



What can i help you with?

Securing patent protection for artificial intelligence (AI) software applications in Germany

An example in the field of chatbots and natural language processing

There is much debate about whether the law is keeping pace with advances in technology in general, and artificial intelligence in particular.

Taking an example in the field of chatbots and natural language processing, Olaf Ungerer from our Munich office describes the stages and key considerations in prosecuting an AI-based patent application in Germany.

To be eligible for patent protection in Germany:

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... a concrete technical object needs to be solved by a technical means in a non-obvious manner. ”

Natural language processing and chatbots

Rather than writing about the patent prosecution process in the abstract, we have taken the example of natural language processing, a pertinent field of artificial intelligence (AI) research.

A chatbot (also known as a talkbot, chatterbot, bot, IM bot, interactive agent, or artificial conversational entity) is a computer program which conducts a conversation via auditory or textual methods.

Such programs are often designed to convincingly simulate how a human would behave as a conversational partner.

Chatbots are typically used in dialog systems for various practical purposes including customer service or information acquisition. Some chatbots use sophisticated natural language processing systems, but many simpler systems scan for keywords within the input, then pull a reply with the most matching keywords, or the most similar wording pattern, from a database. Some more recent chatbots also combine real-time learning with evolutionary algorithms that optimise their ability to communicate based on each conversation held.

Still, there is currently no general purpose conversational artificial intelligence, and some software developers focus on the practical aspect, information retrieval.

Today, most chatbots are either accessed via virtual assistants such as Google Assistant and Amazon Alexa, via messaging apps such as Facebook Messenger or WeChat, or via individual organizations' apps and websites.

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Typical patent applications and their background technology

Typically, such patent applications relate to apparatuses, methods and systems for processing digital dialogue (e.g. search inputs) via server components with the help of artificial intelligence (AI). The claimed technical aspects of such patent applications can be directed to a network-based man-machine communication system.

In such systems, different kinds of dialog agents and dialog applications are conventionally used which can connect digital devices via a plurality of speech and avatar-based interfaces.

In man-machine communication, which is technical without doubt, it is desirable to organize activities and transactions effectively in connection with communication paths and results.

To be eligible for patent protection in Germany, a concrete technical object needs to be solved by technical means in a non-obvious manner.

First-instance examination procedure before the German Patent and Trademark Office

With such types of inventions, German patent examiners try to make their life easy and tend to argue – often in contrast to the case law of the Federal Supreme Court - that the claimed subject matter is not more than a program for data processing arrangements as such and is therefore excluded from patent protection (§ 1 paragraphs 3 and 4 PatG).

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Because the German patent law excludes programs for data processing arrangements as such from patent protection, the claimed teaching must rather include instructions which serve to solve a concrete technical problem by technical means.

Now, they allege that such instructions cannot be derived from the claimed subject matter. Rather, the derivable instructions, which shall be executable, correspond to a process of the dialog and the structuring of data, which can be allocated to the human mental activity, implemented by plain data processing (software means as such in 'devices'). Thereby, better representability of a dialog (in a data structure) may probably be achieved; however, a concrete technical problem is neither solved by these means nor by the corresponding devices in a causal manner.

In such cases, however, patent examiners often misinterpret the case law of the Federal Supreme Court, when they state that the subject matter of an apparatus claim constitutes a program for a data processing arrangement as such. Typically, they then refer to the supreme court decision *Webseitenanzeige* where a method of producing a representation for retrieving an information page called from the start page of an information provider and meanwhile left was claimed. Surprisingly, they argue that a program for data processing arrangements as such could as well be seen in software means claimed as 'devices' in an apparatus claim. There is however no support for such arguments in the above Supreme Court decision *Webseitenanzeige* nor in other pertinent case law of the Federal Supreme Court.

Rather, in reasoning points of Supreme Court decisions typically cited by the patent examiner, the Federal Supreme Court basically found that the subject matter of an apparatus or system claim which corresponds to a method claim cannot be considered as a program as such, but may be rendered obvious by the cited prior art. However, this means that an apparatus or system claim cannot be rejected for being excluded from patent protection (§ 1 paragraphs 3 and 4 PatG). Here, the patent examiner needs to present arguments as to why the claimed subject matter lacks novelty or is rendered obvious by the cited prior art.

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Second-instance appeal procedure before the Federal Patent Court

If a decision of rejection by the patent examiner is appealed to the Federal Patent Court, the Senate often tries to squeeze claim features so as to arrive at a simplified interpretation involving plain and simple programming steps.

The aim of the judges is to reduce the claimed technical features to an optimization of a programming routine, e.g. by selecting a better-suited software routine. It is therefore advisable to draft the claim so that the claimed data transmission or analysis is done by different components connected via a communication network. Consequently, the Federal Patent Court can no longer argue that the claimed process is performed within an apparatus by simply selecting or initiating routines of a pure software program.

If there is no chance to convince the usually responsible 17th Senate of the Federal Patent Court, there is an option to request admission of a 'full' appeal to the Federal Supreme Court which is the highest court for patent cases.

Patent appeals (and all intellectual property appeals) are heard by the 10th Senate (panel) of the Federal Supreme Court, which explains why the case codes begin with 'X'. However, a 'full' appeal will only be admitted by the Federal Patent Court if the Senate holds the view that the case relates to specific matter which has not been decided before by the Federal Supreme Court or for which the caselaw of different senates of the Federal Patent Court diverges. Therefore, the chances for admittance of a full appeal to the Federal Supreme Court must be judged low in typical AI-related cases rejected for being excluded from patent protection (§ 1 paragraphs 3 and 4 PatG).

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Third-instance appeal on a point of law

What now remains is an appeal on a point of law, which is restricted to procedural errors only.

However, in view of the fact that often the reasons for rejecting main and/or auxiliary requests by the Federal Patent Court were not explicitly stated during the hearing, there is a certain chance that the right to be heard could have been violated. However, it is important to note that the decisive question here is not whether the decision of the Patent Court was wrong, but rather whether the right to be heard was violated. That's the crux of this 'limited' appeal.

According to the case law of the Federal Supreme Court, the right to be heard is violated if, for example:

- despite careful process management it was not foreseeable for a party, on which considerations the Patent Court will base its decision (BGH, decision of 28 December 2012 – X ZB 6/11, recital 10 – Sorbitol; decision of 26 August 2014 – X ZB 19/12, recital 11 – *Kommunikationsrouter*; decision of 15 April 2010 – Xa ZB 10/09, recital 22 – *Walzformgebungsmaschine*);
- the Patent Court intends to deviate from its former judgement in a decisive question (BGH, decision of 16 June 2011 – X ZB 3/10, recital 11ff – *Werkstück*);
- it is apparent that a party has wrongly understood a given instruction (BGH, decision of 25 June 2002 – X ZR 83/00); or
- a party could assume, based on a given instruction, that the concerns expressed therein have been removed by the party's supplemental submission (BGH, decision of 5 November 2003 – VIII ZR 380/02).

This needs to be checked by a lawyer who is admitted to the Federal Supreme Court as to the chances of success for the appeal on a point of law.

The Federal Supreme Court may decide either to reject the appeal on a point of law or to set aside the appealed decision and remit the case to the Federal Patent Court where the initial appeal proceedings are to be continued.

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Strategic side measure

A divisional application can be filed proactively without paying any fees before a decision on the appeal is made.

It should be noted that during the whole appeal procedure the divisional application must be filed with the German Patent Court (cf. decision BPatG 20 W (pat) 7/16 dated 1 February 2017). Thereby, the option of keeping an application pending irrespective of the outcome of the Supreme Court proceedings can be granted free of charge. As the fees need to be paid within a term of 3 months after the filing date, the proactive divisional application should be filed when it can be estimated (e.g. based on query at the Supreme Court) that the decision will be made within this term.

A divisional application can only be filed as long as the parent application is still pending. When the three-month term has expired without payment of the fees, the divisional application is deemed withdrawn.

Filing a second divisional application may then be considered if the Supreme Court hasn't decided yet. Thereby, the case can be kept pending, even if the application is finally rejected by the Supreme Court. If the Supreme Court decides to set aside the appealed decision (i.e. the case will be allowed or remitted to the Patent Court), then the fees for the divisional must not be paid and the divisional application will be deemed withdrawn

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Tips for prosecuting AI-based patent applications in Germany

Olaf's key recommendations include:

- File apparatus and/or system claims!
- Include technical claim features with instructions for technical activities (e.g. data processing in network-connected technical devices, processing, storing and transmitting of data by technical devices (e.g. server, clients), or specific use of components of a data processing system, etc)!
- Include claim features which provide support for solving a concrete technical object by technical means (e.g. reduced network and/or processing load, reduced storage requirements, reduced chip space, increased processing speed, etc.)!
- Provide good support in the specification for the above concrete technical objects and their solution by technical means!
- Proactively file divisional applications as long as the case is pending during examination or appeal!

This briefing is for general information purposes only and should not be used as a substitute for legal advice relating to your particular circumstances. We can discuss specific issues and facts on an individual basis. Please note that the law may have changed since the day this was first published in July 2018.



Prepared by:

Olaf Ungerer
Partner

+49 (0) 89 51 50 58 00
olaf.ungerer@pagewhite.com

Widenmayerstr. 10
D-80538 München
Germany

www.pagewhite.com