Gleiss Lutz

CIVIL LITIGATION AND ARBITRATION: A NEW WORLD?

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If you search BeckOnline for the keywords "*metaverse*" and "*ZPO*" (Code of Civil Procedure), you currently do not get a single hit. This is an astonishing search result from one of the major German online legal libraries. On this basis, at least, it would seem that from a German point of view, little or no attention has been paid to dispute resolution issues in connection with civil litigation and arbitration law in the metaverse context. The results are a little better if you search for "*Streitbeilegung*" (dispute resolution) and "*smart contract*", but even then the list is not exactly long.[1]

When it comes to international arbitration, the situation is quite different. For example, an article in Global Arbitration Review from March 2022 entitled "*Get versed in the metaverse!*" explains "*why the arbitration community needs to pay attention to blockchain, the metaverse, NFTs and sundry new technologies (even if many think it's a faddish waste of time)*".[2] Against this background, the present article seeks to provide a *tour d'horizon* of potential issues that may arise under German civil litigation and arbitration law in the future when resolving disputes in connection with the metaverse.

[1] The article by Kaulartz/Kreis, in Braegelmann/Kaulartz (eds.), *Rechtshandbuch Smart Contracts* (2019), chapter 19, margin no. 1 et seq. deserves a particular mention.

[2] Get versed in the metaverse! - Global Arbitration Review.

I. CIVIL LITIGATION

1. VALIDITY OF CHOICE-OF-VENUE AGREEMENTS AND PROCEDURAL SMART CONTRACTS

First, the question of the extent to which German businesses and consumers can enter into valid choice-of-venue agreements in favour of foreign courts will probably arise more frequently in the next few years. Sandbox's general terms and conditions of business, for example, state that the Hong Kong courts have exclusive jurisdiction.[3] Under the Code of Civil Procedure (*Zivilprozessordnung*, "ZPO"), the only private individuals who can generally conclude valid choice-of-venue agreements *ex ante* are merchants (section 38 ZPO).[4] But even merchants cannot exclude German jurisdiction if mandatory protective provisions of the German legal system would be circumvented in the specific case.[5] This considerably restricts the group of persons who can validly conclude *ex ante* choice-of-venue agreements.

The use of smart contracts in the metaverse-context, in particular, is likely to trigger entirely new validity issues in both international and national contexts in the future. Smart contracts have the potential to fundamentally change traditional claim enforcement mechanisms.[6] The term "smart contract" is often paraphrased as describing software that automatically executes legal relationships when previously defined conditions have been met. Another way of looking at these is as promises of performance in digital form, with fulfilment of these promises being part of the code. Such agreements can reverse the parties' roles and therefore also the burden of instituting litigation. While it is typically the creditor who must go to court to enforce his claim, after a smart contract has been executed it may – depending on the contract structure – be up to the debtor to go to court to reclaim a payment made that was not owed.[7] One example is a smart contract that automatically transfers the purchase price to the creditor after the expiry of a predefined period or when certain conditions are met, so that in the event of a dispute it is not the creditor who has to enforce his claim for payment in court, but the debtor who has to enforce his claim for repayment. This saves the creditor from having to go through the court proceedings and subsequent enforcement. But does current German law accept such a "circumvention" of the ZPO, or do limits exist for such smart contracts and similar mechanisms? The initial views put forward in the legal literature recognise freedom of contract in principle, but at the same time refer to the mandatory limits laid down in particular in section 138 Civil Code (*Bürgerliches Gesetzbuch*, "BGB") and in the provisions governing general terms and conditions of business.[8] This may open up a new, broad field involving validity checks for smart contracts, which may have an impact on possible legal proceedings. There is already case law on the review of smart contracts under the provisions that govern general terms and conditions outside the area of procedural and arbitration law.[9]

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[3] "*The rights and obligations of the parties hereunder and the interpretation of these Terms will be governed by the laws of Hong Kong, without giving effect to its principles of conflicts of law. If either party brings against the other party any proceeding arising out of these Terms, that party may bring proceedings only in the courts of Hong Kong and no other courts, and each party hereby submits to the exclusive jurisdiction of those courts for purposes of any such proceeding.*" Available at www.sandbox.game/en/terms-of-use.

[4] On the application of sections 38 and 40 ZPO to choice-of-venue agreements in favour of a foreign court, Federal Court of Justice, NJW 1997, 2885, 2886

[5] Cf. Heinrich, in: Musielak/Voit, *ZPO*, 19th edition (2022), section 38, margin no. 19 et seq.

[6] For details cf. Wagner, 'Algorithmisierte Rechtsdurchsetzung', AcP 2022, 56 et seq.

[7] Riehm, in Braegelmann/Kaulartz (eds.), *Rechtshandbuch Smart Contracts* (2019), chapter 9, margin nos. 4, 29.

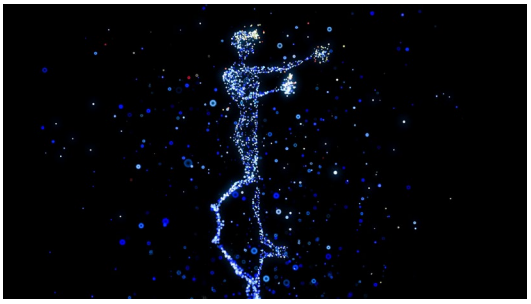
[8] Wagner, *Algorithmisierte Rechtsdurchsetzung*, AcP 2022, 56, 68 et seq., 74 et seq.; Riehm, in Braegelmann/Kaulartz (eds.), *Rechtshandbuch Smart Contracts* (2019), chapter 9, margin nos. 3, 29 et seq.

[9] Düsseldorf Higher Regional Court, judgment of 7 October 2021 on the invalidity of blocking a leased car battery by remote access after termination, case 20 U 116/20 = BeckRS 2021, 35003; ultimately confirmed by Federal Court of Justice, judgment of 26 October 2022, case XII ZR 89/21.

2. EVIDENTIARY VALUE OF ELECTRONIC DOCUMENTS, HEARINGS HELD BY VIDEOCONFERENCE

Imagine that a legal dispute arises over which the German courts have jurisdiction and in which the agreed smart contracts are valid. Looking at the context of disputes involving the metaverse, there is much to suggest that civil proceedings involving such disputes are much more likely to use the already existing digital instruments of the ZPO than has been the case to date:

The provisions on the evidentiary value of electronic documents (sections 371, 371a, 416a ZPO) will be applied more frequently if only because paper will hardly have the significance in the metaverse that it has in the real world – if indeed it has any significance at all. Tech-savvy parties and their counsel are also more likely to choose hearings held by way of video and audio transmission (section 128a ZPO) than would be the case in real-world disputes. Courts today are also significantly better positioned to hold video hearings than they were a few years ago – not least because of the pandemic. A lot has changed in this regard when it comes to day-to-day court practice in Germany.



It remains to be seen whether the parties to the proceedings may perhaps even wear 360° headsets in the future so that a hearing can actually be held in the metaverse. This seems conceivable as long as the judges are in the courtroom and the images from the metaverse are transmitted there, so that the hearing remains public. What is doubtful, however, is whether there will actually be a legitimate need for a hearing to be held in the metaverse. The mere desire of tech-savvy users to conduct court proceedings there is unlikely to be sufficient for this.

Looking ahead, the online civil proceedings for disputes up to EUR 5,000 that are currently being discussed may also be of interest to users involved in metaverse-related disputes. The parties and the court would only meet online, evidence would only be taken digitally and entry fields would replace submissions of fact.[10] It remains to be seen how this can be reconciled with the need to ensure that hearings are public.

3. DEALING WITH METAVERSE USERS' DESIRE FOR ANONYMITY

Dealing with metaverse users' desire to remain anonymous may well prove to be even more challenging. The metaverse could take anonymity to a whole new level – based on the aspirations of many users for anonymous communication, anonymous contacts and anonymous trading. Users can already exchange goods and services via avatars in the metaverse without having to disclose their real-world identities. As it currently stands, however, the ZPO does not make any provision for requests for anonymity by the parties. In particular, it does not provide for proceedings to be conducted against anonymous persons. Instead, section 253(2), no. 1 ZPO unequivocally requires "*the designation of the parties*" to be included in the statement of claim. This usually means that the party's name must be given. This can only be avoided if parties can be designated so clearly without stating their name that there can be no doubt about their identity and position and they can be identified by any third party based on the designation.[11] According to case law, for an action to be properly filed, it must generally also include an address for summons.[12] This means that if the identity

[10] ZPO-Reform: Digitalisierung im Reallabor - Anwaltsblatt (anwaltverein.de).
[11] Federal Court of Justice, decision of 18 September 2018, case VI ZB 34/17, NJW-RR 2018, 1460, para. 7.
[12] Federal Court of Justice, judgment of 9 December 1987, case IVb ZR 4/87; Zöller/Greger, 34th edition (2022), section 253, margin no. 8.

of the person or entity behind an avatar is unknown and cannot be unequivocally determined by any third party, it is not possible to file an action against the avatar. This applies all the more if what is behind an avatar is not a natural person or a person with legal capacity, but artificial intelligence.

It is not impossible that this may change in future. Some time ago, the European Parliament called on the European Commission to assess the need for civil law regulations in the field of robotics, in particular a special legal status for robots, so that

> *"at least the most sophisticated autonomous robots could be established as having the status of electronic persons responsible for making good any damage they may cause, and possibly applying electronic personality to cases where robots make autonomous decisions or otherwise interact with third parties independently."*[13]

Although these considerations are anchored in liability law,[14] they could certainly also be applied in the context at hand. Electronic personality could be considered not only for "*autonomous robots*" but also for avatars of natural persons or persons with legal capacity. The digital identity promoted by the German government is of no help here, at least if the natural persons behind the electronic personalities do not want to reveal their identity in the metaverse – the question of how they identify themselves digitally is then entirely moot. The introduction of an electronic personality may sound strange to us today. However, the more parts of life are transferred to the metaverse, the stronger the desire for an electronic personality might be. It is already common for players in online games to know each other only by their invented identities. If this practice extends to trade in goods, it would not be that big a step to recognise the legal capacity of electronic personalities.

Ultimately, however, the fundamental question that needs to be answered here is the extent to which the German legislature will recognise a right to anonymity in its legal and judicial system. The State is likely to continue to reject this desire for anonymity in case of doubt and, at best, introduce additional possibilities to ensure anonymity between the parties. This is precisely the solution envisaged in international arbitration, as we will see below.

II. ARBITRATION PROCEEDINGS

International arbitration has been concerned for some time now with the procedural challenges that disputes in the context of the metaverse might pose for arbitration proceedings. The Paris Arbitration Week recently even devoted a number of sessions to the topic and hosted the "*First-ever Virtual Reality Arbitration Conference*" in the metaverse on 30 March 2022.[15]

Visual depictions of such events still tend to make people think of comics rather than a substitute for the real world, and some wonder why such meetings in the metaverse are needed at all in times of Teams and Zoom. As a result, there are also doubts about the metaverse business model.[16] Nevertheless, more and more companies and recently also public authorities are finding their way into the metaverse.[17] As is generally the case, we will only be wiser once things have taken their course. It may very well be that we are now standing at the beginning of something new, the full potential of which will only become apparent in a few years' time. Just think back to the beginnings of the World Wide Web more than thirty years ago and consider where we are today. It is precisely this longer-term perspective that we should have in mind when we talk today about what might be possible tomorrow.

Against this background, let us take a look at what consequences the metaverse could have

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[13] 2018/C 252/250; Texts adopted – Civil Law Rules on Robotics – Thursday, 16 February 2017 (europa.eu).
[14] See Wagner, 88 Fordham Law Review, 591 (2019).
[15] Paris Arbitration Week Recap: Metaverse-Related Sessions - Kluwer Arbitration Blog.
[16] Example: Zuckerbergs Meta-Vision verkommt zum Mega-Crash - FOCUS online.
[17] Example: Norway Steps Into Metaverse With Decentraland Tax Office | Binance News.

for arbitration law according to international commentators:

1. HEARINGS HELD BY VIDEOCONFERENCE, PLACE OF ARBITRATION

First of all it should be noted that disputes relating to the metaverse are in the future likely to take up much of the time available to national and international arbitral tribunals. This will come as no surprise given that the terms of use of several platform operators already include arbitration agreements. The terms of use of "Decentraland", for example, contain an arbitration agreement stipulating that the place of arbitration is Panama and that all decisions are to be made on the basis of the ICC rules.[18] This is also why Global Arbitration Review is urging the arbitration community to "*get versed in the metaverse!*"

One of the issues being discussed on the international stage is the increase in hearings via videoconferencing, with arbitration also having seen a sharp rise in the number of these as a result of the pandemic. Several sets of arbitration rules[19] as well as the most recent version of the IBA Rules on the Taking of Evidence[20] now contain provisions on this. And the metaverse is likely to reinforce this trend. The same applies to dealing with electronic documents and evidence. In this respect, what applies to the state courts also applies to arbitration.

More so than in court proceedings, the parties in arbitration proceedings might very well in the future wear 360° headsets and conduct hearings in the metaverse. Arbitral tribunals are already more willing to yield to users' desire for anonymity, as we will see below. In contrast to a Teams or Zoom meeting – at least if the camera is switched on – conducting a hearing with 360° headsets would preserve this anonymity, even in the arbitration room (where only the avatar would be visible).

Moreover, there could – at least outside Germany – very well be attempts to sidestep state restrictions by having the place of arbitration in the metaverse. It is quite possible, therefore, that the discussion of delocalised arbitration will gain new momentum in the context of the metaverse. Can the parties choose the "metaverse" or a metaverse-platform as the place of arbitration and in doing so circumvent state restrictions on the validity of arbitration agreements? A hearing in the metaverse, i.e. at the place of arbitration, would then be the logical next step. As it is well-known, there are different opinions on whether delocalised arbitration proceedings exist at all and what the consequences of an arbitral award rendered in such proceedings are. The underlying doctrine of the German Code of Civil Procedure at any rate does not, according to prevailing opinion, provide for the existence of what are known as "*anational*" arbitral awards.[21] The Code applies in principle only if the place of arbitration is in Germany (section 1025(1) ZPO). However, foreign courts are sometimes much more open in this regard and take the view that international arbitral awards do not have to be anchored in any legal system.

2. VALIDITY OF ARBITRATION AGREEMENTS

The discussion on the form and content requirements for arbitration agreements, i.e. on the validity of these agreements, will no doubt be reignited:

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[18] Section 18.2, available at: decentraland.org/terms/.
[19] For example, Article 19.2 LCIA Rules 2020, Article 26(1) ICC Rules 2021, Article 27(2) Swiss Rules 2021.
[20] Article 8(2) IBA Rules on the Taking of Evidence in International Arbitration 2020; preamble definitions: "*Remote Hearing means a hearing conducted […] using teleconference, videoconference or other communication technology by which persons in more than one location simultaneously participate*".
[21] Frankfurt a.M. Higher Regional Court, 11 March 1981, 21 U 172/80, IPrax 1982, 149, 150; Münch in: *MüKo ZPO*, 6th edition (2022), section 1025 ZPO, margin no. 11; Geimer in: *Geimer Internationales Zivilprozessrecht*, 8th edition (2020), margin no. 3718; Wolf/Eslami in: *BeckOK ZPO*, 45th edition (1 July 2022), section 1025 ZPO, margin no. 28.

International commentators have for some time now debated the extent to which the referral of a dispute to a foreign arbitral tribunal in the form of a smart contract is consistent with the statutory form requirements for arbitration agreements laid down in the New York Convention on the Recognition and Enforcement of Foreign Arbitral Awards of 10 June 1958, which also applies in Germany pursuant to section 1061(1) ZPO. Does an arbitral clause coded in a smart contract meet the requirement of a written agreement within the meaning of Article II(2) of the Convention?[22] If the "in writing" requirement is taken at face value, there are certainly doubts about whether an arbitration agreement coded in this way is valid.[23] That said, there are also good reasons for interpreting this provision, which dates back to a time shortly after the Second World War when digitalisation was still an alien concept, broadly and concluding that the form of such an arbitration agreement is valid.[24] This is especially the case if the code underlying the arbitration agreement can be displayed in written form on a computer and printed out.[25] Such a broad criterion could well be applied to arbitration proceedings before arbitral tribunals in Germany as well. Section 1031(1) ZPO does not require written form within the meaning of section 126 BGB, but regards "*forms of communication [...] that ensure documentary proof of the agreement*" to be sufficient. According to the legislator of the current arbitration legislation from 1998, this open-ended wording is, in particular, intended to prevent the exclusion of future communication technologies.[26] What foresight!

The follow-up question is even more challenging: Does all this also apply in a consumer context? Pursuant to section 1031(5), sentence 1 ZPO, arbitration agreements with consumers must in principle – as is generally known – form part of a record personally signed by the parties. An arbitration agreement coded in a smart contract would therefore probably be invalid vis-à-vis consumers.[27] That said, the law already allows the written form to be replaced by the electronic form specified in section 126a BGB (section 1031(5), sentence 2 ZPO). According to this, each contracting party must provide a counterpart with a qualified electronic signature. A smart contract would therefore have to ensure that these prerequisites would be fulfilled. If this were possible from a technical and practical point of view, the metaverse could even become a stepping-stone to more consumer arbitration proceedings in Germany. However, commentators have so far been fairly cautious about the technical feasibility of providing a blockchain with a qualified signature.[28]

There are already first examples of consumer arbitration actions in other countries. Around 100 investors recently filed a consolidated arbitration demand against a US cryptocurrency exchange on the grounds that the exchange had security issues that allowed third parties to access the wallets.[29] It does not take much imagination to picture disputes of this kind possibly also arising in connection with trading platforms that offer their services in the metaverse.

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[22] Is Online Dispute Resolution The Future of Alternative Dispute Resolution? - Kluwer Arbitration Blog.
[23] Newtech.law/en/on-chain-and-off-chain-arbitration-using-smart-contracts-to-amicably-resolve-disputes/.
[24] Is Online Dispute Resolution The Future of Alternative Dispute Resolution? - Kluwer Arbitration Blog.
[25] Cf. UK Jurisdiction Taskforce, Legal statement on cryptoassets and smart contracts, margin no. 161 et seq.
[26] BT Printed Papers 13/5274, p. 36: "*The list in Article 7(2), sentence 2 UNCITRAL Model Law on International Commercial Arbitration (1985), which supplemented Article II(2) New York Convention (1958) (which merely mentions 'letters or telegrams' exchanged between the parties), and is only to be understood as providing examples, takes into account the advances made in communications technology over the past few decades and has been included in all recent legislative reforms (cf. e.g. Article 1021, sentence 1 Dutch Code of Civil Procedure; Article 178 Swiss Private International Law Act and section 577 Austrian Code of Civil Procedure). For this reason alone, it appeared to be necessary to adopt Article 7(2), sentence 2 UNCITRAL Model Law in German law as well.*"
[27] Kaulartz, '*Smart Contract Dispute Resolution'* in Fries/Paal, *Smart Contracts* (2019), p. 76.
[28] Guggenberger, *Handbuch Multimedia-Recht*, 58th supplement (March 2022), 13.7, margin no. 13: "*Conventional transaction networks are not equipped to deal with qualified electronic signatures as defined in section 126 a(1) BGB and it is doubtful whether they are compatible with open networks at all.*" Paulus/Matzke, *ZfPW 2018*, 431, 458: "*Section 126a BGB (and section 130a ZPO) requires the use of an electronic signature, i.e. a cryptographic procedure as well as a secret private signature key, among other things. Although a blockchain as such, for example, also fulfils these two requirements, section 126a(1) BGB additionally stipulates the use of a signature issued by certain certification service providers, i.e. a qualified signature. Moreover, in the case of a contract, section 126a(2) BGB stipulates that the parties must each provide a counterpart with an electronic signature. Therefore, as things currently stand, using a blockchain-based smart contract does not fulfil the electronic form requirements."*
[29] Crypto platform faces claim over "wallet-draining" scam - Global Arbitration Review.

3. DEALING WITH THE DESIRE FOR ANONYMITY

When it comes to dealing with metaverse users' desire for anonymity, too, international arbitration is more advanced in its thinking than the state courts in Germany.

With German law the starting point is clear, at least on the basis of current case law and literature: The lack of capacity to sue and be sued renders the arbitral award voidable, either because of a lack of subjective arbitrability (section 1059(2), no. 1 a) ZPO)[30] or violation of procedural *ordre public* (section 1059(2), no. 2 b) ZPO).[31] The consequence would then be that it simply would not be possible to successfully conduct arbitration proceedings without the parties' real names being identified. On this basis, an arbitral award that only bore the avatar names would not be sure to have validity in Germany and would face (insurmountable) obstacles at the enforcement stage at the latest.

Some other countries take a different view. Arbitration tribunals there have the opportunity to create a dispute resolution model that differs from the state jurisdiction one and gives greater consideration to users keen to preserve their anonymity. One example is the United Kingdom. 2021 saw the publication there of the Digital Dispute Resolution Rules,[32] rules set up with state funding that address in particular the resolution of disputes relating to smart contracts and cryptocurrencies. These dispute resolution rules provide the option of an anonymous procedure in which information about the identity of the parties is basically known only to the arbitral tribunal. Rule 13 states:

> *"The claimant and each respondent must provide details and evidence of their identity to the reasonable satisfaction of the tribunal. If the incorporating text allows for anonymous dispute resolution, or the parties agree, then a claimant or respondent may provide identity details confidentially to the tribunal alone and need not include them in a notice of claim or initial response. In that case the tribunal shall not disclose the identity details unless disclosure is necessary for the fair resolution of the dispute, for the enforcement of any decision or award, for the protection of the tribunal's own interests, or if required by any law or regulation or court order."*

Underlying these rules is obviously the idea that in principle anonymity can still be preserved even in the arbitral award and that it will nevertheless have lasting effect.

Even abroad, however, all of this will presumably have its limits, as also expressed in the cited passage. Provided the award issued in these proceedings only requires enforcement in the metaverse, anonymity may even carry over into the enforcement proceedings, – if, for example, a particular quantity of cryptoassets is automatically transferred as soon as the arbitral tribunal issues its decision.[33] This would be where the underlying smart contracts provide for the transfer to be triggered automatically by the issue of the award. However, enforcement of this kind presupposes that a certain quantity of cryptoassets is assigned to the avatar so that the smart contract can access them. Anonymity in arbitration proceedings will probably end at the latest at the point where an award has to be enforced in the real world,

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[30] Argument that appears to have been used by Hamburg Higher Regional Court, decision of 30 May 2008, 11 Sch 9/07 = BeckRS 2008, 20097.

[31] Argued by Musielak/Voit/Voit, 19th edition (2022), section 1059, margin no. 26.

[32] 35z8e83m1ih83drye280o9d1-wpengine.netdna-ssl.com/wp-content/uploads/2021/04/Lawtech_DDRR_Final.pdf.

[33] Newtech.law/en/on-chain-and-off-chain-arbitration-using-smart-contracts-to-amicably-resolve-disputes/; https://www.scconline.com/blog/post/2022/04/25/smart-contracts-and-blockchain-arbitration-smart-solutions-paving-the-way-for-a-better-dispute-resolution-mechanism/; Kaulartz/Kreis, in Braegelmann/Kaulartz (eds.), *Rechtshandbuch Smart Contracts* (2019), chapter 19, margin no. 27 et seq.; examples can be found at About | Kleros.

with the involvement of the state courts that that generally requires. For such cases, Rule 13 of the Digital Dispute Resolution Rules also provides for the possibility of disclosure of the parties' identity.

4. BLOCKCHAIN ARBITRATION

Another completely new idea in international arbitration is to conduct arbitration proceedings "on chain", i.e. using the blockchain.[34] The concept mentioned above of having the issue of the arbitral award automatically trigger the implementation of a smart contract is just one example of this. The possibilities are virtually endless:

One idea, for example, is for arbitration proceedings to be opened automatically on the basis of arbitration clauses in smart contracts, without any need for the users to do anything at all.[35] For example, a smart contract could automatically start arbitration proceedings if the software detects that a contracting party has not fulfilled its contractual obligations.[36] Potentially, a smart contract could also automatically compile the relevant facts and send them to the arbitral tribunal[37] – at least where these are facts that are contained within the blockchain alone, this may certainly be conceivable. There is also some discussion of the idea of arbitrators being randomly selected from the metaverse community; while this might possibly result in greater neutrality, the downside may be that the parties would have less trust in arbitrators they do not know.[38] And lastly, one could even consider giving the arbitral tribunal the right to intervene directly in the structure of the legal relations, in much the same way as section 894 ZPO allows, in civil procedure law, the presumption of declarations of intent. Section 11 of the above-mentioned Dispute Resolution Rules provides for exactly this:

> *"The tribunal shall have the power at any time to operate, modify, sign or cancel any digital asset relevant to the dispute using any digital signature, cryptographic key, password or other digital access or control mechanism available to it."*

Assuming that an intervention of this kind is even technically feasible, the question that arises in all this is the one posed right at the beginning, i.e. will clauses modified in this way be valid? What we said at the beginning in relation to jurisdiction would presumably apply all the more in the case of arbitration: Here, too, the mandatory limits laid down in section 138 BGB in particular and the provisions governing general business terms and conditions could become relevant in practice, opening up further broad scope for the assessment of validity.[39]

Probably the best-known example for blockchain arbitration is currently Kleros, which describes itself as a "*decentralised arbitration service for the disputes of the new economy*".[40] Kleros uses game theory incentives in order to have crowd-sourced jurors analyse and rule on cases. If a case is referred to Kleros arbitration, a jury is formed. All the jurors review the case and then vote. They receive a financial bonus if they vote in line with the majority. The jurors do not know how the majority will vote. The underlying idea is that each of them tries to vote the way they think the majority would decide the case.[41] The practical relevance of decentralised dispute resolution mechanisms of this kind would seem limited, however, at least for classical commercial arbitration. If at all, they are presumably only an option when the amount in dispute is on the smaller side,[42] e.g. in consumer matters. It is hard to imagine companies putting their high-volume disputes in the hands of crowd-sourced jurors.

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[34] For corresponding considerations in German legal literature Kaulartz/Kreis, in Braegelmann/Kaulartz (eds.), *Rechtshandbuch Smart Contracts* (2019), chapter 19, margin no. 29 et seq.; Märkl/von Rosenstiel, *ZVglRWiss 120* (2021), 257 et seq.
[35] 2018 In Review: Blockchain Technology and Arbitration - Kluwer Arbitration Blog.
[36] 2018 In Review: Blockchain Technology and Arbitration - Kluwer Arbitration Blog.
[37] Kaulartz, 'Blockchain and Smart Contracts' in Briner/Funk, *DGRI Jahrbuch 2017*, 1st edition (2018), margin no. 19.
[38] The Rise of Digital Identities and Their Implications for International Arbitration - JURIST - Features - Legal News & Commentary.
[39] Wagner/Eidenmüller, 'Digital Dispute Resolution', in: *Law by Algorithm,* (Mohr Siebeck 2021), 223 et seq.
[40] www.kleros.io.
[41] See Wiegandt, Journal of International Arbitration 39, no. 5 (2022), 671, 682.
[42] Also Wiegandt, Journal of International Arbitration 39, no. 5 (2022), 671, 685.

Lastly, at international level there is even discussion around the idea of letting artificial intelligence act as an arbitrator.[43] It is at this point at the latest that, in Germany at least, a line is going to be drawn when it comes to the calls for automation, because the German Constitution places the judicial power firmly in the hands of the judiciary (Article 92 German Basic Law). While arbitrators may take the place of judges if the parties so agree, the underlying concept of both the Constitution and the Code of Civil Procedure requires them to be human beings. That apart, as there is basically no way of reconstructing the decision-making processes of artificial intelligence, users are unlikely to trust decisions arrived at in this way.

III. SUMMARY

This brings us to the end of our brief *tour d'horizon*. It will hopefully have flagged one thing above all: Dispute resolution in the metaverse-context is an interesting topic and it's worth following the developments in this area. It may be that 10 years down the line we'll find ourselves saying that actually not much has changed. But maybe – somewhere or another at least – a new world will indeed have opened up, offering new and different methods of resolving disputes.

[43] Marrow/Karol/Kuyan, 74 Dispute Resolution Journal 4 (2020); Kaulartz, '*Smart Contract Dispute Resolution'* in Fries/Paal, *Smart Contracts* (2019), p. 80; Kaulartz/Kreis, in Braegelmann/Kaulartz (eds.), *Rechtshandbuch Smart Contracts* (2019), chapter 19, margin no. 32 et seq.; see also Wagner/Eidenmüller, 'Digital Dispute Resolution', in: *Law by Algorithm,* (Mohr Siebeck 2021), 187 et seq.

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