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ARTICLES

TRANSNATIONAL LAW AT THE INTERSECTION OF TECHNOLOGY AND SUSTAINABILITY: UNIDROIT'S WORK ON DIGITAL ASSETS, VERIFIED CARBON CREDITS, AND PRIVATE LAW

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TRANSNATIONAL LAW AT THE INTERSECTION OF TECHNOLOGY AND SUSTAINABILITY: UNIDROIT'S WORK ON DIGITAL ASSETS, VERIFIED CARBON CREDITS, AND PRIVATE LAW

Giulia Stella Previti[*]

I. INTRODUCTION

The International Institute for the Unification of Private Law ("UNIDROIT") is an independent intergovernmental organization whose statutory objective is to develop methods for modernizing, harmonizing, and coordinating international private and commercial law and to formulate uniform law instruments, principles, and rules.[1] UNIDROIT was originally set up in 1926 as an auxiliary organ of the League of Nations. Following the demise of the League, the Institute was re-established in 1940 on the basis of a multilateral agreement, the UNIDROIT Statute. Today, UNIDROIT is made up of sixty-five Member States, which are drawn from the five continents and represent a variety of legal, economic, and political systems as well as cultural backgrounds.[2]

Over the last sixty years, UNIDROIT has produced over thirty transnational private law instruments. These include instruments of so-called "hard law," i.e., treaties and conventions, as well as "soft law" normative legal texts, such as model laws, legal guides, and principles. They concern areas of work including access to credit, agriculture, capital markets and financial law, civil procedure, contracts, cultural property, law and technology, and sustainable development.

This Article will address UNIDROIT's efforts at the intersection of the latter two areas of work: law and technology, and sustainable development. In particular, it will provide an overview of (i) the UNIDROIT Principles on

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[1] *See* INT'L INST. FOR THE UNIFICATION OF PRIV. L. [UNIDROIT], STATUTE OF UNIDROIT, art. 1.

[2] *See* UNIDROIT, *UNIDROIT Membership*, https://www.UNIDROIT.org/about-UNIDROIT/members-states-2/ (last visited Oct. 23, 2026).

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Digital Assets and Private Law, a final instrument published in October 2023 after three years of intense work by experts and stakeholders in the field;[3] and (ii) the draft UNIDROIT Principles on the Legal Nature of Verified Carbon Credits, an ongoing project started in 2022 and expected to be concluded by 2026.[4]

Both instruments represent an attempt to provide States and market participants with legislative guidance in relation to new asset classes that are globally traded, but do not necessarily easily fit into traditional existing private law schemes. Recent technological advancements have resulted in novel tools with significant potential to, for example, further financial inclusivity or support efforts to combat climate change. However, a robust private law system is needed to reap the benefits of such opportunities.

Questions of private law affect the core of commercial transactions—including how the assets are bought and sold, whether and how they can be used as collateral, and what happens in the event of insolvency. Without clarity about the applicable private law framework, legal risk will cause uncertainty and increase transaction costs, which will stand in the way of market development. In addition, the lack of uniformity among States will hinder cross-border dealings.

As an intergovernmental organization focused on transnational commercial law, UNIDROIT is uniquely placed to address the legal questions posed by the emergence of new technologies and asset classes. With its network of government, industry, and private law experts, and under the guidance of its Member States, UNIDROIT's work is focused on the development of inclusive instruments to assist States and market participants in responding to the challenges and opportunities of an interconnected economy. The Institute's work in the fields of technology and sustainability offers a prime example of UNIDROIT's distinctive expertise and contribution to transnational law.

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[3] *See* UNIDROIT, *UNIDROIT Principles on Digital Assets and Private Law*, at i (2023) [hereinafter *DAPL Principles*].

[4] For details on the ongoing project on the legal nature of verified carbon credits, see UNIDROIT, *Verified Carbon Credits: Study LXXXVI—Legal Nature of Verified Carbon Credits*, https://www.UNIDROIT.org/work-in-progress/verified-carbon-credits/ [hereinafter *Legal Nature of Verified Carbon Credits*].

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II. THE UNIDROIT PRINCIPLES ON DIGITAL ASSETS AND PRIVATE LAW

A. Overview

The UNIDROIT Principles on Digital Assets and Private Law ("DAPL Principles") were conceived as an effort to harmonize national private law responses to the emergence of a new asset class and new methods of controlling data through the use of blockchain technology. Given the lack of established practice in this field, the DAPL Principles do not merely reflect best practices. Rather, they represent an original attempt at creating an international standard on the proprietary aspects of digital assets based on the work of experts from all representative legal families and systems.[5]

The DAPL Principles were published in 2023 after three years of intense work by almost thirty experts in private and technology law, and with the input of over fifty international, governmental, industry, regional, and nongovernmental organizations, as well as that of a Steering Committee composed of representatives of twenty-seven UNIDROIT Member States and the European Commission.[6] The DAPL Principles provide guidance on certain aspects of private law, focusing in particular on proprietary law, and address digital assets where they are the object of dispositions and acquisitions, and where interests in those assets are to be asserted against third parties.[7]

Recognizing the need for flexibility in this area, the DAPL Principles purposely adopt a "modest" approach.[8] They are an instrument of soft law structured as a series of principles with detailed commentary meant to provide guidance to legislators and users.[9] Indeed, the DAPL Principles are purposely drafted with a high level of generality in order to be: (i) jurisdiction neutral (meaning capable of applying to any legal culture); (ii) technology neutral; and (iii) organizationally neutral (meaning they take no position as to what part of the laws of a State they should be included in). With respect to this last point, the DAPL Principles operate as a "checklist" for States to

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[5] *See DAPL Principles*, *supra* note 3, at i.

[6] *Id.* at ii.

[7] *Id.* at 3, para. 0.9.

[8] *See* Louise Gullifer & Ignacio Tirado, *Proprietary Rights and Digital Assets: A "Modest Proposal" from a Transnational Law Perspective*, 87 LAW & CONTEMP. PROBS. 211, 231 (2025).

[9] *Id.*

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use against their existing legislation.[10] It may well be that a State's private law (such as its property, commercial, or contractual law) already addresses many of the issues covered by the DAPL Principles. Rather than proposing to overhaul existing private law frameworks, the DAPL Principles assist jurisdictions in taking a common approach by filling existing gaps and adding legal certainty in the application to digital assets of a pre-existing national private law regime.[11]

B. Structure of the DAPL Principles

The instrument provides nineteen Principles divided across seven sections: (i) scope and definitions; (ii) private international law; (iii) control and transfer; (iv) custody; (v) secured transactions; (vi) procedural law; and (vii) insolvency.[12] The key substantive rule is Principle 3(1), which provides that digital assets can be the subject of proprietary rights.[13] This is a fundamental basis of law which enables digital assets to be of commercial value and to be used in the same way as any other asset.[14] Most of the other Principles flow from, or depend on, this key principle, including Principle 14(1) providing that digital assets can be the subject of security rights and Principle 19(1) providing that proprietary rights in digital assets survive insolvency.[15] The term "proprietary rights" is deliberately used in a broad sense and includes both proprietary interests and rights with proprietary effects, that is, rights (or interests) that can be asserted against third parties (persons that are not necessarily contractual parties).[16]

Importantly, Principle 3(1) does not prescribe any specific requirements for the acquisition of a proprietary right in a given digital asset.[17] Instead,

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[10] *Id.* at 214.

[11] *DAPL Principles*, *supra* note 3, at ii.

[12] *See generally id.*

[13] *Id.* at princ. 3(1); Gullifer & Tirado, *supra* note 8, at 220.

[14] *See* Gullifer & Tirado, *supra* note 8, at 225 (explaining that "[t]his basic principle means that a country's property law applies to digital assets, and, without more, the normal consequences of property law would flow. Thus, for example, a person can have a right to a digital asset that is enforceable against third parties, a person with a proprietary right will have some sort of cause of action and remedies against anyone who takes that digital asset from them, and a digital asset can fall within the estate of its deceased owner").

[15] *DAPL Principles*, *supra* note 3, at princs. 14(1), 19(1).

[16] *Id.* at cmt. 3.4.

[17] *Id.* at cmt. 3.3.

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Principle 3(3) makes it explicit that "other law"—meaning the applicable domestic law—continues to apply to digital assets and to determine a number of important issues, including whether a person has a proprietary right in a digital asset and whether a proprietary right in a digital asset has been validly transferred to another person.[18] For example, whether a person holds a valid right of ownership in a certain digital asset is purposely not regulated by the DAPL Principles.

This is the essence of the DAPL Principles' soft-touch approach—they are not meant to displace existing private law and specifically existing property law frameworks, but rather they are to provide guidance on how to adapt existing law to account for the particularities of digital assets.

C. Core Elements of the DAPL Principles

For the core substantive rule provided by Principle 3(1) to work, digital assets as defined under the DAPL Principles have to possess the features which legal systems would expect them to have as the subject of proprietary rights.[19] In other words, the DAPL Principles need to address why digital assets can be the subject of proprietary rights. Thus, Principle 2(2) defines a digital asset functionally, as "an electronic record . . . capable of being subject to control."[20] In turn, under Principle 6(1), control consists of three factual abilities, two of which have to be exclusive: (i) the exclusive ability to prevent others from obtaining substantially all of the benefits from the digital asset; (ii) the ability to obtain substantially all the benefits from the digital asset; and (iii) the exclusive ability to transfer these abilities to another person.[21] The ability to exclude is recognized as an inherent aspect of proprietary rights.[22] Control, therefore, assumes in relation to digital assets a role that is a functional equivalent to that of possession of movables. Control in this context is a purely factual matter—whether control as defined in

[18] *Id.*

[19] *See* Gullifer & Tirado, *supra* note 8, at 225 (noting that the definition of digital asset in the DAPL Principles "is a definition for the purposes of a private law instrument, and it thus focuses on features of a digital asset that enable it to be the subject of proprietary rights").

[20] *See DAPL Principles*, *supra* note 3, at princ. 2(2).

[21] *Id.* at princ. 6(1).

[22] *Id.* at cmt. 6.1.

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Principle 6(1) exists is a matter of fact and does not depend on a legal conclusion.[23]

Control, as defined in the DAPL Principles, underpins several key provisions in the instrument. *First*, as discussed above, control is a constituent element of the definition of a digital asset.[24] Only those electronic records that can be subject to control as defined in Principle 6 are covered by the instrument and only those electronic records that can be subject to control can be the subject of proprietary rights.[25]

Second, control serves as a necessary (but not sufficient) criterion for qualifying for protection as an innocent acquirer of a digital asset. Principle 9(1) makes clear that the basic rule of *nemo dat quod non habet* (one cannot give what one does not have) applies to digital assets.[26] However, this is subject to the innocent acquisition rule set out in Principle 8, which is an exception to the *nemo dat* rule and represents a policy balance in favor of an innocent acquirer given the nature of the market in digital assets.[27] Digital assets are often traded through near-instantaneous transactions that occur in different jurisdictions and with transferors using pseudonyms. This makes proper diligence into the proprietary rights of the asset being acquired impractical and burdensome. The availability of an innocent acquisition rule facilitates transactions and contributes to legal certainty and efficient markets by reducing friction and costs.[28]

Principle 8(1) sets out the two requirements for a transferee to be an innocent acquirer: (i) a transferee must obtain control of the digital asset; and (ii) the innocent acquirer must comply with the requirements specified by the relevant State, meaning the State whose domestic law is the applicable law.[29] As set out in Principles 8(2) and 8(3), an innocent acquirer takes free of conflicting proprietary rights, and no rights based on a proprietary claim can be asserted against an innocent acquirer.[30]

Third, control serves as a method of third-party effectiveness of security rights. Principle 15 provides that, "in addition to any other methods of third-

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[23] *Id.* at cmt. 6.2.
[24] *Id.* at cmt. 6.4.
[25] *Id.*
[26] *See id.* at princ. 9(1).
[27] *Id.* at cmts. 8.1, 8.3.
[28] *See id.* at cmts. 8.3–.5; *see also* Gullifer & Tirado, *supra* note 8, at 226–27.
[29] *See DAPL Principles*, *supra* note 3, at princ. 8(1).
[30] *Id.* at princs. 8(2)–(3).

party effectiveness that apply to a security right in a digital asset under other law, a State should recogni[z]e that a security right in a digital asset may be made effective against third parties by control."[31] This applies "in a situation where the secured creditor controls the digital asset, but also where a custodian maintains the digital asset for the secured creditor, including through a sub-custodian."[32]

And, *finally*, control serves as a basis of priority of security rights in a digital asset. Principle 16 provides that a party that has perfected its security interest by control, as provided for in Principle 15, has priority over a party who has perfected its interest via another method, even if it was not the first in time to perfect its security right.[33] This approach contrasts with the general rule applicable in many States that gives priority to the first in time.[34] Providing for the non-temporal priority recognizes that the secured creditor who took the additional steps was relying to a greater extent on the encumbered asset. Also, in the event of default, "the secured creditor in control is best placed to enforce the security right, and [the provision] provides an incentive for secured creditors to place themselves in this favorable position. By giving a secured creditor the ability to obtain priority, the rule contributes to market certainty."[35]

The DAPL Principles also include provisions on custody,[36] linked assets,[37] and private international law.[38] With respect to custody, Section IV provides the baseline concept that a digital asset held in custody belongs to the client and not to the custodian.[39] Therefore, (i) a digital asset maintained by a custodian for a client is not available for the satisfaction of the claims of creditors of the custodian; and (ii) a digital asset maintained for clients is not part of the assets available for distribution to the custodian's creditors if the custodian enters into an insolvency-related proceeding.[40]

Linked assets are addressed in Principle 4, which provides that the digital assets covered by the DAPL Principles include digital assets that are

[31] *See id.* at cmt. 15.1.
[32] *Id.*
[33] *See id.* at cmt. 16.1.
[34] *See id.*
[35] *Id.* at cmt. 16.2.
[36] *See generally id.* at princs. 10–13.
[37] *See id.* at princ. 4.
[38] *See id.* at princ. 5.
[39] *See id.* at cmt. 13.1.
[40] *See id.* at princs. 10, 13; *see also* Gullifer & Tirado, *supra* note 8, at 224–25.

linked to another asset.[41] One common reason for linking a digital asset to another asset is to enable transactions with the other asset to be effected by a transfer of the digital asset.[42] The other asset is one which exists contemporaneously with, but separately from, the digital asset.[43] It could be a tangible, such as gold or real estate, or an intangible.[44] The operation of linked assets depends on two questions: (i) whether there is any link between the digital asset and the other asset; and (ii) whether the link has any legal effect on the parties' rights in relation to the other asset.[45]

The DAPL Principles leave the existence, requirements for, and legal effect of the link up to applicable domestic law ("other law" under the Principles), given that it may vary considerably from State to State. It is for the applicable law, as determined by the other law's conflict of laws rules, to establish whether there is a link and its legal effect.[46] In cases where there is an effective link (for example, where there is legislation providing for effective digital securities), the DAPL Principles would continue to apply to the digital asset itself. However, any specific law governing the other asset (such as securities law) would also apply and would likely be more significant in practice than the law governing the digital asset.

With respect to private international law, Principle 5 addresses the applicable law to proprietary issues concerning digital assets.[47] It recognizes that the usual connecting factors for choice-of-law rules (e.g., the location of persons, offices, activity, or assets) have no useful role to play in the context of digital assets, since digital assets are intangibles that have no physical *situs*.[48] Instead, Principle 5 aims to provide "an incentive for those who create new digital assets or govern existing systems for digital assets to specify the applicable law in or in association with the digital asset itself or the relevant system."[49]

Principle 5(1) lays out a "waterfall" of factors for the determination of the applicable law, starting with the law specified in the digital asset itself,

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[41] *DAPL Principles*, *supra* note 3, at princ. 4; *see also* Gullifer & Tirado, *supra* note 8, at 222.
[42] *DAPL Principles*, *supra* note 3, at cmt. 4.2.
[43] *Id.* at cmt. 4.3.
[44] *Id.* at cmts. 4.14, 4.27.
[45] *Id.* at cmt. 4.4.
[46] *Id.* at cmts. 4.4–.7.
[47] *See id.* at princ. 5.
[48] *Id.* at cmt. 5.4.
[49] *Id.*

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and, if there is none, the law of the State specified in the system in which the digital asset is recorded.[50] These rules are based on party autonomy.[51] Although many digital assets or systems currently do not include a specification of applicable law, the rules provide an incentive for such a specification to be included.[52] "It would also be possible for a digital asset, or a system, to specify that the [DAPL Principles] or some of them (supplemented where necessary by the specified domestic law) would be the law applicable to proprietary issues."[53]

If there is no law specified in the digital asset or in the system in which the digital asset is recorded, Principle 5 indicates the law of the State where the issuer has its statutory seat, provided the statutory seat is "readily ascertainable by the public."[54] If this is not available, then Principle 5 refers to the law of the forum State.[55]

1. Implementation of the DAPL Principles

Since their publication, the DAPL Principles have increasingly been recognized as the leading international standard on the proprietary rights of digital assets and have provided significant guidance in recent legislative efforts.[56] For example, domestic law in the United States continues to reflect the approach embodied in the DAPL Principles via enactment of amendments to the Uniform Commercial Code ("U.C.C.").[57] In particular, the new U.C.C. Article 12 addresses transactions involving certain types of digital assets referred to as "controllable electronic records," with Section 12-105 defining "control" consistently with DAPL Principle 6.[58] In addition, in March 2024 the Dubai International Financial Centre ("DIFC") announced the enactment of a new Digital Assets Law ("DAL") that addresses the legal

[50] *Id.* at cmt. 5.5.
[51] *Id.*
[52] *Id.*
[53] *Id.*; *see also* Gullifer & Tirado, *supra* note 8, at 218–19.
[54] *DAPL Principles*, *supra* note 3, at cmt. 5.9.
[55] *Id.* at cmts. 5.5–.15.
[56] *See generally* UNIDROIT, *Item No. 9 on the Agenda: Implementation Status and Promotion Strategy for UNIDROIT Instruments*, C.D. (105) 21 (Apr. 2025), https://www.unidroit.org/wp-content/uploads/2025/04/C.D.-105-21-Implementation-Strategy-Principles-on-Digital-Assets-and-Private-Law.pdf.
[57] *Id.*
[58] U.C.C. § 12-105 (Am. L. Inst. & Unif. L. Comm'n 2022).

characteristics of digital assets, including the proprietary nature of digital assets, as well as how digital assets may be controlled and transferred.[59] The approach to "control," as provided for in Article 10 of the DAL, is based on Principle 6 of the DAPL Principles.[60]

The DAPL Principles are currently available in Chinese, Japanese, Turkish, and Vietnamese.[61]

III. THE UNIDROIT PRINCIPLES ON THE LEGAL NATURE OF VERIFIED CARBON CREDITS

A. Overview

Like the DAPL Principles, the draft UNIDROIT Principles on the Legal Nature of Verified Carbon Credits ("draft VCC Principles") are a soft law instrument in the form of a set of black-letter principles and commentary.[62] They build on UNIDROIT's work on digital assets and private law and adapt the proprietary framework described above to the specificities of a different kind of instrument.

The draft VCC Principles are born out of a proposal by the International Swaps and Derivatives Association ("ISDA") and supported by the government of Paraguay.[63] The draft instrument recognizes that carbon markets are increasingly viewed as a critical means to channel financial resources into initiatives combating climate change.[64] Among other things, carbon markets may fundamentally contribute to cost-effectively reducing greenhouse gas ("GHG") emissions, mobilizing carbon finance, generating revenue, and promoting the adoption of low-carbon technologies and solutions.[65] Voluntary carbon markets which emerged in the 1990s as an

[59] DUBAI INT'L FIN. CTR. [DIFC], *DIFC Announces Enactment of New Digital Assets Law, New Law of Security and Related Amendments to Select Legislation* (Mar. 13, 2024), https://www.difc.com/whats-on/news/difc-announces-enactment-of-new-digital-assets-law---new-law-of-security-and-related-amendments.

[60] *See* DIGIT. ASSETS L. art. 10 (DIFC Law No. 2 of 2024); *see also* DIFC, *Digital Assets Law*, at para. 59, Consultation Paper No. 4 (Sept. 2023).

[61] *See Digital Assets and Private Law*, UNIDROIT, https://www.unidroit.org/instruments/digital-assets-and-private-law/ (last visited Oct. 23, 2026).

[62] UNIDROIT, *Draft UNIDROIT Principles on the Legal Nature of Verified Carbon Credits*, at para. 1, Study LXXXVI (July 2026) [hereinafter *Draft VCC Principles*].

[63] *See Legal Nature of Verified Carbon Credits*, *supra* note 4.

[64] *Draft VCC Principles*, *supra* note 62, at para. 1.

[65] *Id.*

effort to certify GHG reductions and removals outside of compliance schemes—have been described as non-regulatory means of directing financial resources to climate mitigation projects, helping make such projects financially viable.[66]

It has been projected that the market for verified carbon credits ("VCCs") could reach an estimated $50 billion USD by 2030.[67] However, prevailing legal uncertainties continue to constrain broad market participation.[68] To date, the legal nature of VCCs under private law remains largely unaddressed in domestic legislation and no global standards have been developed to tackle this specific issue.[69]

If private actors are unable to know with certainty how a VCC will be treated under private law, it will be difficult for them to assess their risk exposure and to transact or invest in VCCs.[70] Clarity on the legal nature of VCCs is therefore needed for the carbon market to scale and reach its full potential.[71] Certainty on the classification of a VCC under private law informs market mechanics such as how transfers may be completed by sale or as collateral as well as the treatment of VCCs held by an entity in insolvency.[72] Reducing legal uncertainty in the market decreases transactional risk and facilitates the allocation of capital to emissions-reducing projects, particularly in developing economies where the majority of VCC-generating initiatives are based.

The goal of UNIDROIT's VCC Principles is to provide legislative guidance on private law issues to enhance confidence in VCC transactions

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[66] U.N. COMM'N ON INT'L TRADE L. [UNCITRAL], *UNCITRAL/UNIDROIT Study on the Legal Nature of Verified Carbon Credits Issued by Independent Carbon Standard Setters*, U.N. Doc. A/CN.9/1191/Rev.1, at para. 49 (Aug. 31, 2024) (joint study between UNCITRAL and UNIDROIT on the legal nature of verified carbon credits issued by independent carbon standard setters) [hereinafter *UNCITRAL/UNIDROIT Study*].

[67] *Id.* at para. 68.

[68] *See generally* CLIFFORD CHANCE, *Enabling the Voluntary Carbon Market in the Context of the Paris Agreement* (2022), https://www.theglobalcity.uk/PositiveWebsite/media/Research-reports/Enabling-the-voluntary-carbon-market-2022.pdf; *see also UNCITRAL/UNIDROIT Study*, *supra* note 66, at para. 69.

[69] *See UNCITRAL/UNIDROIT Study*, *supra* note 66, at para. 91.

[70] *See id.* at paras. 88–89.

[71] *See* INT'L SWAPS & DERIVATIVES ASS'N [ISDA], *Legal Implications of Voluntary Carbon Credits* (Dec. 2021), https://www.isda.org/a/38ngE/Legal-Implications-of-Voluntary-Carbon-Credits.pdf.

[72] *See Draft VCC Principles*, *supra* note 62, at para. 6; *see also UNCITRAL/UNIDROIT Study*, *supra* note 66, at para. 93.

and support the development of a well-functioning carbon market. A robust carbon market could have several positive externalities. It could play a central role in fighting climate change, achieving the goals of the Paris Agreement, and facilitating the fulfillment of the UN Sustainable Development Goals.

1. What Is a VCC?

A VCC is commonly understood as a unit that is issued on the basis of a climate mitigation project, and that represents the achievement of a reduction or removal of one ton of carbon dioxide equivalent as verified by an independent third party—hence the term "*verified*" carbon credit.[73]

All VCCs are generated on the basis of a climate mitigation project—a project designed to reduce or remove emissions from the atmosphere.[74] There are typically three stages to the life cycle of a VCC, whether the VCC is issued by a government crediting body, the crediting body of the United Nations, or a private crediting body program such as, for example, Verra or Gold Standard.[75] These are: (i) VCC creation; (ii) primary and secondary market trading; and (iii) use and retirement.[76]

A VCC is generated, issued, and recorded on a VCC registry[77] after the climate mitigation project has been validated by a crediting body, which will assess whether the project complies with the applicable methodology and with the program's rules and regulations,[78] and the GHG reductions or removals achieved by that project have been verified by an independent third party (the "verifier"). The verifier is responsible for confirming, through the issuance of a verification report, that the activities of a climate mitigation project have resulted in the claimed emissions reductions or removals.[79] If the verifier issues a positive verification report and that report is approved by the crediting body, the crediting body will then issue the VCCs and the

[73] *See UNCITRAL/UNIDROIT Study*, *supra* note 66, at para. 10.
[74] *Id.*
[75] *See Draft VCC Principles*, *supra* note 62, at paras. 18, 20.
[76] For additional details on the life cycle of a VCC, see *id.* at paras. 18–63.
[77] Registries are recordkeeping systems for registered climate mitigation projects for which VCCs are issued. They store information and track VCCs at every step of their life cycle. *See UNCITRAL/UNIDROIT Study*, *supra* note 66, at para. 61.
[78] *See UNCITRAL/UNIDROIT Study*, *supra* note 66, at paras. 57–59.
[79] *See id.* at para. 60; *Draft VCC Principles*, *supra* note 62, at paras. 29–30.

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registry operator will register each VCC or batch of VCCs with a unique identifier in the registry account of the project proponent.[80]

Once issued and registered, the VCC can be disposed of by the current holder and acquired by a new holder.[81] The term "primary" market refers to the first issuance and purchase of VCCs from the project proponent. Primary market purchasers often are investors who provided funding in relation to the underlying climate mitigation project against the delivery of future VCCs.[82] The transfer between parties is recorded in the applicable registry account on instruction from the transferring party to the registry operator.[83] Such dispositions and acquisitions may occur multiple times in a secondary market.[84]

VCCs may have many uses. They may be purchased to comply with a statutory obligation, to calculate a corporate entity's net-zero compliance, to neutralize the impact of a positive emission that has occurred elsewhere, or as an investment, to be held and subsequently sold.[85] Retirement refers to the natural end of a VCC's life cycle, when the VCC is voluntarily and permanently removed from circulation and can no longer be transferred or transacted upon.[86] The retiring party may use proof of the VCC's retirement to support fulfillment of a compliance obligation or voluntary commitment.[87]

B. Development of a Transnational Private Law Instrument

From a private law perspective, the most important question to be addressed is whether a VCC is something that can be the subject of proprietary rights, and if so, why. There is general agreement that, to attract the necessary scale of investment needed for VCCs to raise climate finance,

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[80] *See Draft VCC Principles*, *supra* note 62, at paras. 25, 29–34 ("The project proponent is the individual or entity that possesses overall responsibility for the project. It is the entity in whose name the project is registered and is usually the entity into whose registry account the [crediting body] will instruct the VCCs to be recorded.").

[81] *See id.* at paras. 21, 43.

[82] *See id.* at para. 41.

[83] *Id.* at para. 43.

[84] *See id.*

[85] *See id.* at paras. 4, 45.

[86] *Id.* at princ. 2(16), para. 44.

[87] *See id.* at paras. 44–45.

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VCCs have to be deemed property.[88] Once it is established that a VCC can be the subject of proprietary rights, several significant questions that arise if a VCC is traded in a carbon market can be answered according to well-developed principles in applicable law.[89]

The draft VCC Principles are thus concerned with the constituent elements of a VCC that enable it to be the subject of proprietary rights. Importantly, the draft VCC Principles address the VCC after it is issued by a crediting body and registered in the account of a registered holder on a registry.[90] Just as in the context of the DAPL Principles, the instrument focuses on where VCCs are the object of dispositions and acquisitions, and where rights and interests in VCCs are to be asserted against third parties.[91] Issues relating to the underlying carbon mitigation project, or to the process by which the VCCs are verified before they are issued, are beyond the scope of the project and are addressed by a number of other initiatives in the market, both nationally and internationally.[92]

As with the DAPL Principles, the draft VCC Principles purposely adopt a minimally invasive approach. They are not meant to displace existing private law frameworks but rather are intended to assist jurisdictions in taking a common approach by providing guidance on how to adapt existing law to account for the idiosyncrasies of VCCs.

At the time of writing, the draft instrument is comprised of an introduction and nine sections which include twenty-five draft Principles covering (i) scope and definitions; (ii) private international law; (iii) creation and transfer; (iv) retirement and cancellation; (v) illegality; (vi) registry; (vii) custody; (viii) secured transactions; and (ix) insolvency. The instrument is expected to be finalized by the end of 2026 and published in early 2027.

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[88] *See* UNIDROIT Working Group on the Legal Nature of Voluntary Carbon Credits, *Summary Report of the First Session*, at paras. 51, 86, Study LXXXVI - W.G.1 - Doc. 3 (Jan. 2024), https://www.unidroit.org/wp-content/uploads/2024/01/Study-LXXXVI-W.G.1-Doc.-3-Report.pdf [hereinafter W.G.1].

[89] *See Draft VCC Principles*, *supra* note 62, at princ. 3(4), cmt. 3.1; *id.* at para. 66.

[90] *See id.* at cmt. 2.3.

[91] *See id.* at cmt. 1.1.

[92] *See, e.g.*, *UNCITRAL/UNIDROIT Study*, *supra* note 66, at paras. 70–71.

C. VCCs and Proprietary Rights

Just like in the DAPL Principles, draft Principle 3(1) provides that a VCC can be the subject of proprietary rights, with all other rules flowing from this principle.[93] However, the reasons why VCCs can be deemed property are distinct from the analytical framework applicable to digital assets. As described above, the concept of "control" is central to the DAPL Principles' proprietary law analysis.[94] In that context, control is understood as factual control and is akin to possession. Under the DAPL Principles, the person who controls the digital assets does so in fact; because of the way digital assets are set up, there is a technical system that prevents anyone else from controlling the asset.[95]

In the context of VCCs, however, the holder is unlikely to enjoy the same degree of factual control. VCCs are not widely issued as digital assets on decentralized blockchains.[96] Rather, the records are kept by a registry operator who then acts in accordance with the instructions provided by its registered account holders, subject to the registry's terms and conditions.[97]

After considering rights- and form-based approaches,[98] the UNIDROIT Working Group on the Legal Nature of VCCs ("Working Group") focused on identifying the relevant attributes of property that are common to most jurisdictions[99] and determined that a VCC "has attributes that make it possible for it to be the subject of proprietary rights."[100]

The definition of a VCC in draft Principle 2(1) is specifically conceived to reflect the nature of a VCC as an intangible asset[101] and includes four conditions that are necessary for a VCC to exist, namely: (a) a positive verification statement must verify that the mitigation outcome has been achieved; (b) the positive verification statement must have been approved by a crediting body; (c) the VCC must be credited to an account in a VCC

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[93] *Draft VCC Principles*, *supra* note 62, at princ. 3(1).
[94] *DAPL Principles*, *supra* note 3, at princ. 6.
[95] *Id.*
[96] *See Draft VCC Principles*, *supra* note 62, at para. 36 (noting that most crediting bodies manage their own registries through contracted registry service providers).
[97] *Id.* at cmt. 14.5–.10.
[98] *See* W.G.1, *supra* note 88, at paras. 50–90.
[99] *See id.* at para. 72.
[100] *Draft VCC Principles*, *supra* note 62, at cmt. 3.2.
[101] *See id.* at princ. 2(1), cmt. 2.3.

registry; and (d) the VCC must be individuated by a unique identifier, such as a serial number.[102]

As explained in the commentary to the draft instrument, a VCC that falls within the Principle 2(1) definition has attributes that make it possible for it to be the subject of proprietary rights[103] since registration with a unique identifier allows the VCC to be individuated, controllable, rivalrous, and transferable from one account to another.[104]

Under the draft Principles, a VCC reifies the verified fact that a mitigation outcome has been achieved at the time at which the unit came into existence. Importantly, the VCC does not represent the mitigation outcome, which, on its own, lacks the determinacy necessary to be the subject of proprietary rights.

Just like in the DAPL Principles, draft Principle 3(1) "does not prescribe any specific requirements for the acquisition of a proprietary right in a given VCC."[105] Instead, draft Principle 3(4) makes it explicit that the applicable domestic law—again, "other law"—continues to apply to VCCs and to determine a number of important issues, including whether a person holds a proprietary right in a VCC, subject to limited exceptions.[106]

One of these exceptions is addressed in draft Principle 5 concerning the creation of a VCC. Draft Principle 5(1) provides that a VCC comes into existence when a unique identifier has been allocated to the VCC and the VCC has been credited to an account in the registry.[107] When a VCC first comes into existence, it is a new unit that has not been previously capable of being the subject of proprietary rights.[108] Therefore, the instrument provides that "there has to be a person who is the first to have a proprietary right in the VCC."[109] Pursuant to draft Principle 5(2), when a VCC first comes into existence, the person to first have a proprietary right in the VCC is either the registered holder of the VCC (usually the project proponent) or, in cases of custodial arrangements, the person for whom the registered holder maintains

[102] *Id.* at princ. 2(1), cmts. 2.13–.20.
[103] *See id.* at cmts. 2.5, 2.13–.18.
[104] *See id.* at cmt. 3.2.
[105] *See id.* at princ. 3(1); *id.* at cmt. 3.3.
[106] *See id.* at princ. 3(4).
[107] *Id.* at princ. 5(1).
[108] *Id.* at cmt. 5.3.
[109] *Id.*

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the VCC.[110] This, however, pertains to a snapshot in time—after the moment when the VCC comes into existence, the question of whether a person has, at any time, a proprietary right in a VCC is, generally, a matter for other law.[111]

The other exception is, like for the DAPL Principles, provided in the context of the protection of innocent acquirers.[112] In the absence of an innocent acquisition rule, the *nemo dat* rule would normally apply unexempted in the context of intangibles. As with digital assets, unexempted application of the *nemo dat* rule would be particularly burdensome in the case of VCCs. Without protection for innocent acquirers, potential buyers might hesitate to participate in transactions.[113] Therefore, as noted in the commentary to Principle 7, "by prioritizing the innocent acquirer's rights, the rule creates a robust and predictable framework for VCC trading, encouraging investment and liquidity in the market."[114]

As in the DAPL Principles, the draft VCC Principles provide that a VCC can be the subject of security rights.[115] The commentary states that "[s]ince security rights are a subset of proprietary rights, it follows that VCCs can also be used as collateral in secured transactions, just like other types of movable assets."[116] The draft VCC Principles take a soft-touch approach, providing asset-specific rules in Principles 21, 22, and 23 in light of the unique features of VCCs.[117] Again, as specified in the draft instrument, "[t]he aim is to facilitate the integration of VCCs into existing secured transactions regimes without causing unnecessary disruption to well-functioning legal frameworks."[118]

Draft Principle 21 establishes that, in addition to any other methods of third-party effectiveness that apply to a security right in a VCC under other law, a State should recognize that a security right in a VCC may be made effective against third parties upon the secured creditor becoming the registered holder of the VCC.[119] Draft Principle 22 establishes that, "in

[110] *Id.* at princ. 5(2).
[111] *Id.* at princ. 5(2), cmts. 5.3–.5.
[112] *Id.* at princ. 7.
[113] *Id.*
[114] *Id.* at cmt. 7.4.
[115] *Id.* at princ. 20(1).
[116] *Id.* at cmt. 20.4.
[117] *See id.* at princs. 21–23.
[118] *Id.* at cmt. 20.6.
[119] *Id.* at princ. 21, cmt. 21.1.

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addition to any other methods of third-party effectiveness that apply to a security right in a VCC under other law, a State should recognize a 'control agreement' as a method to make a security right in a VCC effective against third parties."[120]

Draft Principle 23 addresses "priority conflicts between secured creditors that have made their security rights effective against third parties through the methods specified in Principles 21 or 22 (crediting to a [securities] account or control agreement), while another secured creditor has used alternative methods recogni[z]ed by other applicable law (such as registration)."[121] The draft Principle establishes a non-temporal priority rule: "the secured creditor using the Principle 21 or Principle 22 methods will have priority even if these steps were taken after another creditor had already made its security right effective against third parties through registration or other means."[122]

Section IV of the draft VCC Principles addresses a VCC's retirement and cancellation. A VCC that is retired or canceled ceases to be capable of being the subject of a proprietary right. Retirement is the voluntary endpoint whereby the registered holder instructs the VCC registry to cancel the VCC, claiming the environmental benefit. Draft Principle 9 addresses cancellation and provides that a VCC can be canceled because it has been revoked, when it is voluntarily canceled, or in accordance with "other law."[123] Draft Principle 10 provides that a VCC can be canceled for revocation if (i) the VCC was created as a result of fraud, or (ii) the creation of the VCC was a complete nullity.[124] These two grounds for revocation are exhaustive under the draft VCC Principles. If a VCC is canceled for revocation under Principle 10, it is treated as having been void from the outset and as having never been the subject of proprietary rights.[125]

[120] *Id.* at princ. 22, cmt. 22.1.
[121] *Id.* at princ. 23, cmt. 23.1.
[122] *Id.*
[123] *Id.* at princ. 9.
[124] *Id.* at princ. 10.
[125] *Id.*

D. Timeline for Finalization of the VCC Principles

The Working Group tasked with developing the VCC Principles has, to date, held ten sessions.[126] The VCC Principles' iteration referred to herein has been shared for public consultation. The purpose of the consultation is to raise awareness about the instrument, encourage broad participation of stakeholders in the final stage of the drafting process, seek feedback on whether the instrument sufficiently addresses the core issues relating to the trade in VCCs, and ensure that the instrument is well-suited to application in different contexts and provides a balanced legal framework from a commercial and a property law perspective.

The Working Group considered feedback from the consultation at its tenth session in October 2026, and adoption of the instrument by UNIDROIT's governing bodies is expected to be sought in December 2026.[127]

In parallel to working on the completion of the instrument, the Working Group has been considering the development of a tokenization annex to address whether and how VCCs (as defined in the Principles) could exist on decentralized structures.

In keeping with UNIDROIT's established methodology, the Working Group is composed of thirteen international experts representing different legal systems and geographic regions, selected for their expertise in the fields of carbon credit trading, environmental law, property law, contract law, secured transactions, and digital technology. Government representatives, international organizations, standard setters in the carbon market, industry associations, legal practitioners, financial sector representatives, and members of academic institutions with expertise in the field of VCCs and private law participate as observers in the Working Group.[128] In addition, the draft instrument has been shared for Member State consultation through a dedicated Consultative Committee comprised of experts appointed by UNIDROIT Member States. The breadth of the experience and viewpoints represented in the Working Group and shared through the consultation

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[126] *See Legal Nature of Verified Carbon Credits*, *supra* note 4.

[127] *Tenth Session of the Working Group on the Legal Nature of Verified Carbon Credits*, UNIDROIT (Oct. 20, 2026), https://www.unidroit.org/tenth-session-of-the-working-group-on-the-legal-nature-of-verified-carbon-credits/.

[128] *See Legal Nature of Verified Carbon Credits*, *supra* note 4.

processes helps ensure that the draft instrument responds to the current realities of the VCC market while also establishing the foundation for its future development as an essential tool of climate finance.

IV. CONCLUSION

UNIDROIT's transnational instruments at the intersection of law and technology and sustainable development represent modern and inclusive efforts to develop best practices in novel areas of critical importance to the global economy. Through the development of soft law tools that are targeted in scope, UNIDROIT provides essential guidance to States and helps harmonize domestic laws without interfering with established national private law frameworks. By supporting the integration of digital assets into pre-existing domestic property schemes, the DAPL Principles facilitate transactions in digital assets and access to the global digital economy, thus potentially advancing financial inclusion. By clarifying the legal nature of VCCs under private law, the VCC Principles support the scaling of the carbon market and the flow of finance to much-needed climate mitigation projects. UNIDROIT's work underscores the role transnational private law can play in assisting States to not only meet the challenges and reap the benefits of a growing interconnected digital economy, but to do so in a way that helps align private interests with long-term sustainability goals.

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