of any subsequent physical ownership of the art or irrespective of who is the copyright holder to the work.[28] In view of this grant of protection to moral rights in certain instances, an artist should have substantial control over his or her work with respect to the guarantee of authenticity of the work as it is circulated in the art market. Also, the ability to identify artworks for loan or research purposes is an invaluable resource when one undertakes to plan a career retrospective or a catalogue raisonne of an artist’s work. The new i2M Standards will enable various parties to participate in a universal standards-based system and “secure art assets and information integrity” within the global art industry.[29]

The approach behind the i2M Standards technology utilizes synthetic DNA, not the personal DNA of artists, in view of privacy issues and the risk that an individual’s DNA could be stolen and encrypted elsewhere, which would undermine the integrity of i2M’s marking protocol.

The unique identification data (i.e., authenticity, title, conservation, exhibition history, sales records, etc.), connected to the artwork via the DNA marker, will be electronically secured on a military-grade security platform and compliant with strict domestic data security and privacy laws.[30]

The developers of the i2M Standards technology may wish to seek patent protection on the process of marking objects for authentication or traceability, if eligible, under the United States patent laws.[31] It appears that one such third party has already attempted to do so, but the patent application (U.S. Patent Application Publication No. US 2014/0272097) has recently gone abandoned according to United States Patent and Trademark Office (/agencies/u-s-patent-and-trademark-office) public records.[32]

When the i2M Standards Technology will be Ready for Large Scale Commercialization to the Entire Art Industry

The first i2M Standards technology system has already been released to a select group of adopters, comprising about three dozen internationally recognized artists, archives, foundations and museums, who have signed up to test the technology still in a developmental stage.[33] Large scale commercialization of the system to the entire art industry could be ready as early as next year.[34] The Global Center of Innovation for i2M Standards is releasing the inaugural i2M Standards compliant system under the i2M name, which will then be divested to a third-party commercial concern.[35]

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[1] See, e.g., Art Forgers Beware: DNA Could Thwart Fakes (http://www.nytimes.com/2015/10/13/arts/design/developing-dna-as-a-standard-for-authenticating-art.html).

[2] See What is i2M. (https://www.i2mstandards.org/i2m/)

[3] See Global Center Of Innovation (https://www.i2mstandards.org/global-center-of-innovation/).

[4] Id.; see i2M Standards (http://www.aristitle.com/news/docs/i2M%20Standards%20101215%20final.pdf).

[5] See supra note 2.

[6] Id.

[7] See Problem of Fakes and Forgeries (https://www.i2mstandards.org/problem-of-fakes-and-forgeries/).

[8] Id.

[9] Id.

[10] See For Artists By Artists (https://www.i2mstandards.org/for-artists-by-artists/).

[11] See Art's Technological Gaurdian (https://d2fm9bxvca93ri.cloudfront.net/wp-content/uploads/20151012023047/Arts-Technological-Guardian.pdf).

[12] Id.

[13] Id.

[14] See supra note 10.

[15] Id.

[16] Id.

[17] Id.

[18] Id.

[19] Id.

[20] Id.

[21] Id.

[22] Id.

[23] Id.

[24] Id.

[25] See 17 U.S.C. § 201; 17 U.S.C. § 301 et seq.

[26] 17 U.S.C. § 102; 17 U.S.C. § 113.

[27] 17 U.S.C. § 106A.

[28] Id.

[29] See Approach (https://www.i2mstandards.org/i2m-approach/).

[30] See supra note 11.

[31] See 35 U.S.C. §§ 101-103.

[32] See U.S. Patent Application Publication No. US 2014/0272097 (http://portal.uspto.gov/pair/PublicPair).

[33] See supra note 1.

[34] Id.

[35] See supra note 29.

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