

The European Patent Office (EPO) today (15 July 2020) held a hearing of the Enlarged Board of Appeal in the matter of 'Pedestrian Simulation' (G1/19). This is only the second time that the Enlarged Board has specifically considered the patentability of Computer Implemented Inventions (CIIs) and so represents a rare opportunity for case law in this area to advance significantly.

The patent application in issue concerns whether the simulation of people moving on foot through an environment is patentable subject matter. However, the implications of the Enlarged Board's decision are likely to extend far beyond this particular case, not only more widely to other simulation methods, such as for aircraft as was mentioned during the hearing, but even into areas such as Artificial Intelligence (AI).

In the present case, the application was initially refused by the EPO and the Applicant appealed against the refusal to a Board of Appeal. The EPO has previously allowed patenting of a simulation method in the form of Infineon's application relating to the simulation of $1/f$ circuit noise (T1227/05). However the Board of Appeal were disinclined to follow this case law and hence referred three questions for consideration by the Enlarged Board of Appeal, which were the subject of today's hearing.

The questions generally related to (1) whether a computer-implemented simulation can have a technical character; (2) what are the criteria for such a simulation having a technical character and is it sufficient that the simulation is based on technical principles of a simulated system or process; and (3) how would the first two questions be answered if the simulation is part of a design process.

During the hearing it was surprising that both the Appellant and the President of the EPO pleaded very much in favour of a computer simulation *per se* having a technical character, contrary to the referring Board of Appeal. Both parties argued that a computer-implemented simulation claimed as such can comprise a further technical effect and thus representing potentially patentable subject matter. Subject, of course, to it also being new and having an inventive step. From the comments of the Chairman of the Enlarged Board one could get the impression that the Enlarged Board of Appeal agreed and will answer the first question affirmatively, even if it was not explicitly said during the hearing.

The second question was split by the Enlarged Board into two questions, wherein the first question (2a) is what are the relevant criteria for assessing computer-implemented simulations and the second question (2b) is it a sufficient condition that the simulation is based, at least in part, on technical principles underlying the simulated system or process.

Both parties provided strong arguments that if there are technical principles underlying the simulated system or process then this is a sufficient condition. Both the Appellant and the President had prepared similar fictitious examples of a wind tunnel test and a computer-simulated wind tunnel test. It was argued that both solved the same technical problem of improving aircraft aerodynamics of e.g. airplane wings. Both parties attempted to illustrate that a simulation relying on technical principles should be a sufficient condition, something with which the HGF attorneys in virtual attendance agreed.

With respect to the first sub-question (2a) the Appellant took the position that if the simulation needs technical considerations then it has to be regarded as technical, thereby making those technical considerations the criteria. The technical considerations can lay in the technical principles of the underlying simulated system but can be also independent of the simulated system. The

President presented in this respect as a further example a simulation of a fictitious environment to which a raytracing process is applied to generate a photorealistic image of the environment. The raytracing process is based on physical considerations which provide a further technical effect, although the content of the image is not real.

With respect to the third question the parties argued that claiming a computer-simulation as part of a design process is basically not necessary but can, under certain circumstances, provide a technical character to a non-technical computer-implemented simulation.

The HGF attorneys in attendance support the positions of the pleading parties in that computer implemented simulations should be susceptible to patent protection if the computer-implemented simulations provide a further technical effect, as it is consistent with existing case law with respect to computer-implemented inventions, in particular the Infineon decision. Furthermore, they support the view of the Appellant that data defining the environment in the claims should be considered to provide a link to the real world, similar to a digital image in the renowned VICOM decision (T 208/84) which imbues the claims with a technical character.

The Enlarged Board concluded the Oral Proceedings without giving a decision on the questions. However, given the submissions of the parties and the vast majority of the amicus curiae briefs supporting answering the questions affirmatively in favour of the patentability of computer implemented simulations, it will be surprising if the Enlarged Board decide differently. We await with interest the outcome of this case not only in relation to simulation methods, but whether the Board's comments may apply to other areas of technology such as AI.