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Stocktaking of Developments in Dispute Resolution in the Digital Economy

Taxonomy and preliminary findings

Contents

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I. Introduction

A. Background

1. The Commission, at its fifty-third session in 2020, considered a proposal put forward by the Government of Japan that the secretariat should conduct activities (including research and the hosting of expert group meetings, webinars and online consultations) to collect and compile information on the latest trends regarding international dispute resolution (A/CN.9/1037). The proposal noted that the coronavirus disease (COVID-19) pandemic had highlighted the need to improve resilience towards such global crises and to achieve modernization, in particular in that area. It was suggested that there was a need to monitor the changing landscape of dispute resolution, the evolving practices and the development of new forms of dispute resolution. General support was expressed for the secretariat to conduct research and take stock of the wide range of relevant developments, and the Commission requested the secretariat to explore possible means to implement such activities and report back to the Commission at its fifty-fourth session.[1]

2. At its fifty-fourth session in 2021, the Commission considered a report by the secretariat, which contained a summary of the activities undertaken by the secretariat in relation to the stocktaking of developments in dispute resolution in the digital economy and proposals on the way forward drawn from the outcome of those activities (A/CN.9/1064/Add.4). Based on that report, and with the offer by the Government of Japan to contribute the financial resources necessary, the Commission endorsed the implementation of the stocktaking project through which the secretariat would compile, analyse and share relevant information.[2] It was widely felt that the stocktaking would need to take into account the disruptive aspects of digitization, in particular with respect to due process and fairness. The Commission requested the secretariat to organize a colloquium during the seventy-fifth session of Working Group II to further explore the relevant legal issues and to identify the scope and nature of possible legislative work.[3]

3. At its fifty-fifth session in 2022, the Commission was informed that a colloquium had been held during the seventy-fifth session of Working Group II (New York, 28 March–1 April 2022) to discuss possible future work on dispute settlement and that a report of the colloquium was prepared for its consideration (A/CN.9/1091). It was also informed that the Government of Japan contributed the funds necessary for the implementation of the stocktaking project. In its discussion, it was mentioned that the work in that area should be coordinated with the work of Working Group IV and that the approach taken by the secretariat by way of a legal taxonomy on emerging technologies and their application in an exploratory phase that led to the current work of that Working Group could be usefully followed. It was also mentioned that the stocktaking project should focus on ways to preserve the fundamental principles of dispute resolution, including due process and fairness, as well as ways to enhance the efficiency of the proceedings, both of which would build confidence of the users.[4] After discussion, the Commission requested the secretariat to continue to implement the stocktaking project on dispute resolution in the digital economy and to report on the preliminary findings at the next session.[5]

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[1] *Official Records of the General Assembly, Seventy-fifth Session, Supplement No. 17* (A/75/17), *Part two, para. 16(h).*

[2] *Official Records of the General Assembly, Seventy-sixth Session, Supplement No. 17* (A/76/17), para. 232.

[3] Ibid., para. 233.

[4] *Official Records of the General Assembly, Seventy-seventh Session, Supplement No. 17* (A/77/17), para. 221.

[5] Ibid., para. 222.

B. Methodology

4. This note contains a taxonomy of digital technologies and technology-enabled services, seeking to identify and broadly categorize the areas of dispute resolution that are directly impacted by new technologies and technological developments. This note also identifies how technologies apply to and impact dispute resolution procedures both, positively and negatively.

5. Regarding the stocktaking exercise on the way existing UNCITRAL texts apply, paragraph 29 of document A/CN.9/1091, which was generally endorsed by the Commission,[6] suggests to: (a) begin with an assessment of how UNCITRAL instruments addressed the developments and whether they need to be updated; (b) examine the interaction with UNCITRAL instruments in other areas, including those that provide functional equivalence rules for "in writing" and "signature" requirement; (c) be coordinated with projects of other Working Groups, for example, Working Group IV on issues related to the digital economy and Working Group V on civil asset tracing and recovery in insolvency proceedings; (d) take into account the wide range of dispute resolution means including new forms as well as the experience of courts in handling small claims and in supporting arbitration; (e) consider the range of experience in jurisdictions with different legal backgrounds and different levels of economic development; and (f) result in a product that can be shared not only with the Commission but more broadly with the international community. As these suggested steps are inextricably linked with the taxonomy, they are discussed under the taxonomy.

6. As certain issues have already been identified as being particularly relevant for the stocktaking project, these topics will be given weight in contemplating specific issues. It is nonetheless understood that the listed topics are not exhaustive and that an overall review of the different forms of dispute resolution and existing UNCITRAL texts may yield outcomes on issues other than those already identified.

7. In sum, this note attempts to: (a) identify, define and categorize new and conventional digital technologies and technology-enabled services and discuss their application to and impact on dispute resolution; (b) assess whether there are normative gaps in existing UNCITRAL texts and identify areas where there is a need to update or complement those texts or develop new ones; and (c) outline preliminary findings on the suggested way forward, including on possible future work.

8. In implementing the stocktaking project, and with a view to gathering broad experiences in jurisdictions with different legal backgrounds and levels of economic development, the secretariat has embarked on an initiative called the "World Tour", in which it organized discussions to seek inputs from different parts of the world so as to ensure the comprehensiveness of its work. The taxonomy takes into account the inputs received therefrom and the current note includes a dedicated section summarizing the discussions which have taken place so far. The note concludes with a preliminary list of areas where possible future work would be warranted.

II. Digital technologies and their impact on dispute resolution

A. General remarks

9. Digital technologies and technology-enabled services have changed the landscape of dispute resolution in various ways. For a long period of time, they have permeated dispute resolution services only at the margins, but the outbreak of the COVID-19 pandemic boosted the use of existing technologies and the development of new technologies. They have brought about positive changes to traditional ways of settling disputes be it by court proceedings, arbitration and mediation, such as increasing efficiencies, and in view of less travel needed, the reduction of carbon

[6] Ibid.

footprint. On the other hand, they have also raised specific legal and procedural issues, such as those on due process and fairness, and also concerns of what is referred to as the digital divide, i.e., the unequal access to digital technologies, which may have significant consequences in terms of access to justice. Furthermore, they have changed business practices, which led to the adaption of traditional dispute resolution and, in some cases, to the development of new dispute resolution services and even mechanisms.

10. The following sections identify digital technologies and technology-enabled services, the legal issues arising from their deployment in dispute resolution; and appraise the application of existing texts developed by UNCITRAL in the area of dispute resolution.

B. Electronic communication

1. Definition, application and existing UNCITRAL texts

Data messages

11. Electronic communication is defined as communication made by data messages.[7] Data messages are pieces of information generated, sent, received or stored by electronic, magnetic, optical or similar means.[8] Means such as emails, file-sharing tools and online platforms are widely used to facilitate the processing of electronic communications. Data messages generated and exchanged are stored on electronic media and such data messages are referred to as electronically stored information.

12. Data messages may be accessed and transmitted easily and swiftly. The information that they contain can also readily be extracted, altered and used for subsequent purposes, they do not require space that would otherwise be required to physically store large volumes of their paper-based equivalents, and they do not require the documents to be physically shipped. These characteristics of data messages and their communications have contributed to increasing efficiencies of businesses including through enhancing paperless trade.

13. The impact of electronic communication may be seen in many aspects of dispute resolution. In international arbitration, for example, written submissions are drafted in great detail with quotes of relevant legal authorities, evidence and precedents, and copies of evidence are submitted in its entirety or large portions of relevant parts. Due to the nature of data messages, citing existing documents may be done with relative ease. Large volumes of electronic documents may be easily exchanged instantaneously. Hence, electronic communications have significantly increased the volume of information that needs to be dealt with in settling disputes. Albeit limited to exceptional cases, notices of arbitration and arbitral awards have been communicated electronically.

Signatures and timestamps

14. The form in which a data message exists warrants peculiar means to ascertain that information contained therein is attributable to a specific individual or entity. One way is to use electronic signatures. Article 2(a) of the UNCITRAL Model Law on Electronic Signatures defines an electronic signature in terms of data in electronic form in, affixed to or logically associated with, a data message, which may be used to identify the signatory in relation to the data message and to indicate the signatory's intention in respect of the information contained therein. Electronic signatures may be complemented by related services to ascertain their integrity. There are various types of electronic signatures, such as those based on cryptography but there are also

[7] Article 4(b) of the United Nations Convention on the Use of Electronic Communications in International Contracts.

[8] Ibid., article 4(c).

other technologies. In a limited number of cases, awards have been signed electronically, of which some were reported to have used electronic signatures in accordance with the national law of the respective jurisdiction.

15. Electronic communications in dispute resolution may also need to be associated with a specific time and date. For this purpose, electronic timestamps may be used, which may be complemented by related services to verify the time and date at which the communication took place, as provided for in article 18 in conjunction with article 22 of the UNCITRAL Model Law on the Use and Cross-border Recognition of Identity Management and Trust Services.

16. What is fundamentally required of signatures, whether they are handwritten or in electronic form, is that they function to identify the signatory in relation to the document, enable the authentication of the signatory's signature, and indicate the signatory's intention in respect of the information contained therein. What is required of the time and date associated with the communication is that they function to specify the timing as to when the communication took place. It may thus be left ultimately to the courts and other adjudicative bodies to determine whether what is claimed to be a signature or a timestamp in the communication is proven to have fulfilled those functions. As such, depending on the context in which they are used, requirements on the electronic equivalent of signatures and timestamps need not be strictly limited to those that are provided for in national laws.

17. Article 9(3) of the United Nations Convention on the Use of Electronic Communication in International Contracts (Electronic Communications Convention), which has been reproduced in other texts such as article 4(2) of the United Nations Convention on International Settlement Agreements Resulting from Mediation (Singapore Convention), provides that the signature requirement in relation to an electronic communication is met if the method used is proven in fact to have fulfilled the functions of a signature, i.e., to identify the signatory and to indicate the signatory's intent in respect of the information contained in the electronic communication. A dispute resolution body and/or the institution administering/assisting it may play a role in the authentication of data messages and the time and date associated with them. The third party may store data messages created and submitted in relation to the case on a secure electronic media and make itself available to certify their content upon request.

2. Issues in relation to arbitral proceedings and electronic communication

18. Electronic communication has enhanced businesses' swift and large-scale exchange of information and, in turn, has impacted arbitral proceedings in a way that required them also to be up to speed and capable of handling large volumes of information with increased efficiency. It has also become an integral part of arbitral proceedings and is extensively being used to communicate written submissions, documentary evidence and other documents concerning the case. The following discusses specific issues in arbitral proceedings that arise directly or indirectly from electronic communication. The issues are: (a) electronic communication of documents; (b) management of electronic documents and information contained therein; (c) electronic documents and court assistance; (d) electronic awards; and (e) interim measures on the preservation of assets and their enforcement by courts.

(a) Electronic communication of documents

19. Emails are the predominant means of communication in arbitration. Prior to the pandemic, parties were often required to submit hard copies in addition to electronic documents. However, in line with the movement to go green, coupled with the limitation of the pandemic, there is a trend towards eliminating the requirement of submitting paper-based copies. The UNCITRAL Arbitration Rules (UAR) does not impose a requirement for paper-based copies. The UAR provides that all communications, including statements of claim and defence, shall be communicated to the other party and to the arbitral tribunal (article 17(4), 20(1), 21(1), 24), without

any explicit reference as to the means of communication. Furthermore, article 3(3) of the UNCITRAL Expedited Arbitration Rules (EAR) provides that the arbitral tribunal may utilize technological means to conduct proceedings.

20. A notice of arbitration nonetheless continues to be communicated by delivery of a paper-based original or copy with proof of service. After receipt of a notice of arbitration and the response thereto, and the communication between the parties and the arbitral tribunal has started, there is little risk that documents exchanged over emails in this ongoing process will end up not being properly received. In contrast, the communication of a notice of arbitration is a significant initial step of an arbitral proceeding, which cannot be overlooked to ensure due process. According to article V(1)(b) of the Convention on the Recognition and Enforcement of Foreign Arbitral Awards (New York Convention) and article 34(2)(a)(ii) of the UNCITRAL Model Law on International Commercial Arbitration (Model Law on Arbitration), the lack of proper service of the notice of arbitration may result in the award not being enforceable. In some instances, however, notices of arbitration have been communicated electronically from one party to another, including those to initiate emergency arbitration proceedings. For example, a party could be prompted to swiftly deliver via email a notice of arbitration, notwithstanding the risk of doing so, when it is faced with a time lapse that would render a claim extinguished under applicable law. A party may especially be inclined to do so when mail delivery is unreliable.

21. Article 21 of the Model Law on Arbitration provides that "[u]nless otherwise agreed by the parties, the arbitral proceedings in respect of a particular dispute commence on the date on which a request for that dispute to be referred to arbitration is received by the respondent." Article 3(1) of the UAR provides that "[t]he party or parties initiating recourse to arbitration […] shall communicate to the other party or parties […] a notice of arbitration" and article 3(2) of the same rules provides that "[a]rbitral proceedings shall be deemed to commence on the date on which the notice of arbitration is received by the respondent." Accordingly, a notice of arbitration needs to be "received" by or "communicate[d]" to the other party and explicit reference to the means by which notice of arbitration is received or communicated is not made.

22. Despite the flexibility that arbitration rules provide, issues concerning email delivery of notices of arbitration have arisen in practice. For example, such issues were observed in the case of *Glencore Agriculture B.V. v. Conqueror Holdings Ltd*.[9] This was a case in which the debtor of an arbitral award sought to set aside the award of a sole arbitrator, by which it was ordered to pay a specific monetary amount. The award debtor did not take part in the arbitration and was unaware of the proceedings until it received the award by post. The notice of arbitration and subsequent documents were sent from the award creditor to the email address of an employee of the award debtor who was tasked with an operational role and not to a generic email address or any other email address of the award debtor. The High Court of Justice of England and Wales rejected the award creditor's submission that service of the notice of arbitration was sufficient merely because it was sent to the work email address of the award debtor's employee. The Court decided that the use of any email address would not be sufficient, and that if an individual email address was used, the proper service of the notice depended on whether that person had the authority to receive a notice. In the case at hand, the employee had no such authority, and consequently, a judgement was rendered in favour of the award debtor. Relevant standards may also be observed and drawn from cases generally concerning the lack of proper service of notices in the 1958 New York Convention Guide and Web Platform (1958 NYC Guide and Platform).[10]

[9] United Kingdom, High Court of England and Wales, *Glencore Agriculture B.V. v. Conqueror Holdings Limited*, Case No. CL-2016-000684, Judgement, 15 November 2017, [2017] EWHC 2893.

[10] The 1958 New York Convention Guide and Web Platform is available at: https://newyorkconvention1958.org/.

23. The secretariat will gather and compile a broad range of relevant information on case law and practice. Compiled information may be analysed and shared with a view to extracting useful guidance and best practices to mitigate the risk of notices of arbitration served electronically being found ineffective and of awards resulting from proceedings initiated by such notices of arbitration being rendered unenforceable. This should be conducted in close coordination with UNCITRAL's activities on case law, including those with respect to the CLOUT system and the 1958 NYC Guide and Platform.

(b) Management of electronic documents and information contained therein

24. The large volume of information exchanged in arbitration may pose a concern about due process and fairness. Specifically, it has been observed that the flood of information – especially irrelevant information that in the end did not matter in deciding the case – was exacerbated by digitalization and created a risk that key disputed issues were hidden and essential arguments and evidence submitted by the parties were overlooked or not fully digested by the arbitrators.

25. Technologies such as information search functions and artificial intelligence however provide solutions to deal with large volumes of information efficiently and effectively. Extracting information from electronic documents may be easier than extracting it manually from paper-based documents. The adoption of the so-called e-briefs, which embed hyperlinks to evidence, including documents and exhibits, also facilitates access to relevant information.

26. As human intervention will likely continue to be necessary for dealing with information in arbitral proceedings and the volume of information is likely to continue to increase, effective document/information management will need to be addressed. This could be done through the arbitral tribunal's exercise of its case management power.

27. Article 17(1) of the UAR provides that "the arbitral tribunal may conduct the arbitration in such a manner as it considers appropriate, provided that the parties are treated with equality and that at an appropriate stage of the proceedings each party is given a reasonable opportunity to present its case", and that "[t]he arbitral tribunal, in exercising its discretion, shall conduct the proceedings so as to avoid unnecessary delay and expense and to provide a fair and efficient process for resolving the parties' dispute." It is understood that this article confers on the arbitral tribunal broad discretionary power regarding the conduct of the proceeding. Article 9(1) of the EAR specifies that the arbitral tribunal should consult the parties on the manner in which it will conduct the arbitration, via a case management conference or otherwise.

28. As part of its broad discretionary power regarding the conduct of the arbitration, the arbitral tribunal may exert its power to encourage and guide the parties so that their arguments and evidence submitted are not redundant and focused on the key disputed issues. Practice in arbitration has taken various approaches to encourage arbitral tribunals to do so. Domestic courts are faced with the same problem and their rules and practices are also worth referencing. Outlined below are preliminary findings in this regard.

29. Rule 31 of the International Centre for Settlement of Investment Disputes (ICSID) Arbitration Rules on case management conferences provides that tribunals shall convene one or more case management conferences with the parties to: (i) identify uncontested facts; (ii) clarify and narrow the issues in dispute; or (iii) address any other procedural or substantive issue related to the resolution of the dispute. If uncontested facts were identified, and issues in dispute were clarified and narrowed, it is expected that the reduction of the volume of redundant information would naturally follow.

30. In some jurisdictions, rules on civil court proceedings require parties to explicitly identify in writing whether it agrees or disagrees with factual statements

advanced by the opposing party.[11] In civil court practice, collaborative editing functions are utilized in preparatory meetings held online to compile and summarize the parties' arguments, and to also clarify and narrow down the key disputed issues.

31. Depending on how the provision is actually implemented, article 23(1)(a) of the 2021 International Chamber of Commerce (ICC) Rules of Arbitration appears to have potential to serve a similar purpose. It stipulates that the arbitral tribunal shall draw up, on the basis of documents or in the presence of the parties and in light of their most recent submissions, a document defining its terms of reference that includes, inter alia, a summary of the parties' claims and of the relief sought by each party and a list of issues to be determined.

32. As an attempt to directly contain the volume of information, some jurisdictions have introduced page limits to written pleadings in court proceedings.[12] Similarly, some arbitration rules impose page limits on written pleadings in expedited arbitration.[13]

33. As mentioned above, preliminary findings show that various approaches have been taken to address the flood of information problem.

34. In light of the above, work on case management conferences and their conduct for the efficient and effective management of documents/information as well as for the identification of key issues, facts and evidence, including through the assistance of experts, may be contemplated and whether the relevant UNCITRAL texts, such as the UAR, the EAR and the UNCITRAL Notes on Organizing Arbitral Proceedings (Notes) could be further usefully complemented.

(c) Electronic documents and court assistance

35. As paperless trade is enhanced and important documents are exchanged and stored electronically, essential documentary evidence may be found in a server, more specifically in cloud storage. If the cloud storage is under the control of a third party, a party to the arbitration may request assistance from a court to seek disclosure of the electronic document from the third party provided that the national law on which a party relies is consistent with article 27 of the Model Law on Arbitration.

36. This poses two legal issues. One is whether the request to the court for the "disclosure" of the electronic document falls under "assistance in taking evidence". The other is the question as to the circumstances in which the electronic document in the cloud storage may be found to be within the jurisdictional reach of the court's power.

37. As the first issue is not specific to electronic documents stored in a server, relevant case law may be obtained through further research. Such research should be closely coordinated with UNCITRAL's activities on case law, including those with respect to the CLOUT system.

38. As for the second question, it is anticipated that extensive research will be necessary to put forward findings on the state of play. In the research, it should be kept in mind that there may be certain relevant factors such as the location of the server of the cloud storage and the third party who has control over the electronic document that could be key to the determination regarding the jurisdictional reach.

(d) Electronic awards

39. The process of making and delivering a paper-based arbitral award may be time-consuming. For example, a three-member arbitral tribunal would initiate the

[11] Japan, Rules of Civil Procedure articles 79–81, Republic of Korea, Rules of Civil Procedure article 65.

[12] Israel, 2018 Civil Procedure Regulation articles 9(d), 18(b), 50(5), 134(3), 140(1), Republic of Korea, Rules of Civil Procedure article 69-4.

[13] Rule 81(1)(c), (f) of the ICSID Arbitration Rules, articles 8 and 9 of the Canadian Arbitration Association Expedited Arbitration Rules.

process by one member signing the original and copies of the award, which will subsequently be passed on to another member of the tribunal via mail or courier service for that member to sign. After the original and copies of the award have been signed by all three members, they will finally be communicated to the parties again via mail or courier service. During the pandemic, with the disruption of mail and courier service, the process was further delayed. While the issuance of electronic awards, which could be defined in terms of awards that are issued only in electronic form, may be a solution to addressing the issue of cost and duration arising from this process, electronic awards have yet to become prevalent, owing much to doubts concerning their enforceability and utility.

40. The following issues arise with regard to the enforceability and utility of electronic awards.

- For enforcement purposes, article IV(1)(a) of the New York Convention provides that the party shall supply "a duly certified copy thereof" and Article 35(2) of the Model Law on Arbitration refers to "a copy thereof".
- Article 7(2) of the Model Law on Arbitration on arbitration agreements provides that "[t]he arbitration agreement shall be in writing" and article 7(4) of the same Model Law provides that "[t]he requirement that an arbitral agreement be in writing is met by an electronic communication if the information contained therein is accessible so as to be useable for subsequent reference". In contrast, article 31(1) of the Model Law on Arbitration on awards provides that "[t]he award shall be made in writing and shall be signed by the arbitrator or arbitrators" without providing for a functional equivalence similar to article 7(4).

41. Issues regarding electronic awards appear in three different phases. The three phases are issuance, delivery and enforcement. In the issuance phase, the specific issue is what the corresponding requirements of electronic awards should be in view of the "in writing" and signature requirements on awards. In the delivery phase, there is an issue as to how to ascertain the receipt of electronic awards and its timing, so as to enable the identification of the start date of the time lapse, such as for the post-award remedies including setting aside awards. In the enforcement phase, the issue is how to meet the requirements of article IV(1)(a) of the New York Convention that the party shall supply "a duly certified copy thereof" and article 35(2) of the Model Law on Arbitration to "supply a copy thereof" and whether awards may be communicated electronically to competent courts and enforced by them.

42. As documents in electronic form become more broadly accepted, it is worth noting that laws in a number of jurisdictions and existing arbitration rules expressly contemplate or, at least, take a permissive approach towards awards being made only in electronic form.

43. For example, article 1072(b)(3) of the Dutch Code of Civil Procedure provides that an arbitral award may be made in electronic form by providing it with an electronic signature. Section 52 of the United Kingdom (UK) Arbitration Act provides that "[t]he parties are free to agree on the form of an award". In Panama, arbitral awards are made exclusively in electronic form in some cases, and those awards have subsequently been enforced by its courts. With reference to institutional rules regarding awards, article 26.2 of the 2020 London Court of International Arbitration (LCIA) Arbitration Rules provides that "any award may be signed electronically" and article 26.7 of the same rules provide that "transmission [of an award] may be made by any electronic means".[14]

44. Despite such laws and rules, practice has taken a cautious approach overall and traditional paper-based awards remain prevalent, even in those jurisdictions in which

[14] See also rule 12 of the UK Jurisdiction Taskforce Digital Dispute Resolution Rules which provides that "[a]ny award or decision of the tribunal must be in writing (which includes in electronic form) and must be signed by the tribunal (which includes, if the tribunal thinks it appropriate, by digital signature or cryptographic key).".

laws envisage the making of electronic awards. This is due to the legal uncertainties that persist.

45. Promotion of electronic awards would result in increased efficiency and as such, to provide clarity and certainty and avoid unnecessary legal disputes, a legal framework with express provisions for the use of electronic awards would be beneficial. This would allow and promote the making of electronic arbitral awards and to enable their electronic communication to and enforcement by competent courts.

46. The preliminary findings of the stocktaking on the topic (see paras. 47, 71–73, 90, 91 in A/CN.9/1155) suggest that legislative work on the recognition and enforcement of electronic awards would be of significant relevance for UNCITRAL, which could take the form of an additional recommendation on or an international text supplementing the New York Convention and amendments to the Model Law on Arbitration, all of which UNCITRAL would be ideally placed to undertake.

47. The secretariat will continue its research and continue to seek inputs from different regions on this topic, which will be analysed and shared. The secretariat also intends to contemplate further and present in concrete terms the way in which work on this topic may take shape as possible legislative work.

48. In doing so, it should be borne in mind that some provisions in existing UNCITRAL texts, including on electronic commerce and communication, may provide a basis. Such provisions include article 7(4) of the Model Law on Arbitration on arbitration agreements, and the functional equivalence rule for signatures found in article 4(2) of the Singapore Convention, article 8(3) of the UNCITRAL Mediation Rules (Mediation Rules) and article 9(3) of the Electronic Communications Convention (see paras. 14–17 above). It should also be noted that, pursuant to article 20 of the Electronic Communications Convention, the provisions of the Convention apply to the formation of arbitration agreements.

(e) Interim measures on the preservation of assets and their enforcement by courts

49. Electronic communication has allowed the transfer of intangible property to take place with relative ease and greater speed. Accordingly, a successful award creditor has increasingly become vulnerable to the risk of the award debtor’s assets being dissipated by the time the award is rendered.

50. In terms of preservation of assets, article 17(1) of the Model Law on Arbitration provides that the arbitral tribunal may, at the request of a party, grant interim measures. Defining “interim measures”, article 17(2)(c) provides that “[a]n interim measure is any temporary measure, whether in the form of an award or in another form, by which, at any time prior to the issuance of the award by which the dispute is finally decided, the arbitral tribunal orders a party to […] [p]rovide a means of preserving assets out of which a subsequent award may be satisfied”.

51. Article 17 does not prescribe the way in which assets may be preserved by an interim measure. Such being the case, lack of guidance regarding the specifics of the content of interim measures may leave uncertainties when they are subsequently enforced by courts, and lead to delays which could be critical especially with increased digitalization. It may thus be beneficial to provide guidance to the arbitral tribunal in ordering, and to the parties in requesting interim measures to preserve assets.

52. If assets to be preserved are digital assets, so as to seamlessly facilitate the enforcement of interim measures in the digital economy, guidance could be provided to the courts, and to the parties on enforcement of digital assets.

53. To provide guidance on interim measures aimed at preserving assets, extensive research on case law will be required. While research remains at an early stage, some relevant case law has been identified. For example, in the case of *CE International*

Resources Holdings LLC v. S.A. Minerals Ltd et al.,[15] the Southern District Court of New York granted enforcement of an interim measure rendered by an arbitrator in which it ordered, first, the posting of security in the amount of 10 million USD and, second, enjoining of the respondent from transferring any assets wherever located to the amount of 10 million USD in the event that they failed to post the ordered security.

54. As an interim measure prohibiting transfer of all assets in the possession of the respondent may be life-threatening in many cases for businesses, the approach to primarily order the posting of security of a certain amount, and to order, secondarily, the prohibition of the respondent's transfer of assets, contingent upon non-performance of the posting of security, appears to be a balanced approach.

55. With respect to the issue as to enforcement of digital assets, alongside the issue as to how digital assets are treated under domestic law, systemic weaknesses have been identified especially in materializing enforcement orders against a debtor that is unwilling to comply. As work in this area is being carried out by Working Group V (Insolvency Law) on legal issues arising from civil asset tracing and recovery in insolvency proceedings and also by UNIDROIT's Working Group on Best Practices for Effective Enforcement, work on this matter needs to be coordinated and monitored to see whether it is possible to build on ongoing work or whether specific work is required to address specific matters.

56. While relevant cases have been identified through preliminary research, further research needs to be conducted so as to extract useful guidance from a fuller set of information. Information may be compiled, analysed and shared, which may lead to the development of guidance material on interim measures on the preservation of assets. As discussed above, guidance on enforcement of digital assets in courts may also need to be provided.

C. Videoconferencing

1. Definition and application

57. Videoconferencing is a technology-enabled service that allows participants in different locations to communicate with each other through audio and video using electronic technology or systems, usually via Internet. Basic functions of videoconferencing include video which can be turned on/off, microphone which can be muted/unmuted, which may be accompanied by other functions such as screenshare which enables documents to be displayed on the screen, raise hand which is a function to alert other participants of one's intention to speak, and chat which is a function that enables participants to exchange messages in writing.

58. Recourse to videoconferencing has been boosted in dispute resolution by the COVID-19 pandemic and is here to stay. Videoconferencing has advantages such as enabling flexible participation and travel cost and time saving. There are nonetheless obvious specificities which need to be taken into account when using videoconferencing in dispute resolution. Such specificities include the risk of technical failures, the possibility of participants being located in different time zones, the inability to read body language, and the limit of visual field and sound through camera and microphone. More generally, when the required connectivity and technology are not available, videoconferencing may lead to inequality between the parties (see para. 9 above).

59. In arbitral proceedings, videoconferencing is used regularly to hold meetings with the parties and the tribunal, such as case management conferences and, as necessary, hearings. Videoconferencing is also increasingly being used for the conduct of mediation. Online mediation is reported to have been successful during

[15] United States, U.S. District Court Southern District of New York, *CE International Resources Holdings LLC v. S.A. Minerals Ltd et al.*, Case No. 12 Civ. 8087 (CM), Decision and Order, 10 December 2012.

the pandemic with success rates nearly the same as in-person mediation. The following discusses issues on the use of videoconferencing in hearings and mediation.

2. Use of videoconferencing in arbitral hearings[16]

60. Article 24(1) of the Model Law on Arbitration provides that "the arbitral tribunal shall decide whether to hold oral hearings for the presentation of evidence or for oral argument, or whether the proceedings shall be conducted on the basis of documents and other materials" and that "[it] shall hold such hearings at an appropriate stage of the proceedings, if so requested by a party."

61. Article 17(3) of the UAR, which is similar to article 24(1) of the Model Law on Arbitration, provides that "[i]f at an appropriate stage of the proceedings any party so requests, the arbitral tribunal shall hold hearings for the presentation of evidence by witnesses, including witnesses, or for oral argument."Article 28(4) of the UAR provides that "[t]he arbitral tribunal may direct that the witnesses, including expert witnesses, be examined through means of telecommunication that do not require their physical presence at the hearing (such as videoconference)." Article 3(3) of the EAR provides that: "[t]he arbitral tribunal may […] utilize any technological means as it considers appropriate to conduct the proceedings, including […] to hold […] hearings remotely."

62. However, if article 24(1) of the Model Law on Arbitration is interpreted to mean that upon the request of a party, an oral hearing has to be held physically, this may hinder the holding of online hearings. Furthermore, a party opposed to the holding of hearings online may also invoke a provision based on article 18 of the Model Law on Arbitration and claim unequal treatment and/or the lack of full opportunity to present its case. As breaches of the arbitral procedure under domestic arbitration law may render awards unenforceable, attention has been given to whether the arbitral tribunal may decide to hold online hearings over a party's request to hold physical hearings or its objection against the holding of hearings online.

63. The conduct of online hearings, in other words hearings on videoconferencing platforms, has also been debated. While videoconferencing platforms enable face-to-face communication, there are some specificities compared to in-persons hearings, such as the need (i) for the necessary technology and reliable Internet connection; (ii) for safeguards to ensure security and confidentiality; and (iii) to account for differences regarding communication generally, and in particular evidence presentation. These specificities need to be taken into account in the actual conduct of online hearings. Lack of regard to those specificities may result in undermining due process, fairness, and the integrity of arbitral proceedings.

64. With respect to the first issue as to whether or not a physical hearing may be held over a party's objection, despite case law concerning the issue being limited, in some jurisdictions, there have been judicial decisions upholding the arbitral decision to hold hearings online notwithstanding an objection by a party.[17] Overall, it appears that parties have reacted favourably to and have agreed to the holding of hearings online, perhaps owing to the inevitability during the pandemic and the positive experience gained therefrom.

65. With regard to the second issue as to the actual conduct of online hearings, prearranged texts, often called protocols, guides or guidance notes, have been

[16] A report titled "Does a Right to a Physical Hearing Exist in International Arbitration?" is published by ICCA and available at: https://cdn.arbitration-icca.org/s3fs-public/document/media_document/ICCA_Reports_no_10_Right_to_a_Physical_Hearing_final_amended_7Nov2022.pdf.

[17] Austria, Austrian Supreme Court, Case No. 18 ONc 3/20s, Decision, 23 July 2020 (to be published in CLOUT issue 223); see also Sweden, Svea Court of Appeal, ICA Sverige AB v. Begsala SDA AB, Case No. T 7158-20, Judgement, 30 June 2022, unofficial English translation available at https://jusmundi.com/en/document/pdf/decision/en-bergsala-sda-ab-v-ica-sverige-ab-judgment-of-svea-court-of-appeal-thursday-30th-june-2022.

developed in practice,[18] which are used by arbitral institutions, arbitrators and others involved in arbitral proceedings. As such texts are made publicly available in most cases, they have been obtained and reviewed in the course of the preliminary research. It is observed that such texts typically mention measures to mitigate risk of technical failures; steps to be followed when a technical failure occurs; measures to prevent witnesses from being exposed to external influence; and measures to preserve the integrity of proceedings, such as those on confidentiality, data protection and security.

66. By continuing the stocktaking activities, a fuller set of information, including on various protocols and guides for online hearings, may be obtained. Such information may be analysed and shared to lay the groundwork for developing texts.

67. Specifically, a common protocol or guidance notes on online hearings may be developed so that they are readily accessible by the users when needed, taking stock of the lessons learned since the onset of the pandemic and building on protocols already developed.

3. Use of videoconferencing in mediation

68. As provided for in article 2(2) of the Singapore Convention, electronic versions of settlement agreements are already envisaged in the legal framework. Also in terms of the conduct of mediation, article 4(1) of the Mediation Rules provides that "[t]he parties may agree on the manner in which the mediation is to be conducted" and article 4(4) of the same rules provides that "[i]n conducting the mediation, the mediator may, in consultation with the parties and taking into account the circumstances of the dispute, utilize any technological means as he or she considers appropriate, including to communicate with the parties and to hold meetings remotely."

69. The stocktaking project could gather best practices and develop a guidance material with regard to the conduct of online mediation.

70. Due to the nature of mediation, the arrangements for the conduct of online mediation made amongst the mediator and the parties in practice are rarely made public. According to preliminary research, some mediators mentioned that they took inspiration from protocols on online hearings in arbitration or had their own protocols to share with the parties, while other mediators said that they either communicated precisions regarding the conduct of online mediation as part of a letter or simply discussed them with the parties.

71. Whether a mediator makes use of a protocol, a guide or any other prearranged material would likely depend on its style and on the parties and their counsels' familiarity with online mediation. Though not all mediators use materials as such, it appears that mediators at least have exchanges on the conduct of online mediation with the parties in advance of the mediation. There seem to be specific issues on the conduct of online mediation that mediators commonly discuss with the parties (see para. 65 above).

72. As online mediation forms a part of a process to reach a settlement agreement between disputing parties through building rapport and confidence, online mediation should be conducted in a manner that is conducive to achieving that objective. Arrangements regarding confidentiality, privacy and security, including a recording prohibition, need to be put in place and that providing the parties with assurances that the mediator would also keep with the arrangements is key (see para. 65 above). Logistical and technical arrangements are considered essential. Furthermore, there is a need to address specificities of online communication, such as the limited ability to read body language.

[18] Texts obtained include ICC Checklist for a Protocol on Virtual Hearings and Suggested Clauses for Cyber-Protocols and Procedural Orders Dealing with the Organization of Virtual Hearings, SIAC Guides – Taking Your Arbitration Remote, JIDRC Sample Agreement for a Virtual Hearing, Seoul Protocol on Video Conferencing in International Arbitration, ALARB Protocol for the holding of arbitral hearings remotely or virtually.

73. As research has yet to be completed, stocktaking activities need to be continued to obtain a fuller set of protocols, guides or precisions regarding online mediation and information on best practices. Given the flexible nature of mediation and the degree of party autonomy in designing the process, it remains to be seen whether there would be some value-added in developing guidance material reflecting best practices.

D. Onscreen digital presentation

1. Definition and application

74. The significant increase in the volume of documents in arbitration has led to the emergence of specialized services for the electronic management of documents. With the necessary equipment and devices installed, electronically managed documents may be displayed onscreen under the control and direction of the speaker or examiner, saving time required to manually search the relevant page of a document from a voluminous paper-based record and ensuring that the same document is observed simultaneously by all those involved. While issues regarding cost, uneven access to technology and operability of platforms may arise, such services may contribute to increasing efficiencies.

75. Certain new onscreen presentation technologies are used, such as in construction cases, for the presentation of submissions and evidence to replace onsite visits, which tends to be a time and resource consuming process. Such technologies may also be deployed to make visible objects that would otherwise remain unseen, such as those under water. 3D modelling is one example of such technology. 3D modelling is a process which creates a three-dimensional representation of an object or a surface by using specialized software. 3D modelling has been used for presentation mainly in construction disputes. Another example is virtual reality technology. Virtual reality is a computer-based system that uses software, and devices such as headsets and sensors to create a three-dimensional environment simulating an environment approximating reality. While virtual reality technology may provide a similar experience as an onsite visit, to date, its use cases are limited.

2. Issues on onscreen digital presentation

76. Paragraph 110 of the Notes suggests the possibility of conducting a virtual inspection if adequate in the interest of efficiency or cost savings. New onscreen presentation technologies may be deployed as means to conduct a virtual inspection.

77. As the primary consideration is in the interest of efficiency and cost, in determining whether technology should be used for a virtual inspection, an assessment would be made to avoid the imposition of disproportionate costs. The need to ensure equal access to the technology leveraged and sufficient familiarity with such technology should not be overlooked.

78. Furthermore, in leveraging technology for onscreen presentation, it is cautioned that there is an accompanying risk of manipulation. Such technology may be misused to include information that is not supported by evidence. To address such risk, the parties could either jointly put forward the presentation or share the presentation with the other party to provide an opportunity for its review and for it to raise any disagreements as to the content of the presentation to the arbitral tribunal’s attention.

79. By continuing the stocktaking activities, further information on the use of technology in the presentation of submissions and evidence may be compiled, analysed and shared, so as to lay the groundwork for updating rules, standards, or guidance, if found of interest.

80. Specifically, the Notes may be revised to include reference to the use of technology regarding onscreen presentation and related issues in the section on onsite inspection or as a separate section on new forms of presentation of submissions and evidence.