Germany

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1. LegalTech used in Germany: courts, law firms, arbitration

The term "Legal Tech" is defined in different ways. In Germany, legal tech is sometimes reduced to the legal advice provided by lawyers using innovative technologies.[1] However, the following explanations are based on an expanded concept of legal tech. In this respect, legal tech refers to the use of innovative technologies, including artificial intelligence and blockchain/DLT, to support the legal professions and the judiciary[2].

Promoting the use of artificial intelligence is also the key focus of the German government's policy. The national AI strategy[3] of the German government on how the use of AI and its implications (legal, ethical etc) does not specifically discuss implications related to the use of AI in the justice field, but it is part of the horizontal framework and is therefore of high relevance for the further use of innovative technologies also in the justice system. The strategy sets three main goals:- a.) Making Germany and Europe a leading center for AI and thus helping safeguard Germany's competitiveness in the future (e.g. by developing existing Centres of Excellence for AI at supra-regional level, establishing additional Centres of Excellence for AI, and developing them into a national network of at least 12 centres and application hubs), b.) Integrating AI in society in ethical, legal, cultural and institutional terms in the context of a broad societal dialogue and active political measures (e.g. by elaborating guidelines for developing and using AI systems in a way that is compatible with data protection rules), c.) Foster responsible development and use of AI to

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1 Christina-Maria Leeb, *Digitalisierung, Legal Technology und Innovation* (Duncker & Humblot, 2019) 59.
2 Isabelle Désirée Biallaß in Stephan Oryand Stephan Weth (eds) *Elektronischer Rechtsverkehr* (1st edition, juris Allianz, 2020); Jens Wagner, Legaltech und Legal Robots. Der Wandel im Rechtswesen durch neue Technologien und Kunstliche Intelligenz, (Springer 2020).
3 Die Bundesregierung, 'Künstliche Intelligenz (KI) ist ein Schlüssel zur Welt von morgen.' (Die Bundesregierung), <www.ki-strategie-deutschland.de> accessed 26 Fabruary 2021.

serve the good of society (e.g. by setting up a German observatory for AI). Therefore, high priority is also given to the future use of AI in the judiciary and among the judiciary's communication partners.

There are several possible uses of modern technologies for the judiciary and lawyers:

1.1. Courts

In the **judiciary**, specialized programs offer templates for the different jurisdictions. These range from simple court orders (such as for scheduling a hearing, inviting witnesses) to text modules for judicial decisions on the case itself. The electronic text modules were mostly created by external developers, but also offer the option of adapting input masks or text modules to individual requirements or supplementing them with free text. Due to the constitutional principle of judicial independence, the judge is free to develop further templates himself for his own work, provided that he has the underlying knowledge in this respect.

Electronic programs (such as Judica in the North Rhine-Westphalian judiciary or in the states of the forumSTAR network) and calculation programs also support judges in the application of certain legal norms. For example, judges who must decide on family court disputes have access to complex calculation programs (e.g., for calculating alimony or pension equalization). Special programs are also available for other legal calculations - for example, in the context of legal aid proceedings or in the calculation of attorney's fees and court costs. Programs can also be used to determine the local jurisdiction of a court[4]. The support provided by information technology extends to suggestions for substantive legal decisions. However, it is legally doubtful to what extent the judge may have automatic decision proposals submitted to him by an automatic system. If, because of high work pressure, a judge feels compelled to accept proposed decisions without closer consideration, this could be seen as an attack on judicial independence. Further (constitutional) concerns arise from the fact that proposed decisions are not transparent for the judge due to complex programs. However, transparency is not only important for the

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4 Abschlussbericht der Länderarbeitgruppe 'Legal Tech: Herausforderungen für die Justiz'(Schleswig-Holstein, 2019), <https://www.schleswig-holstein.de/DE/Landesre gierung/II/Minister/Justizministerkonferenz/Downloads/190605_beschluesse/TOPI _11_Abschlussbericht.pdf;jsessionid=403E9295A2AF9CB0FBA9909024CD2AFA.d elivery2-replication?__blob=publicationFile&v=1> accessed 26 February 2021.

judge himself, but also for the parties to the proceedings: they, too, must be able to understand judicial decisions. Therefore, it is also important that the judge can justify his decisions and does not just have to refer to suggestions made by a non-transparent AI-supported program.

Less legally problematic is the use of automatically operating programs in the service offices of the courts. Automation also helps judicial officers, especially in the processing of register matters. Registers (such as the commercial register, the register of cooperatives and partners, the insolvency register, the land register, the criminal register) are the responsibility of the judiciary in Germany. Other registers (such as the register of wills and the central register of precautionary measures) are the responsibility of the Federal Chamber of Notaries, but notaries are also integrated into the German judicial system. Entries, changes and deletions in the registers rely heavily on IT automation, although judicial officers are still involved in decisions. Since 2007, communication with most registry courts has been shifted to the so-called "electronic court and administrative mailbox -EGVP-", an encrypted platform with an integrated signature function.

1.2. Law firms

The lawyer can enter individualized texts into dynamic document templates, sometimes assigning individual facts to predefined categories or entering answers in selection boxes. In this way, the lawyer can create independent contract texts or lawyer's briefs. In doing so, he can access databases in which he will find pre-formulated and adaptable texts for various case scenarios. Programming skills are not required, but knowledge of how to use the document generator is.

Expert systems (Legal Process Automation) help lawyers to run through recurring legal review steps in a semi-automated manner for the purpose of advising clients, starting with simple deadline and fee calculations, and extending to more intensive subsumption of frequent case constellations under the appropriate legal norms. In addition, lawyers provide corresponding systems on online platforms on which clients must answer predefined questions themselves and the answers result in an automatic legal evaluation for which a fee is charged.

Furthermore, the number of legal tech platforms operated by companies is growing in Germany, which citizens can use to have legal rights checked in various standard situations without having any legal knowledge

of their own.[5] For example, there are online platforms for calculating possible compensation in the event of flight cancellations or delays, the permissible amount of an apartment rent, the amount of social welfare claims, the legality of terminations of employment contracts or the calculation of claims for damages in traffic accidents. Simple legal questions are thus answered quickly and reliably according to a standardized model without the need for court proceedings, or if court proceedings are still required, these proceedings are prepared.

There are no specific regulations on legal tech applications in Germany. However, the German Legal Services Act (Rechtsdienstleistungsgesetz) only permits individual legal advice if it is provided by licensed lawyers.

The question of the admissibility of legal tech platforms therefore depends on whether the platforms have the character of legal advice within the meaning of § 2 (1) of the Legal Services Act. [6] The Federal Court of Justice recently ruled that a platform which could be used to calculate the permissible amount of apartment rents did not constitute an impermissible legal service because the legal platform merely enabled an initial - rough and preliminary - assessment of claims.[7]

In some cases, contract texts can be drawn up at www.smartlaw.de.

A working group of the German Bar Association (DAV) is conducting an in-depth dialogue with its members, 63,000 lawyers, to analyze the current use and potential use of AI, but also with AI providers. Options are changes in BRAO (act on the legal profession) and RDG (legal services act).

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5 See Wagner (n 2) 2; Isabelle Biallaß in: Ory/Weth, jurisPK-ERV Band 1, 1st. edition., chapter 8, as of 28.08.2020, para. 10. Examples: <www.flightright.de> accessed 26 February 2021; <www.fairplane.de> accessed 26 February 2021; <www.helpcheck.de> accessed 26 February 2021; <www.geblitzt.de>; accessed 26 February 2021; <www.hartz4widerspruch.de> accessed 26 February 2021; <www.myright.de> accessed 26 February 2021; <www.wenigermiete.de> accessed 26 February 2021.

6 Examples: www.flightright.de, www.fairplane.de, www.helpcheck.de, www.geblitzt.de, www.hartz4widerspruch.de, www.myRight.de; www.wenigermiete.de
„ Legal service is any activity in concrete third-party matters as soon as it requires a legal examination of the individual case". However, § 10 para. 1 RDG allows certain institutions to provide legal services if they act on the basis of special expertise and are, for example, registered as debt collection service providers with the competent authority.

7 Judgement of the Federal Supreme Court (BGH) from 27 November 2019, VIII ZR 285/18, NJW 2020, 208.

1.3. Arbitration

Non-governmental dispute resolution platforms (online dispute resolu-
tion) have existed for a long time, mostly offered by companies active
in the field of online commerce.[8] Most of these are American companies,
but they also offer their services in Germany. Blockchain arbitration, for
example via Kleros[9], is also used in Germany. There has been no specific
development in Germany in this regard.

*2. Blockchain and DLT in government systems. Whether there are judicial
systems or other registers using blockchain. Legal provisions linking a
blockchain entry to a legal presumption.*

Currently, no blockchain and DLT are used in the jurisdiction of the
judiciary in Germany. However, there are projects in which the use of
blockchain and DLT is being examined for the benefit of judicial applica-
tions and for which pilot applications already exist:

A project aimed at assessing whether supplementary integrity assurance
can be provided for the land register database by means of blockchain
technology.[10]

In another cooperation project of the Federal Chamber of Notaries
with the Bavarian State Ministry of Justice and as a technical partner the
Fraunhofer FIT in the judiciary were examined potentials of blockchain
regarding an **electronic validity register**.[11] The project aimed to examine
the possibilities to establish a public electronic register confirming the va-
lidity status of documents (valid/revoked) based on blockchain technology.
Two examples/uses cases to be examined in detail are the certificate of
inheritance and the notarized certificate of authority. This has resulted in

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8   Wagner (n 2) 37, refers to the examples of eBay and PayPal.
9   ibid. 34.
10 European Commission, 'Study on the use of innovative technologies in the
    justice field – Final Report' (2020) 120, <https://op.europa.eu/en/publication-
    detail/-/publication/4fb8e194-f634-11ea-991b-01aa75ed71a1/language-en> accessed
    25 February 2021.
11 <https://www.edvgt.de/wp-content/uploads/2020/10/Protokoll_EDVGT_2020_Bl
    ockchain-not-Vollmacht.pdf> accessed 26 February 2021; see also the presentation
    of the Federal Chamber of Notaries at <https://www.egovernment-wettbewerb.de/
    praesentationen/2020/Blockchain_fuer_notarielle_Vollmachten_und_Erbscheine.
    pdf> accessed 26 February 2021.

an operational prototype of a central register based on blockchain, which enables the simple verification of the validity of documents (for example, via smartphone), such as the registration of a notarized power of attorney in the register from scan to upload, the verification of the validity of powers of attorney from the user's perspective, and the administration of a power of attorney. Now the legal basis for its use in real operations is to be created, which does not yet exist in Germany.

According to the German Bar Association the use of blockchain/DLT technology stands in conflict with some legal topics. For instance, the protection of minors under §§ 107, 108 German Civil Code (BGB) would have to be extended. And the correction, deletion (including the right to forget) and blocking of personal data (Art. 15, 16 and 17 GDPR) is not technically possible because all transactions are interlinked.[12] However, there are also technical and legal proposals to solve this problem.[13]

3. Electronic communication with the court. Legal basis, method of communication, transmission of documents.

a. The procedural codes prescribe **certain formal contents for the communication of litigants** with the judiciary, in particular for pleadings by attorneys initiating proceedings. Section 130(1) of the Code of Civil Procedure (ZPO), for example, requires the specification of the digital post office box to which the court may transmit information. § 2 Electronic Legal Transactions Ordinance (ERVV) also stipulates that the electronic document must be transmitted to the court in printable, copyable and, as far as technically possible, searchable form in PDF file format. Furthermore, the electronic document shall be accompanied by a structured machine-readable record in XML file format corresponding to the definition or schema files specified in § 5. The XML structuring of lawyers' briefs ("Xjustice") has already been possible for 16 years -

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12 The Report of the European Commission: European Commision, 'Study on the use of innovative technologies in the justice field. Final report" (Publication Office European Union 2020) "Study on the use of innovative technologies in the justice field", (Brussels, September 2020) 167.

13 Dariusz Szostek, Blockchain and the Law (1 ed., Nomos 2019) 108; Anne-Sophie Morand 'So kollidiert die DSGVO mit der Blockchain' (Netzwoche, 1 September 2020) <https://www.netzwoche.ch/news/2020-09-01/so-kollidiert-die-dsgvo-mit-der-blockchain/0lt0> accessed 25 February 2021.

albeit on a voluntary basis. ("Xjustice"[14]) has already been possible for 16 years - albeit on a voluntary basis. For electronic communication, the procedural codes prescribe a so-called writ-replacing form[15]. Here, potential plaintiffs can choose between various written form substitution options. One option is to provide the electronic with a qualified electronic signature in accordance with the eIDAS Regulation[16] of the person responsible and send it to the electronic mailroom of the court. There, the qualified electronic signature is validated and a note to that effect is included in the court file.

b.   Another option is to provide the document with a simple signature and submit it to the court via a **secure transmission channel**. The law specifies secure transmission channels in detail: using the mailbox and dispatch service of a so-called **De-Mail account**, which can be set up by any citizen with a mail address valid for life, provided that the sender is confirmed as a legal user by the De-Mail provider with an electronic signature when sending the De-Mail message. Authorized attorneys, notaries, and public authorities can also communicate with the courts via **special electronic mailboxes** without having to affix a qualified electronic signature to the documents sent. These special mailboxes have been established legally based (for attorneys by the German Federal Bar). The electronic mailboxes are intended to enable secure electronic communication with the judiciary that cannot be viewed from the outside; this is then also considered a "secure transmission channel". However, lawyers can also use the special electronic mailbox among themselves. Since January 1, 2018, Section 31a (6) of the Federal Lawyers' Act (Bundesrechtsanwaltsordnung) has imposed a so-called passive use obligation on lawyers: they must have the technical equipment required for P.O. boxes ready and take note of deliveries and accesses of communications via the P.O. box. By January 2022

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14   XJustiz (XML Schemata for the Judiciary) forms the basis for the exchange of procedural data in judicial proceedings and is laid down in organizational-technical guidelines that were already released for use throughout Germany in 2005. It consists of a basic module with generally required data (e.g., court name, file number) as well as specialized modules with subject-specific data (e.g., criminal proceedings, dunning procedures, registers).

15   § 130a Code of Civil Procedure, § 46c Labour Court Act, § 55a Code of Administrative Court, § 52a Code of Fiscal Court, § 65a Code of Social Court, § 32a Code of Criminal Procedure.

16   (n 996).

at the latest, attorneys, notaries and public authorities are required to communicate exclusively electronically with the courts.[17]

c. In addition, the Federal Ministry of Justice and Consumer Protection may, by statutory order, introduce electronic forms and require that all or part of the information contained in the forms be transmitted in structured machine-readable form.[18] The forms shall be made available for use on a communication platform on the Internet to be specified in the statutory order. The forms may be completed electronically and sent to the courts electronically. In doing so, the use of the electronic ID of the identity card or the electronic residence permit for foreigners shall be attached for the identification of the form user. Transmission of an electronic form by the user to the court together with identification by an ID is also considered to replace the written form, so there is no need to additionally affix a qualified electronic signature. The transmission of documents from the courts back to the user is in principle carried out by the same electronic means as for filing. However, so far only lawyers, notaries and public authorities can be addressed electronically by the courts via special electronic mailboxes. It is planned[19] to set up a special electronic mailbox for citizens, companies, and other professional groups on a statutory basis, which can then be used both for submitting official documents to the courts and for court documents to citizens and organizations without having to affix a qualified electronic signature. Finally, it is also planned to use digital user accounts, which are currently being set up for citizens and companies as part of the administrative portal network of the federal and state governments in Germany, for document transmission to the

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17 § 130d Code of Civil Procedure (ZPO), § 46d Labour Court Act (Arbeitsgerichtsgesetz), § 55d Administrative Procedure Code (Verwaltungsgerichtsordnung), § 52d Fiscal Court Act (Finanzgerichtsordnung), § 65d Social Court Act (Sozialgerichtsordnung), § 32d Criminal Procedure Code (Strafprozessordnung).

18 § 130d Code of Civil Procedure (ZPO), § 46d Labour Court Act (Arbeitsgerichtsgesetz), § 55d Administrative Procedure Code (Verwaltungsgerichtsordnung), § 52d Fiscal Court Act (Finanzgerichtsordnung), § 65d Social Court Act (Sozialgerichtsordnung), § 32d Criminal Procedure Code (Strafprozessordnung).).

19 Government Draft of an Act on the Expansion of Electronic Legal Communication with the Courts dated 10 February 2021 (Regierungsentwurf eines Gesetzes zum Ausbau des elektronischen Rechtsverkehrs mit den Gerichten und zur Änderung weiterer prozessrechtlicher Vorschriften vom 10 Februar 2021), <https://www.bmjv.de/SharedDocs/Gesetzgebungsverfahren/Dokumente/RegE_Ausbau-ERVV.pdf;jsessionid=B31215410FC393DA7D68555E8429DE1F.2_cid289?__blob=publicationFile&v=2> accessed 25 February 2021.

courts as well as for electronic returns from the courts to citizens and companies. To log in to the user account, the citizen must identify himself electronically with the ID; for companies, the use of the electronic tax ID is planned.

4. *Online court proceedings. Are they acceptable, in what way, the way of communication, what information systems are used? How is the judgment issued? Is the connection from the court or can it be made using a private computer?*

In Germany, there are no fully **virtualized online trials** yet. However, the lockdown phase of the COVID-19 pandemic and the requirement to reduce physical contact with people have intensified efforts to use videoconferencing systems for judicial proceedings as well. As early as 2002, § 128a of the German Code of Civil Procedure (ZPO)[20] has allowed parties to proceedings to participate from a location other than the courtroom and to take evidence with distant witnesses or experts. The decision to enable video transmission is at the discretion of the court, so the parties to the proceedings cannot force such a way of conducting the proceedings. The discretionary decision on the use of video conferencing systems takes into account, in particular, the motives expressed by the applicant for the video conference (for example, medical reasons, but also financial or time-related interests) as well as, from the court's point of view, wishes for acceleration and concentration. Under German procedural law, however, the judge cannot conduct the hearing from his home study but must be present in the courtroom during the videoconference hearing. The constitutional principle of publicity of the court hearing is thereby established by transmitting the procedural actions via videoconference to the courtroom at the place of the hearing. Video conferencing leads to a host of legal, organizational, and technical issues. For example, it must also be clarified whether data protection regulations allow cloud solutions or require on-premises solutions.

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20 This provision shall apply by way of reference norms in the other procedural codes (pursuant to § 46 (2) of the Labour Court Act (Arbeitsgerichtsgesetz - ArbGG), § 4 of the Insolvency Code (Insolvenzordnung - InsO) and § 15 of the Voluntary Jurisdiction Act (Gesetz über Angelegenheiten der Freiwilligen Gerichtsbarkeit - FGG) as well as in § 110a of the Social Court Act (Sozialgerichtsgesetz) and § 102a of the Administrative Court Code (Verwaltungsgerichtsordnung).

During the critical pandemic phase 2020 , there was a legal option in Germany from May 29 2020 to 2021 in labor court[21] and social court[22] proceedings, to allow a volunteer judge "in the event of an epidemic situation of national significance" to participate in oral proceedings in the courtroom from another location by video conference if it is unreasonable for him or her to appear in person at the courtroom due to the epidemic situation Video participation by the volunteer judge was also possible for the deliberation, voting and pronouncement of the decision, provided that the confidentiality of the deliberation was ensured.

It is conceivable that the online participation of judges in oral proceedings, which is legally only temporarily made possible by the law, could also be provided for permanently and also in proceedings of other jurisdictions outside of epidemic situations of national scope, and possibly also in certain situations to grant judges the possibility, e.g., of conducting a virtual court hearing from their home office. However, the question of how the public is to be involved would then have to be clarified. There are scientific studies on this subject that advocate the possibility of Internet transmission - but with strict adherence to data protection principles and IT security requirements.[23]

So far, the law has not explicitly specified which video systems are to be used and how private systems can be integrated. However, judicial responsibility for compliance with data protection principles and IT security means that judges cannot use their private devices. However, the litigants who are allowed to participate in the court proceedings via videoconference are not provided with court-owned hardware. Judicial decisions are not yet delivered via videoconference. However, decisions can be made electronically and delivered to the litigants electronically.

The courts in Germany are currently being equipped with the electronic court file. From Jan. 1, 2026, the file must be introduced in all courts.[24]

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21 via the outlined § 46 para. 2 Labor Court Act (AGG) in conjunction with § 128a of the Code of Civil Procedure (ZPO).
22 § 110a Social Court Act (SGG).
23 Anne Paschke, *Digitale Gerichtsöffentlichkeit* (Duncker & Humblot, 2018) 412.
24 Gesetz zur Einführung der elektronischen Akte in der Justiz und zur weiteren Förderung des elektronischen Rechtsverkehrs dated 5. 7. 2017, Bundesgesetzblatt I 2017, 2208.

5. AI in the justice system and automatic decisions.

a. Artificial intelligence has been used only to a limited extent in the German **justice system**. Electronic file systems partially support the recognition of metadata of documents received by the court, such as document type, sender or creation date in documents (so-called metadata extraction) and considerably simplify the work processes in the judiciary, because documents can thus be automatically assigned to judges and existing files. However, this is not yet being used across the board. AI helps in the processing of mass proceedings by enabling trained systems to systematize and structure extensive documents, thereby making them easier to access for human processors.[25]

b. Tools based on artificial intelligence are already being used to some extent **in criminal investigations**, for example to identify child pornography images among other pornographic or non-pornographic pictures or to identify hate crime on social media[26] (see below).

c. There is a largely automated procedure in German procedural law, the **order for payment procedure**, which involves the assertion of mostly uncontested monetary claims. There are standardized forms for use in simplified proceedings - i.e., applications for an order for payment (Mahnbescheid) or order for enforcement (Vollstreckungsbescheid) in money claims. These forms must be used. If an application is not filed on the appropriate form within the deadline, it will be rejected as inadmissible. The applicant has various options for conducting the order for payment procedure electronically. He or she can use the eID function of his or her ID card for authentication and identification and enter the data directly into the prescribed masks, which are then formally checked by software, thus largely ruling out incorrect entry. The notice is sent either by affixing a qualified electronic signature or (if a lawyer is acting) without a signature via a special electronic mailbox that is electronically linked to the court. The order for payment is issued automatically. The payment order court only checks the information for completeness, but not for accuracy, which makes electronic processing relatively easy. Although the judicial officer officially bears responsibility for the procedure, in fact the judicial officer relies on the result of the automatic check. If an objection is filed after the automatic

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25 <https://www.edvgt.de/wp-content/uploads/2019/10/Protokoll-EDVGT_Algorith men-Justiz.pdf> accessed 25 February 2021.

26 (n 12) 121.

issuance and service of the order for payment, the order for payment procedure is deemed to be terminated. To pursue the claim further, contentious proceedings must be opened before the civil court, but these are not handled automatically; instead, they are handled before a (human) judge.

d. The **European order for payment procedure**, which is similar to the domestic order for payment procedure and can be used in Germany across borders in relation to some EU member states, is also based on forms that can be filled out electronically and translated into all official EU languages and on digital transmission. Here, too, the procedures largely manage without human intervention. The same applies to the small claims' procedure. For fully automated processing without human involvement, a new process standard would have to be created - as is already provided for in the Administrative Procedure Act[27] for the issuance of automatic administrative acts.

e. Partially automated processes are based on so-called **Model Declaratory Proceedings**. According to § 606 (1) of the German Code of Civil Procedure (ZPO), qualified consumer association can use the action to request a determination of the existence or non-existence of factual and legal prerequisites for the existence or non-existence of claims or legal relationships between consumers and an entrepreneur. When the action is admitted, individual consumers can join the lawsuit by entering their name and address in a register of actions, which is set up by the Federal Office of Justice in accordance with § 609 (1) of the German Code of Civil Procedure (ZPO). The entry is made exclusively electronically without incurring any financial expense. Only the participating consumers benefit from the effect of the action while being bound by the resulting model declaratory judgment.

6. *The plans for the future.*

The proposals developed by the working group "Modernization of Civil Procedure", consisting of the presidents of the Higher Regional Courts, the Court of Appeal, the Bavarian Supreme Regional Court and the Federal Court of Justice, go beyond the current legal possibilities.[28]

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27 § 35a Administrative Procedure Act (VwVfG).
28 Thomas Dickert, 'Modernisierung des Zivilprozesses Diskussionspapier' (justiz.ba yern.de) <https://www.justiz.bayern.de/media/images/behoerden-und-gerichte/ob

a. According to this, (in general) the possibility of a "**virtual trial**" by video conference is to be created, in which the court does not have to be present in the courtroom either. The public is to be included by the fact that the hearing is transmitted simultaneously in picture and sound to a room designated by the court. So the proposal is not aimed at the court itself working in the home office and process being completely virtualized

Other proposals involve new techniques, such as using voice recognition to create the record of proceedings, reviewing the record on a monitor in the courtroom, and then filing the record electronically.

b. The **active obligation** to use electronic communication channels is to be **extended** to publicly appointed experts, publicly appointed interpreters, tax consultants, auditors, insolvency administrators, professional advisors as of 01.01.2026.

c. The **fax** is to be abolished in the future for judicial communication and replaced by purely electronic legal communication.

d. A legally regulated electronic "**message room**" for judicial communication is to ensure faster and more up-to-date communication between the court and the parties to the proceedings but is initially to be used for the informal exchange of electronic messages with lawyers and other parties to the proceedings, e.g., for making and rescheduling hearing dates or exchanging settlement proposals. In the future, it will be expanded to include the reliable and rapid exchange of electronic documents between parties and the court.

e. An **accelerated, complete online procedure** with electronic communication by means of an intelligent input and query system for amounts in dispute up to €5,000 is to be introduced and centralized at certain courts. This type of procedure is primarily intended for mass dispute proceedings between plaintiff consumers on the one hand and defendant companies on the other. Short deadlines and the limitation of oral hearings to exceptional cases, if necessary, video with evidence or telephone conferences, are intended to speed up the process.

f. The **structuring of the documents of the parties to the proceedings with the help of XML files** shall be expanded: In civil proceedings, the subject matter of the dispute is to be represented by a common "basic document", the design and technology of which are defined by standards and which is binding in the legal proceedings, in which the

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erlandesgerichte/nuernberg/diskussionspapier_ag_modernisierung.pdf> accessed 26 February 2021.

complete party submissions in factual and legal terms, are presented side by side in the sense of a table of relations. Supplements of the process parties are inserted adjusting place. At the end of the hearing, this document should then be binding for the judge to record the facts of the case.

g. The **procedure for determining court costs and attorneys'** fees shall be fully automated, incorporating elements of artificial intelligence, and a legal basis for this shall be created in the procedural laws.

h. The Commission of the federal Ministry of justice and the representatives of the federal states for information technology in the judiciary (workgroup use of cognitive systems in the judiciary) has established a project for the use of artificial intelligence in the creation of the electronic, fully searchable land register.[29] This project aims to automate the analysis of existing PDF files with **land register information**. Afterwards the tool will fragment the file and assign the values to a database field in order to be able to store the contents in a structured manner in a database. In terms of technology, the solution is based on expert systems and rule-based systems. The PROSAR-AIDA tool can help where classification and data extraction is needed from unstructured and semi-structured documents, especially when the inherent logic of the documents is extremely complex.

i. Furthermore the Commission for information technology in the judiciary in a project (January 2020 to October 2021) will examine and identify the specific demands and requirements needed for the **anonymization/pseudonymization of court decisions**. The aims are to be able to produce a corpus of anonymized/pseudonymized court decisions, in which the information and details requiring anonymization will be marked and annotated. Sometimes a pseudonymization is preferable, because an anonymization complicates the readability and the capture of the meaning of a document.[30] The solution will be based on expert and rule-based systems and natural language processing.

j. The number of cross-border legal proceedings is growing. Therefore, the need for automatic translations is also increasing. Therefore, a project of the Commission for information technology in the judiciary is examining the possibility of a **Legal Translation Machine Service**. This project will provide a secure machine translation service so as to improve the process efficiency and acquire insights from available data,

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29 (n 12) 190.
30 Wagner (n 2) 25.

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reporting and visualization (e.g. dashboards). In terms of technology, the solution is based on machine learning and expert systems and rule-based system technology.[31]

k. There is great potential for the use of artificial intelligence in the criminal investigation process, in which the police and prosecutors work together. The Central Cybercrime Department of North-Rhine-Westphalia started a research project to fight child pornography with methods of AI[32] . The main objective is to identify child pornography images among other pornographic or non-pornographic pictures. A manual examination would take a very long time. With the help of AI (machine learning) it is possible to reduce the time needed and to increase efficiency.

l. Also the Germany Central Cybercrime Department of North-Rhine-Westphalia together with university experts started another project in 2013 to identify hate crime on social media. The AI tool will include a scoring system **for hate crime identification**. The project rates on-line postings and the probability that they will be qualified as illegal offences. In terms of technology, the solution is based on machine learning.

m. Also the Germany Central Cybercrime Department of North-Rhine-Westphalia deals with the **future criminal court room for Criminal Proceedings**[33] . To save time and expenses, the project aims to create modern court rooms which allow videotaping and speech-to-text recognition. All participants will receive a transcription and the audio file embedded. 3D-projection of crime scenes is under consideration. [34]

n. In another project of Central Cybercrime Department of North-Rhine-Westphalia possibilities of a **hybrid cloud for document** and **electronic evidence** are examined.[35] Regarding overall project results according to the current state of research, in the first stage the AI fulfils the demand placed on it for the ability to differentiate and recognize deconstructed image content in a hybrid cloud scenario. The hybrid

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31 (n 12) 121.
32 Start was in April 2019.
33 (n 12) 45.
34 Redaktion beck-aktuell 'EDV-Gerichtstag sieht Fortentwicklung der Justiz-IT als wesentliche Zukunftsfrage' (beck-aktuell Heute im recht, 20 September 2019). <https://rsw.beck.de/aktuell/daily/meldung/detail/edv-gerichtstag-sieht-fortentwicklung-der-justiz-it-als-wesentliche-zukunftsfrage> accessed 26 February2020.
35 (n 12) 146.

cloud concept in this case could be reused in document and electronic evidence (emails) investigation.

o. Finally, there are also various fields of application for AI-based **interactive chatbots** in the judiciary. For example, citizens can use a developed chatbot "Justitia" to file criminal charges at a low threshold, for example on the topic of hate and incitement on the Internet, by requesting the necessary information from the person filing the complaint, retrieving related data from social platforms, and taking screenshots to preserve evidence for checking the initial suspicion.[36] However, chatbots are also to be used in the civil justice system and can be combined with robotic process automation. To this end, an application for applying for a certificate of inheritance was presented at the German IT Court Day 2020. [37]

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36 (n 34).
37 See presentation at <https://www.edvgt.de/wp-content/uploads/2020/11/2020010 -EDVGT-Praes.pdf> accessed 26 February 2021.