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Warehouse Receipts**

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**DRAFTING OPTIONS ON ELECTRONIC WAREHOUSE RECEIPTS FOR THE MLWR
AND GUIDE TO ENACTMENT¹**

¹ These Drafting Options were prepared by prepared by Working Group member Ms Teresa Rodríguez de las Heras Ballell based on, included in the Summary Report and Discussion Paper for the Sepcial Workshop on Electronic WArehouses Receipts (26 January 2022), included in Annexe 1 and 2, respectively.

I. INTRODUCTION

1. On 26 January 2022, a Special Workshop on Electronic Warehouse Receipts took place in remote format with the attendance of six participants from the Working Group, two participants from UNCITRAL, and four participants from the UNIDROIT Secretariat (Summary Report of the Workshop including a list of participants in Annexe 1). The aim of the workshop was to consider and discuss options and possible limitations in addressing technology-related aspects in the Model Law on Warehouse Receipts (MLWR). More precisely, it aimed to identify what provisions the MLWR could propose to constitute an enabling legal framework for electronic warehouse receipts (EWRs) and ensure that such provisions reflect current practices, align with approaches adopted in relevant existing and forthcoming international legal instruments, and, at the same time, foster future developments whether in practice, business models, or technology.

2. A Discussion Paper, prepared by *Ms Teresa Rodríguez de las Heras Ballell*, had been distributed to the participants in advance and was presented and discussed at the Workshop (Discussion Paper in Annexe 2). The Discussion Paper presented the draft MLWR provisions that might benefit from revision or simply reconsideration in order to draft an EWR-enabling Model Law. Furthermore, the paper included an Annex which mapped relevant international instruments and their approach to integrating electronic aspects that might be relevant for EWRs. The Annex also described the approach taken by the in-progress UNIDROIT Project on Digital Assets and Private Law.

3. This Paper is based on the discussion at the Workshop and builds on the consensus among participants to provide input to the fourth meeting of the Working Group.

4. There was consensus among participants that the Discussion Paper set out all the relevant issues to be considered by the WG concerning EWRs: scope, definitions, terminology, loss, transfer and control, and custody.

5. However, all the relevant issues to be considered in respect of EWRs were not deemed to deserve the same treatment in the future MLWR. While a few issues might be addressed in the provisions of the MLWR themselves, others, albeit relevant, were better envisaged in the accompanying guide to the MLWR. Likewise, some issues might have needed innovative drafting solutions in the MLWR, whereas other issues were deemed properly addressed as currently drafted.

6. Thus, Section III contains a proposal on which issues should be dealt with in the MLWR provisions and which issues should be addressed in detail in the guide to enactment in order to provide guidance to legislators and regulators for drafting regulations and implementing the MLWR in practice in each jurisdiction.

7. The basic concepts and principles enshrined in the MLETR will constitute the decisional basis on how to address and formulate legal solutions to those EWR-related issues and deviation from such concepts and principles is not expected. This approach, which builds on such consolidated principles, is based on the support obtained by the MLETR and the need to ensure consistency and predictability in international trade, and also tallies with the aspiration to draft a MLWR as a forward-looking model, that reflects the developments on the ground and underlying practice in the market. The preservation of neutrality in addressing models, technology, and terminology would facilitate the adaptability of the MLWR to embrace future business models, technological developments, and emerging market practices. It is necessary to strike an adequate balance between technology-neutral provisions in the text of the MLWR, and technology-sensitive, market-oriented guidance in the accompanying document.

8. Yet, there is consensus that the MLWR should signal the importance of EWRs more effectively. To that end, some drafting suggestions in Section II may enhance the ability of the MLWR to encourage States and market participants to transition to EWRs. In drafting an EWR-sensitive MLWR,

the Working Group should be mindful of the extraordinary penetration of digital technologies in warehousing practices in many economies, and the remarkable emergence of fintech platforms, technology-intensive agricultural models, and blockchain (DLT) solutions. The MLWR should not only be drafted with the aim to provide a forward-looking model, able to accommodate and encourage innovative solutions, but also assuming that these emerging technologies are already a reality in many jurisdictions, where legislators and regulators may need guidance to adopt a legal/regulatory framework that does not run the risk of soon becoming obsolete and is appreciated by the industry as EWR-enabling.

9. Taking the findings and the consensus on the key issues discussed at the Workshop into consideration, this Paper contains several recommendations for the Working Group to consider and deliberate on regarding EWRs.

II. DRAFTING OPTIONS AND RECOMMENDATIONS ON THE SCOPE AND THE TERMINOLOGY

10. As there was consensus that the MLWR should signal the importance of EWRs more prominently, the current draft may benefit from a few drafting suggestions to be considered by the Working Group.

11. The MLWR might convey its aim to be fully technology neutral more effectively. First reference in the current draft to EWR is in Article 7 followed by Article 9. But none of these provisions are included in the Chapter I that delimits the scope of application and contains the general provisions. Therefore, the WG may wish to consider the following drafting options:

- a. Article 1. Adding to the current wording: *This law applies to warehouse receipts both...and.../either in paper or electronic form*
- b. Article 1. Adding a second paragraph. *This law applies to warehouse receipts. Warehouse receipts may be [issued] in paper or electronic form.*
- c. Article 2. Four alternative options for the definitions of “Warehouse Receipt” are suggested in the current draft. The four options should be reviewed from an EWR-friendly perspective and assess:
 - i. Whether the terminology used is perceived as sufficiently neutral (document, in writing) by market actors and legislators so as to provide certainty and enable the development of EWR systems. The principles enshrined in the UNCITRAL Model Laws on Electronic Commerce (MLEC) and on Electronic Signatures (MLES), and the UN Convention on the Use of Electronic Communications in International Contracts (CEC) guide the application of concepts such as “document” or “in writing” to EWRs on the basis of functional equivalence. Nonetheless, whether a more clear EWR-enabling signal to the market would help legislators, practitioners, and parties to design and operate EWR systems might be discussed. Three basic solution may be considered:
 1. Select the definition of “Warehouse Receipt” that does not include terms - such as “document” containing or describing...(even if the functional equivalence principle would solve any doubt) - that might be perceived as paper-dependent concepts limiting EWR models.
 2. Include a specific recognition of EWR in the chosen definition of warehouse receipt by explicitly referring to “paper or electronic form”.

3. Include the definitions of electronic record or data message and/or the acknowledgement of functional equivalence for writing, signature, or original (Arts. 6, 7 and 8 MLEC) in the text (or in the guide to enactment), as a reminder. This becomes particularly relevant considering that the current Article 9 bases the functional equivalence (or non-discrimination) of the EWR on two concepts – “electronic record” and “electronic transferable record” – that are mentioned in that provision for the first time in the text with no prior definition.
 - ii. Whether a definition of “Electronic Warehouse Receipt” might be needed, considering that such a term is first used in Article 9 of the current draft and not mentioned as “EWR” before in the text. If this option is chosen, the definition of EWR might use the term electronic record and refer to the conditions laid down in the current Article 9.
- d. Should neither the scope of the MLWR in Article 1 nor the definitions in Article 2 be modified as suggested above (a, b, c), the relocation of current Article 7 to Chapter I might be considered as an alternative. Even if Article 7 is now placed in Chapter II (Issuance of Warehouse Receipts) because it refers to in which form the warehouse receipt may be issued, the recognition of EWR is not only at the issuing stage, but covers the entire operation of the EWR. Thus, Article 7, slightly modified, might be relocated in Chapter I.
- e. The Working Group might wish to reconsider the possibility of drafting current Article 9 (in its current position in the text or relocated in the Chapter I) in a more straightforward and affirmative manner, even if that may deviate from the legal-recognition formula employed in the MLEC (Art. 5) or the MLETR (Art. 7) – “shall not be denied legal effect, validity or enforceability on the sole ground that it is in electronic form”. Should the MLWR aspire to create a favourable legal framework for EWRs and accommodate innovative models and practices more convincingly, a more straightforward and positive message might be advisable. The formula of non-discrimination on the sole grounds of the applied technology might be interpreted as giving priority to paper-based warehouse receipts as the benchmark and treating EWRs as a mere alternative. In an increasingly digital environment, such a statement might be seen as too cautious and may even be deterring. Parties and intermediaries may find very limited guidance in this general provision to devise and develop innovative models for EWRs with sufficient certainty. Should regulators be more proactive in enabling or even requiring the transition to digital model (EWR models) with a positive recognition, parties and intermediaries will design solutions that are law-compliant and therefore develop EWR models within the scope and under the requirements provided for by the regulators. To that end, an affirmative message might be advisable and send a more evident signal to the market: “an electronic warehouse receipt is valid and enforceable if the following conditions are met...”.

12. There was consensus that the MLWR should use general and simple language that was familiar to the legislators and the market, trying to strike a balance between using terms recognised by the industry and avoiding terminology that might block the development of EWR models (registry-based models, token models, or other future models) and the full recognition of EWR on an equal footing to paper receipts. In that regard, and as far as EWRs are concerned, two ideas may be taken into consideration:

- a. Preserving the paper-reminiscent terminology and drafting, even if it is not optimal, may help regulators to easily bridge old rules with new technology and business

models and ensure that, with a fully technology neutral approach, the law is prepared to embrace future market and technology developments.

- b. Reviewing the text thoroughly to ensure that terminology is not, in practice, rendering it impossible, or very difficult, to ensure that the principles are by and large the same for and can equally be applied to a paper warehouse receipt system, a registry system, and a token system. If a term used in the text does not permit a reasonable application in any of the EWR models, the WG may decide to remove the term and replace it with a more neutral alternative, if possible, or, otherwise, at least provide clarifications in the guide to enactment.

13. Yet, the possibility of dynamically and automatically updating the information (quality, location, other terms) in EWRs using technology should be considered and properly addressed in the MLWR. In a “dynamic” EWR, some information in the document may be changed automatically. Should the monitoring and collection of the changing information be automated (IoT devices), the EWR may be updated automatically (by a smart contract) without human intervention. These changes should not contradict the requirement of integrity as per Article 9.2 of the draft MLWR; otherwise, the potential of these technologies would be unjustifiably undermined.

14. There are two issues to address in Article 9.2.

- a. The current drafting does already state that authorised changes may take place and are included in the assessment of the integrity requirement. Whether a prior general approval of the updating mechanism (and/or the updating requirements) is valid or a specific consent for each change is needed might be discussed and, if so, how does this impact the use of automated updating mechanisms.
- b. A distinction should be drawn between the update of information contained in Articles 8 (1) and (2), as it affects the existence of the EWR as a warehouse receipt and its validity, and that of other information added to the EWR for different purposes. How and if such automated update is to be made and deemed authorized, effective, or simply possible may differ.

15. In the current drafting, the compliance with the integrity requirement does not interfere with neither changes that are deemed “authorised changes” nor changes “which arise in the normal course of communication, storage and display”. The Working Group may wish to discuss whether it would be necessary:

- a. Either to explicitly recognize the possibility of “dynamic” EWR and specify how and when changes are deemed authorized.
- b. And/or expand the exceptions beyond “normal course of communication, storage and display” to cover certain changes in “dynamic” EWR without human intervention.
- c. Or keep the current drafting and clarify all these aspects in the guide to enactment.

III. ISSUES TO ADDRESS IN THE GUIDE TO ENACTMENT

16. There was consensus that the MLWR should be kept as technology neutral as possible, limiting the incorporation of technology-specific, or model-specific specifications in the provisions. The MLWR would then provide a simple model for primary legislation in the enacting jurisdiction, that may be complemented or supplemented by regulations, subsidiary legislation, or even guideline documents. An accompanying document to the MLWR shall provide guidance to legislators and regulators to implement the MLWR, draft, and adopt subsequent regulations, as well as to interpret and apply the MLWR provisions to different technology and business models.

17. Should the MLWR include the recommendations suggested in Section II above, after the consideration of the WG, additional forward-looking details could be included in the accompanying guide. This would help countries develop subsidiary legislation, and practitioners and parties to interpret legal provisions and apply them to different business models and technological solutions.

18. At present, primary technological models operating in the market belong to two main categories: models based on registry-based schemes or models operating as a token-based systems. Various sub-models are available within each category, be they single, centralised or multiple registries, general registries or sector-specific, public or private registers, etc. Besides, it must be noted that in many jurisdictions (all African EWR software solutions) EWR models for issuance, transfer or encumbrance are closely integrated in or interface with commodity exchange-trading and clearing platforms.

19. Both categories of models free warehouse receipts from the paper medium and are data-based, albeit with some differences. Whereas registry-based models replace the “actions of issuance, transfer, circulation” of the warehouse receipt with registrations in a (single or multiple) centralised register, token-based models might to a certain extent reproduce the “circulation” of conventional paper-based warehouse receipts under the new parameters of exclusive access or control. Even if these two models are the ones currently in operation, the fact that technological progress and business evolution can trigger the emergence and introduction of new models in the near future cannot be disregarded. Therefore, the guide to enactment should provide forward-looking specifications and guidance to assist parties and other actors to design law-compliant models, and render the MLWR conducive to any future development in technological models for EWRs.

20. The issues proposed in the Discussion Paper for the Special Workshop on Electronic Warehouse Receipts (26 January 2022) were deemed relevant for the project and worthy of attention either in the MLWR or in the guide to enactment by the participants. Thus, the Working Group may wish to consider the following issues to be included and elaborated on in the guide to enactment.

- a. Regardless of the drafting option (para. 11 above) that the Working Group may decide to follow, the guide to enactment should provide guidance and specify how the MLWR embraces and is expected to apply to current and future EWR models. How basic concepts of the MLWR apply to registry-based or token-based models would assist regulators in drafting subsidiary legislation or regulations, and practitioners and parties in designing and operating forward-looking EWR models.

Should the warehouse receipt be defined as a document (“issued and signed”) for the purposes of the MLWR, the application of the functional equivalence principles can easily “read” these rules as applicable to electronic documents duly signed with electronic signatures. An annotation in a centralised or distributed registry and/or the creation of a digital asset (token) can be defined as a “document” in electronic form (electronic record), provided the clarification is stated in the MLWR or simply if a

functional-equivalence interpretation is adopted. Parties may find the fact that an annotation/book entry in a register or in a blockchain-like system is clearly a “document” less obvious, or might even hesitate to identify when issuance takes place if there is simply a registration/notice. More technology-specific or technology-sensitive guidance may provide certainty in transactions and help parties to develop innovative yet predictable models.

- b. The compliance with the integrity requirement for the purposes of current Article 9.2 by “dynamic” EWRs requires guidance and explanation for regulators and parties to leverage the possibilities and unleash the potential of IoT, smart contracts, and other digital technologies that enable automated updates to EWRs.

The guide to enactment should tackle the issues suggested in paras. 14 and 15 above and provide the necessary guidance depending on the drafting option that the Working Group will follow.

- c. The application of Article 10 of the draft MLWR may require technology-specific explanations and guidance for its application to EWRs: loss, destruction, replacement – loss of control, irretrievability, lack of interoperability, etc. Among other aspects, one must carefully consider whether loss, in the case of an EWR, is only applicable to the EWR or should be extended to the relevant information to the control the digital asset/electronic record, given the similar consequences.
- d. It might be advisable to provide a more specific treatment of register-based models for transfer purposes insofar as they cannot operate for bearer warehouse receipts.
- e. Given that there was no consensus neither to specify the concept of control for EWR models nor to deviate, at least substantially, from the current approach in Article 11.3, technology-specific, and above all model-specific, explanations in the guide to enactment will be instrumental to provide legal certainty in the operation of the EWRs that are currently in operation and to enable the design of innovative models for the issuance and the transfer of EWRs.

Depending on the final draft, the guide to enactment may include guidance on the following issues:

- a. A description of the concept of control as per Article 11 MLETR with a detailed specification of control in EWR models.
- b. Guidance on how the exclusivity criterion of control may be articulated in the different EWR models and how technology solutions ensure exclusivity.
- c. Model-specific explanations or specifications on how transfer of control operates – registry models, DLT models, token models.
- d. Identification methods and identity solutions to identify the person in control.

ANNEXE 1**MODEL LAW ON WAREHOUSE RECEIPTS PROJECT
SPECIAL WORKSHOP ON ELECTRONIC WAREHOUSE RECEIPTS
26 JANUARY 2022 (REMOTE)****SUMMARY REPORT**

1. The workshop took place in remote format and was attended by six participants from the Working Group, two participants from UNCITRAL, and four participants from the UNIDROIT Secretariat. The aim of the workshop was to consider and discuss what provisions the Model Law on Warehouse Receipts (MLWR) might propose to specifically address electronic warehouse receipts (EWRs). A Discussion Paper for the workshop, prepared by *Ms Teresa Rodríguez de las Heras Ballell*, had been distributed to the participants in advance.
2. Insofar as interventions made by the participants during the discussion concern similar aspects, in the following they will be grouped together for better readability; the order of the interventions is not followed.
3. The Secretariat introduced the workshop, noting that the following three criteria had guided the preparation of the Discussion Paper: the Model Law provisions (i) should regulate all aspects needed to provide an enabling legal framework for EWRs, (ii) be consistent with relevant international instruments, in particular the UNCITRAL Model Law on Electronic Transferable Records (MLETR), and (iii) reflect industry practices and common legislative approaches. It was underlined that the Paper was meant as a starting point for discussion.
4. *Ms Rodríguez de las Heras Ballell* presented the Discussion Paper. The Paper explored what provisions the MLWR could propose to constitute an enabling legal framework for EWRs, and which draft MLWR provisions might benefit from revision or simple reconsideration to this end. *Ms Rodríguez de las Heras Ballell* addressed the following aspects of the MLWR in detail: scope; definitions and terminology; loss of EWRs; transfer of EWRs; control over EWRs; and the role of a custodian. The floor was then opened for discussion.
5. *In the ensuing discussion, there was consensus among participants that the Discussion Paper set out all relevant issues that had to be considered concerning EWRs for the purposes of the project.*
6. *There was also consensus among participants that the MLWR should signal the importance of EWRs more prominently than the current draft, encouraging States and market participants to transition to EWRs.*
7. *The large majority of the participants agreed that the MLWR should take the MLETR provisions as a minimum and build upon them, without deviating from the basic concepts and terminology used in the MLETR.*
 - a. *Mr José Angelo Estrella Faria* highlighted the importance of considering the broader policy context and the political support that the MLETR had obtained. He recalled that under the UK presidency of G7, a strong political statement had been issued encouraging States to implement the MLETR, which had constituted a rare appeal to incorporate a specific international private law instrument. Similarly, the ICC in their Digital Trade Road Map had also invited governments to implement the MLETR. Based on this political context, he invited the Working Group to be very cautious, though this did not imply that the MLWR had to copy-paste the MLETR, as some adaption might be needed in the particular context of warehouse receipts.

- b. The narrowest approach was put forward by *Mr Andrea Tosato*, who argued that any provisions beyond the principles laid down in the MLETR should be included in an accompanying guide, not in the black letter rules of the MLWR, as any other approach might be premature.

8. *There seemed to be some consensus that the notions adopted in the ongoing UNIDROIT Project on Digital Assets and Private Law would not necessarily need to inform the drafting of the MLWR.*

- a. *Mr Estrella Faria* remarked that the Digital Assets Project was still evolving, and its principles had not yet been tested on the ground. He underlined that the scope of that project was much broader, and to some extent aimed at the core of property law, which was not subject of the MLWR. Similarly, *Mr Luca Castellani* pointed out the difference in scope, noting that both the MLETR and the MLWR rather dealt with commercial documents.
- b. *Mr Marek Dubovec* cautioned against incorporating blockchain concepts addressed in the Digital Assets Project in the warehouse receipts industry. In his view, the MLWR should be conceived as a law for emerging economies seeking to set up warehouse receipt systems and platforms. While the MLWR could cover tokens, the vast majority of transactions covered would be classical deposits of agricultural commodities, and thus no specific provisions on tokens and control should be included which could confuse implementing States.

9. *Regarding the level of detail, there was consensus among participants that the MLWR need not cover all details elaborated in the Discussion Paper, and that specifications which may be relevant but left uncovered by the MLWR should be included in the guide to enactment to provide guidance to regulators for drafting subsidiary legislation.*

- a. *Mr Dubovec* recommended including the foundational set of rules in the MLWR and suggesting to States that might provide for some of the details in their regulations. He recalled that over recent years, some States had enacted specific warehouse receipts legislation which had been suitable to cover details. However, the MLWR should also take into account that a State might include its provisions in the civil or commercial code, in which case some details would be provided in a regulation rather than in these codes.
- b. *Mr Estrella Faria* remarked that, regardless of whether a country included these provisions in a civil or commercial code, or issued them in a separate act, there would be a second layer of provisions in which governments might opt for a certain business model of issuing and managing EWRs, at least for a period of time. The MLWR should provide rules of a level of generality that was sufficient to accommodate that, while also appreciating the importance of providing some guidance to market participants. In his view, the question was whether the Working Group was in a position to provide the guidance at this stage, or whether an accompanying guide should offer different options to regulators.
- c. Reporting on recent experiences with legislative reforms in Ethiopia, Senegal, Côte d'Ivoire and other African countries, *Mr Gross* highlighted that most of them aimed to keep the primary legislation simple and only set out the underlying principles. Accordingly, he suggested keeping the text of the MLWR simple, and using technology-neutral language. Conversely, he recommended including substantial additional forward-looking details in the accompanying guide to help countries wishing to develop subsidiary legislation.

10. *A few experts emphasised that the MLWR should be a forward-looking model that reflected the developments on the ground and underlying practice in the value chains.*

- a. *Mr Gross* recommended participants to be mindful of the fact that the traditional agricultural warehouse no longer reflected the realities on the ground, which in many even underdeveloped economies were very much changing. He highlighted the remarkable trend over the last year, particularly in Africa, of the penetration of the traditional agricultural value chains by agtech and fintech platforms. Goods were moving much faster along value chains with better technologies, such as electronic Uber-type systems, which had become almost mass-market in different parts in Africa.
- b. Another trend referenced by *Mr Gross* was the current high prioritisation of the cold chain industry due to changing dietary patterns. Traditionally, warehouse receipts had not been applied to cold chains frequently, because the goods moved too fast and the paper-based system were not efficient for goods that were only being stored for a couple of days. However, with blockchain and other new technologies, even goods placed in a cooling or horticulture centre for a couple of days could be financed, according to how working capital was moving along the value chain.
- c. *Mr Gross* concluded that new technologies were a reality for everyone and that governments, who did not react to these emerging technology trends in any new warehouse receipts law they adopted, would find their legal implementation effort become swiftly obsolete because the industry would not appreciate that kind of law anymore.
- d. In *Mr Estrella Faria's* view, these developments reported by *Mr Gross* corroborated the importance of model, technology and terminology neutrality as well as the importance for the MLWR project to encourage States to facilitate and enable EWRs.

11. *Participants agreed on the fundamental importance of model, technology and terminology neutrality of the MLWR provisions.*

- a. Reporting on the implementation of the MLETR, *Mr Castellani* noted that business in general had been favouring a comprehensive and integrated approach to data flows related to trade. However, the typical solution for warehouse receipts was an electronic registry, which often resulted in a data silo. A forward-looking MLWR would have to break that silo and embrace a coordinated system that interacted and exchanged information on a regular basis with other important components of the trade ecosystem.
- b. *Mr Dubovec* remarked that many warehouse receipt systems were set up based on a registry model, but that this model did not preclude the deployment of blockchain. The blockchain would be a private system where only authorised users would be able to interact with the system. Therefore, he recommended not discarding blockchain as a possibility for the warehouse receipts registry.
- c. *Mr Lamon Rutten* commented that careful legislative drafting would be key, because the principles were by and large the same for a paper warehouse receipt system, a registry system, and a token system. The MLWR provisions should be formulated in a technology neutral way whenever possible. He recommended starting based on the paper system and either modify every term that was not evidently usable in a registry or token system, or explicitly state what the equivalent in a token system would be. Such an explicit clarification would be important because it might not be clear to policymakers and practitioners, even to bankers, what for instance the equivalent of a transfer was in a token system.
- d. More specifically, concerning the notion of integrity, *Mr Estrella Faria* noted that when the MLWR referred to integrity, it should be clear that an EWR was not a record that was frozen in time but that its information might be updated over time. However, he cautioned that the MLWR should not set out much detail and how the update of

information might take place, as thereby it would already suggest a particular business model.

- e. Specifically concerning the concept of control, *Mr Estrella Faria* stated that the concept would probably not need to be defined in the black letter rules of the MLWR. There might be various ways in which a party might exercise control: For example, there might be a system where a country only had the infrastructure for digital signatures as authentication method, and it might be inclined to require EWRs to be authenticated by electronic signature. Other countries might already deploy an electronic identity management system for authentication. Thus, there might be various models and they should rather be described in subsidiary legislation than in the law.

12. *Several participants emphasised that the MLWR provisions should use general and simple language that was familiar to the industry.*

- a. *Mr Estrella Faria* agreed with the Discussion Paper that much of the terminology used in the draft MLWR was reminiscent of paper receipts, but argued that the MLWR might have to maintain it, even though this might conceptually not be the cleanest solution. Referring to the securities industry, he noted that in many countries securities could only be issued electronically, but the laws still referred to “title”, “issuance”, “content” etc., which was sometimes necessary to make the electronic form acceptable to industries that were locked in their own terminology. In this context, he noted that UNCITRAL was considering a project to develop a new form of negotiable multimodal transport documents and that the terminology and approaches used in both projects should eventually be consistent.
- b. In a similar sense, *Mr Gross*, based on interactions with regulators and ministries concerning warehouse receipt law reforms over the last years, reported that they aimed for a simple way of allowing for technology neutrality, with a preference for using the same language and same structures to have an easy way of bringing in the same new technologies. The MLWR should make it as easy as possible to be fully technology neutral and put EWRs on an equal footing with paper receipts.
- c. Reporting a different approach, *Ms Rodríguez de las Heras Ballell* referred to reforms of securities legislation that had been undertaken a couple of decades ago, when many legislators had incorporated terminological changes in their laws adapted to the new technological model. For example, Spain and Latin American countries, instead of referring to “digital shares” or “electronic shares”, introduced new terminology that translated into “shares represented as annotations in a ledger” or “book entry” (“*Anotaciones en cuenta*”).
- d. In response to *Ms Rodríguez de las Heras Ballell*, *Mr Estrella Faria* referred to these terminological changes to caution about the impact of terminology. The introduction of the notion of “book entry” for securities locked up countries in a securities detention and custody model and a particular structure of an industry. The notion of book entry could not be used, for example, for a fully tokenised security system, since a book entry was an entry in a book that was kept by an intermediary. Hence, terminology could freeze a market into a certain model. He concluded that, in order to leave as much flexibility as possible, the more general the MLWR provisions could be framed the better.
- e. Specifically on draft Article 9 of the MLWR, *Mr Estrella Faria* agreed that the current formulation (“An electronic warehouse receipt that contains the information ...”) was outdated and could be replaced with a more mode-neutral formulation, such as “A warehouse receipt may also be issued in electronic form provided that it ...” and then cross-reference the information that needed to be available in a paper receipt.

13. Lastly, a couple of notions were commented on more specifically.
- a. With regard to the term custodian, *Mr Rutten* cautioned to be careful with definitions, because a warehouse operator was not a custodian in an EWRs system; the warehouse operator was the custodian of the physical goods but not of the digital equivalents. *Mr Dubovec* agreed with Mr Rutten, suggesting not to include details in the MLWR, but only mention that different technological and holding structures might exist in the accompanying guide.
 - b. Concerning the transfer of rights by negotiation or novation, *Mr Estrella Faria* expressed his general reservation with regard to the notion of “negotiation”, which not all legal systems used, and caution as to the concept of “novation”, since it was related to a particular legal context. He explained that “novation” was used in the Bolero Electronic Bill of Lading system in particular, and had been conceptualised specifically to address the limitations posed by English law as the applicable law, i.e. the traditional common law limitations to third party effects of contract and the notion of contract privity.
14. In concluding the workshop, the Secretariat expressed its gratitude to all participants and noted that a set of suggested draft provisions concerning EWRs for the MLWR would be shared with the participants for comments following the workshop, together with a proposal for the specifications needed and not covered by the MLWR that should be included in the guide to enactment to provide guidance to regulators for designing implementing subsidiary legislation.

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ANNEXE 2**MODEL LAW ON WAREHOUSE RECEIPTS
SPECIAL WORKSHOP ON ELECTRONIC WAREHOUSE RECEIPTS
26 JANUARY 2022****DISCUSSION PAPER****INTRODUCTION**

1. This paper discusses options and possible limitations in addressing technology-related aspects in the Model Law on Warehouse Receipts (MLWR). More precisely, it aims to identify what provisions the MLWR could propose to constitute an enabling legal framework for electronic warehouse receipts (EWRs). At the same time, these provisions should reflect current practices, align with approaches adopted in relevant existing and forthcoming international legal instruments, but also foster future developments whether in practice or technology.

2. The paper presents the draft MLWR provisions that might benefit from revision or simply reconsideration in order to draft an EWR-enabling Model Law. These changes could achieve a sufficient degree of harmonisation with the existing legal and practical frameworks for EWRs, and they might also establish an innovative and flexible regime for future implementation in a variety of jurisdictions. Given these recommendations, the drafting of new provisions, for further discussion, or the amendment of current draft provisions in the MLWR are aimed to formulate rules that provide a sound legal framework for EWRs, reflective of the practices in the industry and consistent with approaches adopted in the relevant international instruments.

3. Furthermore, the paper includes an Annex which maps relevant international instruments and their approach to integrating electronic aspects that might be relevant for EWRs. The Annex also describes the approach taken by the in-progress UNIDROIT Project on Digital Assets and Private Law.

4. The following sections of the discussion paper were prepared by Ms Teresa Rodriguez De Las Heras Ballell, Associate Professor of Commercial Law, Universidad Carlos III Madrid, and the Annex provided by the Secretariat.

I. IDENTIFICATION OF PROVISIONS NEEDED TO MAKE THE MLWR A PRACTICAL, STANDALONE INSTRUMENT ALSO FOR EWRS

5. In deciding what aspects the MLWR should govern to create an enabling legal framework for EWRs, both reformed and unreformed legal systems have to be taken into consideration as potential addressees. The category of unreformed legal systems comprises those countries that have neither adopted domestic rules inspired by the principles of technology neutrality and functional equivalence,² that may be relevant for WRs, nor incorporated the UNCITRAL Model Law on Electronic Transferable Records (MLETR) into the national legal system. Such countries may need to find the relevant provisions to implement a fully operational enabling legal framework for EWRs in the MLWR. Reformed countries may decide not to implement those provisions if their existing domestic legal system already provides for sufficient rules to achieve a functionally equivalent result.

² Incorporating, in particular, the UNCITRAL Model Laws on Electronic Commerce (MLEC), on Electronic Signatures (MLES), or ratifying the UN Convention on the Use of Electronic Communications in International Contracts (CEC).

6. It should be noted that the creation of an enabling framework for the issuance of EWRs also depends on regulatory aspects that aim to facilitate the use and implementation of technology-related elements that are relevant for an efficient EWR system (e.g. authorisation of service providers). These regulatory aspects are, however, beyond the scope of the MLWR. Nonetheless, the close connection between private-law aspects covered by the MLWR and regulation is to be highlighted.

7. The adaptable nature of a Model Law provides sufficient flexibility for countries to implement all the provisions they need into domestic legislation or to disregard provisions that embody principles and/or rules that are already incorporated into their domestic legal system. In that regard, a comprehensive MLWR, even if it mirrors certain provisions enshrined in other international texts, may play a facilitating role for countries that require an integral model for EWRs.

8. If a country already has a framework for EWRs, the implementation of the MLWR should ensure that the prior interests are protected. In other words, if a person has already satisfied the requirements for acquiring rights to an EWR, as defined under the existing law, she would be protected post-adoption of the MLWR. These countries may decide to add additional parameters to enable the issuance of EWRs through new technology, which the existing standards might not support.

9. Should rules on EWRs be included in the MLWR, contradictions with or deviations from the general principles and rules underpinning the relevant UNCITRAL instruments (see Annex, section I) are not advisable, unless a sound reason to depart from those is convincingly provided. Thus, the discussion in this paper has a particular focus on the question of whether a mere transcription of existing provisions on control would suffice or if it would be recommendable to provide further specification to enable the issuance and transfer of EWRs.

10. Based on the above, a general referral to the principles of functional equivalence and technology neutrality does not seem to be an optimal strategy. On this assumption, the discussion turns towards how specific the rules should be and how special rules on EWRs should be compared to the existing rules on ETRs and/or the principles formulated by the current UNIDROIT project on Digital Assets. The MLWR may provide for rules that are sufficiently specific to be useful in practice, and reflective of the practices in this industry, without compromising the medium-neutral approach.

11. The Model Law on Warehouse Receipts Working Group unanimously supports the medium-neutral approach in the MLWR. A differentiated legal treatment between paper-based WRs and electronic WRs on the simple grounds of the applied technology is not desirable. Nonetheless, the variety of technological solutions to be adopted for the digital issuance, transfer, or encumbrance of EWRs can lead to different technological models that might have relevant legal implications. The key issue is to decide then whether the MLWR should also follow a technological-neutral approach or if, on the contrary, specific rules are needed to facilitate the development and deployment of different technological models.

II. WHICH MLWR PROVISIONS NEED TO BE ADAPTED TO ENABLE EWRs

1. Scope, definitions, and terminology: towards an EWR-oriented Model Law

12. The aim of the MLWR is to provide for a modern substantive regime for WRs and create an enabling legal framework for EWRs. An enabling legal framework can be devised by formulating positive enabling provisions to cover current models and future ones on the one hand, or by avoiding model-specific provisions that might raise obstacles for the introduction of new models in the future on the other. The latter approach should be relied upon to prevent legal obsolescence and innovation stifling and definitions as well as substantive rules should be revisited to this end.

13. In drafting the main provisions delimiting the scope, and defining terms for the purposes of the MLWR, the ultimate aim to create an EWR-enabling legal framework demands to consider the terminology used in the text carefully. A classical approach may simply lead to draft the provisions in a neutral, but paper-inspired, manner (document, issuance, contain information, delivery, etc.) and rely on the application of the functional-equivalence and technology-neutrality principles, whereas a more innovative approach suggests that the entire text might be drafted to accommodate current and future technological models for EWRs. Under the former approach the MLWR may preserve certain paper-based determinants that delay an innovative development of EWRs, whereas the latter approach would facilitate the unleashing of the full potential and possibilities of technology.

14. Should the WR be defined as a document (“issued and signed”) for the purposes of the MLWR, the application of the functional equivalence principles can easily “read” these rules as applicable to electronic documents duly signed with electronic signatures. Nonetheless, this drafting approach might reveal that the MLWR is based on a paper-based model and merely acknowledges the possibility of using an electronic/digital form. An annotation in a centralised or distributed registry and/or the creation of a digital asset (token) can be defined as a “document” in electronic form provided the clarification is stated in the MLWR or simply if a functional-equivalence interpretation is adopted. Nevertheless it is vital to rethink the bounds of the scope and the definitions not only in a medium-neutral way, but also to accommodate existing and future technological models to issue and transfer EWRs. Parties may find the fact that an annotation in a register or in a blockchain-like system is clearly a “document” less obvious, or might even hesitate to identify when issuance takes place if there is simple a registration/notice. More specific definitions embracing market practices and sensitive to technological advancements may provide certainty in transactions and help parties to develop innovative yet predictable models. The effort to presume, and interpret that paper-based concepts do also enable a variety of digital formulae might be discouraging for market players.

15. In addition, current draft Article 7 MLWR is not included in Chapter I, where general provisions, definitions, and scope-delimiting provisions are contained, but in Chapter II on the issuance of WRs. That location reveals that the MLWR is medium-neutral but might not provide an effective signal that the MLWR is also devised as a genuinely model/structure-agnostic regime. Parties may not find sufficient certainty and clarity in this medium-neutral provision to design and implement register-based models, platforms, or token-based schemes for the issuance and transfer of EWRs.

16. Three options can be considered:

(i) First, redrafting the general provisions and definitions to use terminology that frees the MLWR from paper-based considerations (electronic record). Insofar as one of the models under which EWRs can be issued and transferred is token-based, as may be observed among the systems operating in the market, the definition of ‘token’ in other instruments and initiatives will be of interest. In particular, the terminology and the definitions proposed in the UNIDROIT project on Digital Assets to define a digital asset should be taken into close consideration. In certain technological models operating in the market, EWRs can be deemed digital assets and be issued and circulated like digital assets.

(ii) Second, relocating Article 7 in Chapter I to send a clear signal to the market of the medium-neutral approach.

(iii) Third, going beyond mere medium neutrality and specifying in a general provision the different models for creating EWRs (as described below): if the EWRs operates as entries in a centralised ledger, as registered information in a distributed ledger, as tokens or digital assets created and transferred in open systems or in a specific platform, etc.

17. At present, primary technological models operating in the market belong to two main categories: models based on registry-based schemes or models operating as a token-based system. Various sub-models are available within each category, be they single, centralised or multiple registries, general registries or sector-specific, public or private registers, etc. Besides, it must be noted that in many jurisdictions (all African EWR software solutions) EWR models for issuance, transfer or encumbrance are closely integrated to or interfacing with commodity exchange-trading and clearing platforms.

18. Both categories of models free WRs from the paper medium and are data-based. But there are differences. Whereas registry-based models replace the “actions of issuance, transfer, circulation” of the WR by registrations in a (single or multiple) centralised register, token-based models might to a certain extent reproduce the “circulation” of conventional paper-based WRs under the new parameters of exclusive access or control. Even if these two models are the ones currently in operation, it cannot be disregarded that technological progress and business evolution can trigger the emergence and introduction of new models in the near future. Therefore, an effective enabling formulae, such as the ones suggested above, has to be discussed and considered to ensure that the envisaged legal regime provides certainty for current models, assists parties and other actors to design law-compliant models, and is conducive to any future development in technological models for EWRs.

2. Functional Equivalence of EWRs – Draft MLWR Article 9

19. Article 9 in the current draft MLWR is perfectly consistent with international standards as enshrined in the UNCITRAL texts, in expressing the principle of functional equivalence in general (“shall not be denied legal effect, validity or enforceability”, Article 5 MLEC) as well as in specifying the requirements of identification, control, and integrity literally following the MLETR (Article 10).

20. Should the MLWR aspire to create a favourable legal framework for EWRs and accommodate innovative models and practices more convincingly, a more straightforward and positive message might be advisable. The formula of non-discrimination on the sole grounds of the applied technology might be interpreted as giving priority to paper-based WRs as the benchmark and treating EWRs as a mere alternative. In an increasingly digital environment, such a statement might be seen as too cautious and maybe even deterring. Parties and intermediaries may find very limited guidance in this general provision to devise and develop innovative models for EWRs with sufficient certainty. An affirmative message might be advisable: “a warehouse receipt is valid and enforceable if it is issued/created...”.

21. Additionally, it should be thoroughly considered whether the requirements currently included in Article 9, a tribute to the MLETR, should be further elaborated to accommodate market practices and/or provide better guidance for innovators and parties. Besides, considering the diversity of technological models for EWRs, whether these basic requirements accommodate all modalities or should differ and adapt to register-based models, distributed models, or token-based models should be discussed. The identification of the electronic record (letter a) as an electronic transferable record may be different in a registry-based model than in a token-based model. Or the capability of being subject to control may require concrete specifications for token-based models.

3. Content of EWRs – Draft MLWR Article 8

22. Article 8 of the draft MLWR lists information/terms that the WR must and may contain or include. EWRs are data-based units in the different technological models and thus may contain the information that the law prescribes or the parties agree on. Nonetheless, in an effort to draft a modern MLWR that is not too weighted by paper determinants, two issues need to be considered.

23. First, the idea that the information is “contained” in a single “document” or “electronic record” might not reflect accurately a register-based model where the information is noted in subsequent annotations, but, more importantly, the model where relevant information might be stored in different digital locations (i.e. in a distributed ledger or accessible from different sources). Even if access to the entire electronic record is possible, despite being in a distributed ledger, it is interesting at least to reflect on the differences between a traditional model based on information contained in a single document, information registered in a central registry as a single electronic record, and information stored in a distributed ledger. Acknowledging the peculiarities of the different models will allow a better understanding and assessment of possible legal implications, if any.

24. Second, the possibility of dynamically and automatically updating the information (quality, location, other terms) in EWRs using technology. These changes, if authorised (with a prior general approval of the updating mechanism or with a specific consent for each change), would not contradict the requirement of integrity as per Article 9.2 of the draft MLWR.

4. Transfer of EWRs – Draft MLWR Article 11.3

25. Current Article 11.3 of the draft MLWR encapsulates the functional-equivalence solution of the transfer of control for negotiable EWRs. No further specifications are provided for implementing the transfer of control in practice.

26. The different technological models challenge a simple and univocal concept of control. The control over annotations in a centralised registry or in a distributed ledger system differ, as well as the control over a digital asset. A cryptic reference to transfer of control might fail to provide valuable solutions in all technological models.

27. A more elaborate description of control and detailed specification of change of control in EWRs, along the lines that the UNIDROIT Project on Digital Assets is tracing, are recommendable (see Annex, section II).

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PRINCIPLE [X.1D]

Definition of ‘control’

(1) A person has ‘control’ of a digital asset if:

(a) subject to paragraphs 2 and 3, the digital asset or the relevant protocol or system confers on the person:

(i) the exclusive ability to change the control of the digital asset to another person (a change of control);

(ii) the exclusive ability to prevent others from obtaining substantially all of the benefit from the digital asset; and

(iii) the ability to obtain substantially all the benefit from the digital asset; and

(b) the digital asset or its associated records allows the person to identify itself as having the abilities mentioned in paragraph (1)(a).

(2) A change of control includes replacing, modifying, destroying, cancelling, or eliminating a digital asset and the resulting and corresponding derivative creation of a new digital asset (a derivative digital asset) and subjecting the derivative digital asset to the control of another person.

(3) An ability for purposes of paragraph 1(a) need not be exclusive if and to the extent that:

(a) the digital asset or the relevant protocol or system limits the use of or is programmed to make a change of control of the digital asset; or

(b) the person in control has agreed or consented to or acquiesced in sharing the ability with one or more other persons.

(4) In any proceeding in which a person's control of a digital asset is at issue, it is sufficient for that person to demonstrate that the identification requirement in paragraph (1)(b) is satisfied as to the abilities specified in paragraph 1(a)[(i) and (ii)]. It is not necessary for the person to prove the exclusivity of any ability specified in paragraph 1(a), i.e., that no person other than the person in control and those permitted by paragraph (3) has that ability.

(5) The identification mentioned in paragraph (1)(b) may be by a reasonable means such as (but not limited to) an identifying number, a cryptographic key, an office, or an account number, even if the identification does not indicate the name or identity of the person to be identified.

28. The draft proposal put forward by the Working Group on Digital Assets addresses key elements that the MLWR may also incorporate to provide certainty and facilitate the development of innovative models for EWRs:

- (i) First, the conceptualisation of control as a factual matter and not as a legal concept.
- (ii) Second, the use of the neutral expression "change of control" instead of transfer of control that can have legal connotations. Additionally, a term that establishes when a person acquires rights is naturally needed as well and it should be incorporated in the text where needed.
- (iii) Third, the use of "ability" instead of "power" as a factual standard.
- (iv) Fourth, the relaxation of the exclusivity requirement to accommodate the protocols or systems used or the multi-signature arrangements, taking into consideration whether these formula fit into the common warehousing practices.

29. In order to adapt the draft proposal of 'control' of the Working Group on Digital Assets to the realities of WRs, some questions can be put forward for discussion.

30. As per para. 2 of Principle X.1D above,

(2) A change of control includes replacing, modifying, destroying, cancelling, or eliminating a digital asset and the resulting and corresponding derivative creation of a new digital asset (a derivative digital asset) and subjecting the derivative digital asset to the control of another person.

Question:

Would this be necessary as it implies a transfer by novation rather than negotiation which is how EWRs are transferred?

31. Para. 3 of Principle X.1D above, 'control' may not need to be based on 'exclusive' ability, as defined in para. 1(a) in certain circumstances.

(3) An ability for purposes of paragraph 1(a) need not be exclusive if and to the extent that:

(a) the digital asset or the relevant protocol or system limits the use of or is programmed to make a change of control of the digital asset.

Question:

Would this situation be reasonable and advisable in an EWR context? Should parties accept to negotiate in a system enabling such a possibility?

32. Hence, the proposal of the Working Group on Digital Asset reveals that a more sophisticated description of control in current technological models is needed.

III. PROPOSED SPECIFIC PROVISIONS FOR EWRS TO BE CONSIDERED IN THE MLWR

33. No specific drafting provisions are proposed, but drafting options are put forward below on the basis of the considerations and comments expounded above.

5. Scope

34. It would be recommendable to include a clear statement of the medium-neutral approach in the general and scope-delimiting provisions, instead of defining a WR as a document (paper-based approach) and subsequently in Article 7 providing for a simple non-discrimination principle. The following formulation may be considered:

An EWR is a document/electronic record/digital assets that meets the legal requirements.

35. Besides, the negative formulation of the non-discrimination principle (“shall not be denied legal effect, validity or enforceability”, Article 5 MLEC) might be reworded in an affirmative and straightforward statement recognising validity and enforceability.

6. Definitions

36. Beyond a mere recognition of medium neutrality, the promotion of EWR-models requires more than acknowledging the equivalence of paper and electronic form. The aim would be to draft a model-agnostic MLWR that accommodates current and future technological models for EWRS. Including a definition of electronic records and a definition of digital assets might be an effective way to cover all technological models (centralised registries, distributed systems, token-based models, platforms). Adopting the definition of digital assets of the UNIDROIT Project on Digital Assets would be advisable (see Annex, section II), as there is no reason to depart from that definition in the context of WRs.

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PRINCIPLE [X.1C]

Definition of ‘digital asset’

‘Digital asset’ means an electronic record which is capable of being subject to control.

PRINCIPLE [X.1B]

Definition of ‘electronic record’

‘Electronic record’ means information which is (i) stored in an electronic or other intangible medium and (ii) capable of being retrieved.

7. Terminology

37. A general revision of the draft provisions to avoid or limit the use of terms that convey an excessive paper-dependent approach might send an encouraging signal to the market and parties to innovate on law-compliant EWR models.

8. Loss of EWRS

38. Article 10 of the draft MLWR may be revised to ensure that the wording is not paper-dependent and can be smoothly applied to EWRS: loss, destruction, replacement – loss of control, irretrievability, lack of interoperability, etc. Besides, one must carefully consider whether loss, in the

case of an EWR, is applicable solely to the EWR or should be extended to the information relevant for control the digital asset/electronic record, given the similar consequences.

9. Transfer of EWRs

39. It might be advisable to provide a more specific treatment of register-based models for transfer purposes insofar as they cannot operate for bearer WRs. Distinction between negotiable and non-negotiable WRs and their effects would be advisable.

10. Control of EWRs

40. A description of control with a detailed specification of change of control in EWRs, along the lines that the UNIDROIT Project on Digital Assets is tracing, is recommendable.

11. Custody of EWRs

41. It might be interesting to analyse the need for custody and the role of custodians in EWRs. The role of the warehouse operator, beyond the custody of the stored goods, might be discussed, as a custodian of EWRs when issued in the form of digital assets.

ANNEX**ANALYSIS OF INTERNATIONAL INSTRUMENTS RELEVANT FOR EWRS****I. ANALYSIS OF EXISTING INTERNATIONAL INSTRUMENTS**

1. This section identifies the approaches adopted in existing international instruments as they pertain to electronic aspects, which might be relevant for EWRS. The section considers the following international instruments: the 2017 UNCITRAL Model Law on Electronic Transferable Records (MLETR) and the 2008 UN Convention on Contracts for the International Carriage of Goods Wholly or Partly by Sea, commonly referred to as the Rotterdam Rules. The MLETR has (at least partly) been adopted by 5 jurisdictions.³ The Rotterdam Rules have been signed by 25 states and ratified by 5 states.⁴

1. UNCITRAL Model Law on Electronic Transferable Records

2. The purpose of the Model Law on Electronic Transferable Records (MLETR)⁵ is to enable the use of electronic transferable records both domestically and across borders. It applies to electronic transferable records that are functionally equivalent to transferable documents or instruments. For the purposes of the MLETR, transferable documents or instruments are understood as paper-based documents or instruments that entitle the holder to claim performance of the obligation indicated therein and that allow the transfer of the claim to that performance by transferring possession of the document or instrument. Transferable documents or instruments typically include warehouse receipts.

3. Three provisions of the MLETR appear to be most relevant for electronic aspects of warehouse receipts: the definition of an “electronic transferable record” (Art. 2) and the provision on functional equivalence including the key concept of “control” (Arts. 10 and 11). In order to better understand the MLETR’s concept of “control”, a brief look at the concept of “reliability” as set out in Art. 12 will be helpful.

(a) Definitions

4. Article 2 of the MLETR sets out core definitions. It defines “electronic transferable record” as “an electronic record that complies with the requirements of article 10”.

5. An “electronic record”, in turn, is defined as “information generated, communicated, received or stored by electronic means, including, where appropriate, all information logically associated with or otherwise linked together so as to become part of the record, whether generated contemporaneously or not”.

³ Cf. https://uncitral.un.org/en/texts/ecommerce/modellaw/electronic_transferable_records/status (last accessed 16 November 2021). These are Bahrain, Belize, Kiribati, Singapore and the Abu Dhabi Global Market. For a general overview of the status of UNCITRAL instruments, see <https://uncitral.un.org/sites/uncitral.un.org/files/media-documents/uncitral/en/overview-status-table.pdf> (last accessed 16 November 2021).

⁴ Cf. https://uncitral.un.org/en/texts/transportgoods/conventions/rotterdam_rules/status (last accessed 16 November 2021). The 25 states are Armenia, Cameroon, Congo, Democratic Republic of the Congo, Denmark, France, Gabon, Ghana, Greece, Guinea, Guinea-Bissau, Luxembourg, Madagascar, Mali, the Netherlands, Niger, Nigeria, Norway, Poland, Senegal, Spain, Sweden, Switzerland, Togo, and the United States. The five states that ratified the Rules are Benin, Cameroon, Congo, Spain, and Togo. According to Art. X of the Rules, 20 ratifications are required for them to enter into force.

⁵ UNCITRAL Model Law on Electronic Transferable Records (2007), available at https://uncitral.un.org/sites/uncitral.un.org/files/media-documents/uncitral/en/mletr_ebook_e.pdf (last accessed 16 November 2021).

6. Article 10, Transferable documents or instruments, sets out the requirements that an electronic record must comply with in order to be considered equivalent in cases where the law requires a (paper-based) transferable document or instrument:

1. *Where the law requires a transferable document or instrument, that requirement is met by an electronic record if:*

(a) *The electronic record contains the information that would be required to be contained in a transferable document or instrument; and*

(b) *A reliable method is used:*

(i) *To identify that electronic record as the electronic transferable record;*

(ii) *To render that electronic record capable of being subject to control from its creation until it ceases to have any effect or validity; and*

(iii) *To retain the integrity of that electronic record.*

2. *The criterion for assessing integrity shall be whether information contained in the electronic transferable record, including any authorized change that arises from its creation until it ceases to have any effect or validity, has remained complete and unaltered apart from any change which arises in the normal course of communication, storage and display.*

7. While paragraph 1(a) makes clear that the electronic record must be identical in content to the traditional transferable document or instrument, paragraph 1(b) relates to questions of secure use of electronic records. Here, general key concepts for the use of electronic transferable records are addressed: the necessity of a “reliable method” – which gets defined more precisely in Article 12 – for ensuring “control” of the record – addressed in Article 11 – and for ensuring the “integrity” of the electronic record. “Integrity”, as defined by paragraph 2 of Article 10 appears to be another safeguard against doubts about the legitimacy of an electronic record.

(b) Control

8. Article 11, Control, introduces the concept of control as a functional equivalent for possession of a traditional paper-based transferable document or instrument:

1. *Where the law requires or permits the possession of a transferable document or instrument, that requirement is met with respect to an electronic transferable record if a reliable method is used:*

(a) *To establish exclusive control of that electronic transferable record by a person; and*

(b) *To identify that person as the person in control.*

2. *Where the law requires or permits transfer of possession of a transferable document or instrument, that requirement is met with respect to an electronic transferable record through the transfer of control over the electronic transferable record.*

9. The MLETR does not provide a definition for the term “control”. The reasons for this are explained in the Explanatory Note to the MLETR:⁶ “The notion of “control” [...] is not defined in the Model Law since it is the functional equivalent of the notion of “possession”, which, in turn, may vary in each jurisdiction”. As the Explanatory Note goes on to explain, the drafters of the MLETR wanted to avoid interfering with national concepts of possession and, therefore, decided to leave it to the

⁶ Explanatory Note to the UNCITRAL Model Law on Electronic Transferable Records, paragraphs 106-109, available at https://uncitral.un.org/sites/uncitral.un.org/files/media-documents/uncitral/en/mletr_ebook_e.pdf (last accessed 16 November 2021).

national legislators to flesh out the notion of “control” as its functional equivalent to fit their respective jurisdictions.

10. Another noteworthy point here is that the provision uses the concept of “control” as well as that of “exclusive control”. The Explanatory Note explains this as follows: “Paragraph 1 (a) refers to “exclusive” control for reasons of clarity, since the notion of “control”, similarly to that of “possession”, implies exclusivity in its exercise. Yet, control, like possession, could be exercised concurrently by more than one person.”⁷ The concept of exclusivity does not receive a definition or deeper explanation. Moreover, while the Explanatory Note explains that paragraph 2 of Article 11 is meant to refer to the transfer of exclusive control,⁸ the wording of the paragraph does not reflect that.

(c) Reliability Standard

11. While not offering a definition of “control”, the MLETR offers some guidance as to the methods with which control ought to be established. This General reliability standard gets addressed in Article 12:

For the purposes of articles 9, 10, 11, 13, 16, 17 and 18, the method referred to shall be:

(a) As reliable as appropriate for the fulfilment of the function for which the method is being used, in the light of all relevant circumstances, which may include:

- (i) Any operational rules relevant to the assessment of reliability;*
- (ii) The assurance of data integrity;*
- (iii) The ability to prevent unauthorized access to and use of the system;*
- (iv) The security of hardware and software;*
- (v) The regularity and extent of audit by an independent body;*
- (vi) The existence of a declaration by a supervisory body, an accreditation body or a voluntary scheme regarding the reliability of the method;*
- (vii) Any applicable industry standard; or*

(b) Proven in fact to have fulfilled the function by itself or together with further evidence.

12. As the wording suggests and as the Explanatory Note⁹ confirms, the list in lit. (a) is not exhaustive but rather leaves room for other criteria to be applied to determine reliability. This is extended to solutions that have proven to work reliably in practice, as lit. (b) expressly states.

13. Notably, while there is no explicit reference to party autonomy in determining the reliability criteria included in the wording of Article 12, the Explanatory Note makes clear that the parties are in fact deemed not free to determine for themselves what they consider reliable; their party autonomy is seen as limited to agreeing on liability, not reliability.¹⁰

14. Note also that according to the wording of Article 11, “control” requires meeting the reliability standards set out in Article 12. The transfer of control, referred to in paragraph 2 of Article 11, makes no reference to this reliability standard. More generally, there appears to be no clear explanation of how a transfer of control is to be affected under the MLETR.

⁷ Ibid., paragraph 111.

⁸ Ibid., paragraph 119.

⁹ Cf. Ibid., paragraphs 122 – 126.

¹⁰ Cf. Ibid., paragraphs 122, 138 – 139.

2. Rotterdam Rules

15. The Rotterdam Rules aim to establish a uniform and modern legal regime governing the rights and obligations of shippers, carriers and consignees under a contract for door-to-door carriage that includes an international sea leg, by providing a legal framework that takes into account many technological and commercial developments that have occurred in maritime transport, including the development of electronic transport documents.¹¹ They do not immediately deal with warehouse receipts, but provide a framework for the transition from traditional paper-based trading documents to digital versions of these documents.

(a) Definitions

16. The Rotterdam Rules offer a much larger number of definitions than the MLETR.

17. In their Article 1, the Rotterdam Rule provide a long list of definitions. Among them are concepts with relevance for the questions at hand in connection with the MLWR:

10. "Holder" means:

[...]

(b) *The person to which a negotiable electronic transport record has been issued or transferred in accordance with the procedures referred to in article 9, paragraph 1.*

18. "Electronic transport record" means information in one or more messages issued by electronic communication under a contract of carriage by a carrier, including information logically associated with the electronic transport record by attachments or otherwise linked to the electronic transport record contemporaneously with or subsequent to its issue by the carrier, so as to become part of the electronic transport record, that:

(a) *Evidences the carrier's or a performing party's receipt of goods under a contract of carriage; and*

(b) *Evidences or contains a contract of carriage.*

19. "Negotiable transport record" means an electronic transport record:

[...]

(b) *The use of which meets the requirements of article 9, paragraph 1.*

21. *The "issuance" of a negotiable electronic transport record means the issuance of the record in accordance with procedures that ensure that the record is subject to exclusive control from its creation until it ceases to have any effect or validity.*

22. *The "transfer" of a negotiable electronic transport record means the transfer of exclusive control over the record.*

18. These definitions will be addressed in the context of other concepts in the following paragraphs.

(b) Functional equivalence

19. Chapter 3 specifically deals with electronic transport records. In its Article 8, it addresses the use and effect of electronic transport records as follows:

¹¹ Cited from https://uncitral.un.org/en/texts/transportgoods/conventions/rotterdam_rules (last accessed 16 November 2021).

Subject to the requirements set out in this Convention:

Anything that is to be in or on a transport document under this Convention may be recorded in an electronic transport record, provided the issuance and subsequent use of an electronic transport record is with the consent of the carrier and the shipper; and

The issuance, exclusive control, or transfer of an electronic transport record has the same effect as the issuance, possession, or transfer of a transport document.

20. This article thereby establishes the functional equivalence of an electronic transport record with a paper-based transport under two conditions. First, the issuance and use of the electronic transport record takes place with the consent of the carrier and the shipper. And second, the electronic transport record must be functionally equivalent with the paper-based record. Crucially, this latter condition also entails the notion that “exclusive control” of an electronic transport record is to be the equivalent of “possession” in a paper-based transport record.

(c) Procedures for use of electronic records

21. Article 9, Procedures for the use of negotiable electronic transport records, provides a framework of how negotiable electronic transport records can be used in practice. It reads:

The use of a negotiable electronic transport record shall be subject to procedures that provide for:

- (a) The method for the issuance and the transfer of that record to an intended holder;*
- (b) An assurance that the negotiable electronic transport record retains its integrity;*
- (c) The manner in which the holder is able to demonstrate that it is the holder; and*
- (d) The manner of providing confirmation that delivery to the holder has been effected, or that, pursuant to articles 10, paragraphs 2, or 47, subparagraphs 1 (a) (ii) and (c), the electronic transport record has ceased to have any effect or validity.*

22. The procedures in paragraph 1 of this article shall be referred to in the contract particulars and be readily ascertainable.

23. The provision leaves room for a variety of ways of implementing these requirements. The procedures for issuance and transfer are not determined more definitively, rather they are left open to be determined by the respective jurisdiction and, as paragraph 2 makes clear, by the parties.

24. Crucially, the concept of “integrity”, which is known from the MELTR, gets introduced in lit. (b) here. Unlike the MLETR, however, the Rotterdam Rules do not offer a definition for “integrity”. Moreover, lit. (c) refers to the “holder” of the record, a term which (as mentioned above) is defined in Article 1, paragraph 10 (b) as the person to which a negotiable electronic transport record has been issued or transferred in accordance with the procedures referred to in article 9, paragraph 1. This notion of a “holder” appears to do some of the conceptual work that the concept of “control” does in the MLETR. At the same time, the notion of “holder” is not tied to the notion of “exclusive control” used in Article 8 (b) (discussed above).

(d) Controlling party and control

25. Nevertheless, the concept of control (without any qualifications) appears, too, albeit in different form. Chapter 10 deals with rights of the controlling party.

26. The “controlling party” here means

the person that pursuant to article 51 is entitled to exercise the right of control,

which in turn is defined as

the right under the contract of carriage to give the carrier instructions in respect of the goods in accordance with chapter 10.¹²

27. This notion of “control” is entirely different from the notion of “control” as set out in the MLETR. While the latter uses “control” as the notion representing the functional equivalence of electronic and paper-based transferable records, the notion of “control” used in the Rotterdam Rules only relates to control of the goods represented by the documents in question.

28. Article 51, Identity of the controlling party and transfer of the right of control, however, sheds light on the connection between this notion of control and electronic transport records:

[...]

4. *When a negotiable electronic transport record is issued:*

(a) *The holder is the controlling party;*

(b) *The holder may transfer the right of control to another person by transferring the negotiable electronic transport record in accordance with the procedures referred to in article 9, paragraph 1; and*

(c) *In order to exercise the right of control, the holder shall demonstrate, in accordance with the procedures referred to in article 9, paragraph 1, that it is the holder.*

29. This makes clear that while control of the goods can be transferred by transferring the negotiable electronic transport record, the conceptual work is, again, done by the procedures set out in article 9, paragraph 1 (discussed above) as well as the concept of “holder”, not the notion of “control”.

30. This is supported by the following Chapter 11, Transfer of rights, whose Article 57 stipulates in its paragraph 2:

When a negotiable electronic transport record is issued, its holder may transfer the rights incorporated in it, whether it be made out to order or to the order of a named person, by transferring the electronic transport record in accordance with the procedures referred to in article 9, paragraph 1.

3. Comparative analysis

31. As paragraph 83 of the Explanatory Note to the MLETR makes clear, “Article 10 aims at preventing the possibility of the existence of multiple claims to perform the same obligation by combining two approaches, i.e. ‘singularity’ and ‘control’”. While “singularity” is presented as the concept used to identify the electronic record that is functionally equivalent to a transferable document, “control” is the concept which is meant to identify the person who has a position comparable to “possession” in physical transferable documents.

32. These notions remain rather abstract in the MLETR. Neither Article 11, Control, nor any other provision in the Model Law offer a definition for “control”. This issue is addressed in the Explanatory Note to the MLETR (p. 42/3): Because “control” is supposed to be a functional equivalent of “possession” which in turn has widely different definitions in different jurisdictions, just like “possession” the notion of “control” should not receive a definition in the Model Law.

¹² See Chapter 1, Article 1, paragraphs 12 and 13 of the Rotterdam Rules.

33. Similarly, there is no definition of “singularity”. Indeed, this term does not get used in the body of the Model Law itself.

34. Finally, the Model Law does not contain a definition of “transfer” of an electronic transferable record. Rather, Article 11, paragraph 2 merely equates the transfer of control of the electronic transferable document with the transfer of possession of a transferable document. The specifics are left to the respective national law.

35. The Rotterdam Rules use “control” in two contexts: On the one hand, they refer to the “Right of control” of the goods, which means the right under the contract of carriage to give the carrier instructions in respect of the goods in accordance with Chapter 10 (cf. Article 1, paragraph 12). On the other hand, they refer to “exclusive control” in the context of the transfer of negotiable electronic transport records. The notion of “exclusive control” does not receive a formal definition. It appears three times in the body of the instrument: In Article 1, paragraphs 21 and 22, and in Article 8 (b). Article 8 (b) makes clear that “exclusive control” is to be understood as a functional equivalent of possession: “The issuance, exclusive control, or transfer of an electronic transport record has the same effect as the issuance, possession, or transfer of a transport document”.

36. The lack of a definition is a parallel to the lack of a definition of the term “control” in the MLETR. As opposed to the MLETR, however, the Rotterdam Rules appear to not have an explanatory note shedding light on what the reasoning behind not including a definition or explanation of “exclusive control” might have been. From the consolidated version of the reports of UNCITRAL and its Working Group¹³ it becomes clear that a previous draft version in fact contained a definition of “exclusive control”: “A person has exclusive control of an electronic transport record if the procedure employed under article 6 reliably established that person as the person who has the rights in the negotiable transport record.”¹⁴ This provision, however, did not survive the further drafting procedures.

37. Moreover, the Rotterdam Rules do not tie the concept of “exclusive control” used in Article 8 (b) to the concept of “holder” as defined in Article 1 paragraph 10. This seems problematic as it leaves some uncertainty.

II. UNIDROIT PROJECT ON DIGITAL ASSETS AND PRIVATE LAW

38. The project on Digital Assets and Private Law¹⁵ is – like the Model Law on Warehouse Receipts project – still in its drafting phase. Nevertheless, the current draft version already contains draft definitions and provisions pertaining to the key concepts discussed in this paper.

39. Principle 2 (1) defines an electronic record as

information which is (i) stored in an electronic or other intangible medium and (ii) capable of being retrieved.

40. Principle 2 (2) defines a [Controllable] Digital asset as

an electronic record which is capable of being subject to control.

¹³ Available at: https://uncitral.un.org/sites/uncitral.un.org/files/media-documents/uncitral/en/compilation_of_reports.pdf (last opened 17. November 2021).

¹⁴ Ibid, pages 48, 49, and 118.

¹⁵ For more information on the current status, see <https://www.unidroit.org/work-in-progress/digital-assets-and-private-law/#1622753957479-e442fd67-036d> (last opened 17 November 2021).

41. Here, the notion of “control” reappears in a sense that is reminiscent of the (implied) meaning under the MLETR. Importantly, however, and as opposed to the MLETR, the current draft offers a fully-fledged definition of control in SECTION III: CONTROL, Principles 6 and 7:

Principle 6: Definition of Control

- (1) *A person has ‘control’ of a digital asset if:*
- (a) *subject to paragraphs (2) and (3), the digital asset or the relevant protocol or system confers on that person:*
- (i) *the exclusive ability to change the control of the digital asset to another person (a “change of control”);*
- (ii) *the exclusive ability to prevent others from obtaining substantially all of the benefit from the digital asset; and*
- (iii) *the ability to obtain substantially all the benefit from the digital asset; and*
- (b) *the digital asset or its associated records allows that person to identify itself as having the abilities mentioned in paragraph (1)(a).*
- (2) *A change of control includes the replacement, modification, destruction, cancellation, or elimination of a digital asset and the resulting and corresponding derivative creation of a new digital asset (a “derivative digital asset”) which is subject to the control of another person.*
- (3) *An ability for purposes of paragraph (1)(a) need not be exclusive if and to the extent that:*
- (a) *the digital asset, or the relevant protocol or system, limits the use of, or is programmed to make a change of control of, the digital asset; or*
- (b) *the person in control has agreed, consented to or acquiesced in sharing that ability with one or more other persons.*

Principle 7: Identification of a person in control of a digital asset

- (1) *In any proceeding in which a person’s control of a digital asset is at issue,*
- (a) *it is sufficient for that person to demonstrate that the identification requirement in Principle 6 paragraph (1)(b) is satisfied as to the abilities specified in Principle 6 paragraph (1)(a) [(i) and (ii)];*
- (b) *it is not necessary for the person to prove that no person other than the person in control and those permitted by paragraph (3) has any of the abilities specified in Principle 6 paragraph 1(a).*
- (2) *The identification mentioned in Principle 6 paragraph (1)(b) may be by a reasonable means including (but not limited to) an identifying number, a cryptographic key, an office, or an account number, even if the identification does not indicate the name or identity of the person to be identified.*

42. This definition offers a high degree of specificity, addressing a number of issues that can be expected to typically arise in the context of using electronic digital assets (and EWRs, too):

43. Paragraph 1 of Principle 6 attributes four key elements to the notion of “control”: the exclusive ability to bring about change of control; the exclusive ability to prevent others from having benefits from the controlled digital asset; the ability to have all those benefits from the digital asset; and the ability to prove the first three abilities to others. Another concept is woven into this definition:

the concept of “exclusivity”. Control requires that the person in control is the only one to have certain practical abilities; in general, if others share them, none has control. This is addressed in paragraph 3 of Principle 6 where exceptions and limitations are introduced.

44. Paragraph 2 of Principle 6 considers all forms of change of control, including by destruction or cancellation of the digital asset; this is distinct from the notion of the transfer of a digital asset, which is addressed in Section IV: Transfer.¹⁶ This Section, containing four draft principles does not, however, offer a definition or application-ready provisions for “transfer of digital assets”. Instead, it gives legislative guidance as to what a law governing the transfer of digital assets should entail.

45. The current revised text of Section IV: Transfer, is reproduced below:

Principle 8: Acquisition and Disposition of Digital Assets

(1) (a) *The transfer of a digital asset is the change of a proprietary right from one person to another person.*

(b) *A transfer of a digital asset includes the replacement, modification, destruction, cancellation, or elimination of a digital asset and the resulting and corresponding derivative creation and acquisition of a derivative digital asset.*

Principle 9: Innocent Acquirer Rule

(1) *The law should include an innocent acquirer rule, specifying*

(a) *the requirements for a transferee to qualify as an innocent acquirer of a digital assets or a derivative digital asset and*

(b) *the rights obtained by an innocent acquirer of such an asset.*

(2) *In this principle, the term ‘digital asset’ includes a derivative digital asset.*

(3) *The requirements and rights referred to in paragraph (1) should be equivalent to those found in good faith purchase, finality, and take-free rules).*

(4) *The innocent acquirer rule should provide that*

(a) *an innocent acquirer takes a digital asset free of conflicting proprietary rights (“proprietary claims”);*

(b) *no rights based on a proprietary claim relating to a digital asset may be successfully asserted against an innocent acquirer of that digital asset;*

(c) *Control of a digital asset should be an essential element for qualifying as an innocent acquirer;*

and

(d) *An innocent acquirer may acquire a proprietary right in a digital asset even if control of that digital asset is changed by a person that is acting wrongfully and has no proprietary right in the digital asset.*

(5) *In specifying who falls within the definition of an innocent acquirer, , consideration should be given to (but not limited to) the following:*

¹⁶ Text of Section IV: Transfer (Principle 8: Acquisition and Disposition of Digital Assets; Principle 9: Innocent Acquirer Rule; Principle 10: Shelter Principle; Principle 11: Application of Innocent Acquirer Rules to a Custody Relationship).

- (a) *an acquirer's possible notice or knowledge of any proprietary claim or of the specific proprietary claim at issue;*
 - (b) *in relation to notice, an acquirer's reason to know of a proprietary claim or knowledge of suspicious circumstances and failure to investigate further;*
 - (c) *in relation to knowledge, an acquirer's actual knowledge;*
 - (d) *an acquirer's notice or knowledge that its acquisition [violates the rights of] [is wrongful as to] the holder of a proprietary claim;*
 - (e) *an acquirer's "good faith" (or a similar standard), taking into account the variety of meanings and interpretations under different legal traditions;*
 - (f) *an acquirer's acquisition for value given by the acquirer or received by the transferor;*
 - (g) *applicable tests or standards for the innocent acquisition protection for acquirers of movables and intangibles; and*
 - (h) *the test adopted in the Geneva Securities Convention, Article 18(1), ie, whether:*
an acquirer actually knows or ought to know, at the relevant time, that another person has an interest in securities or intermediated securities and that the credit to the securities account of the acquirer, designating entry or interest granted to the acquirer violates the rights of that other person in relation to its interest.
- (6) *If an innocent acquirer rule provides that qualification as an innocent acquirer requires the absence of notice or knowledge, the law should specify the effect of a transferee's notice or knowledge, including its impact on the claims as to which a transferee does and does not take free.*

Principle 10: Shelter principle

- (1) *The law should provide that an initial transferee from an innocent acquirer and any subsequent transferee should have the same protection as the innocent acquirer from conflicting proprietary rights and the successful assertion of proprietary claims.*

Principle 11: Application of innocent acquirer rules to a custody relationship

The law should provide that a client that acquires a proprietary right in a digital asset through a custody relationship with a custodian

- (a) *takes its right free of conflicting proprietary claims, or*
- (b) *that no rights may be asserted against the client based on a conflicting proprietary claim, or*
- (c) *both (a) and (b),*

subject to substantially the same conditions that apply under the innocent acquirer rule (but without a requirement that the client obtain control over the digital asset).