

effect came from "functional data structures (clipboard formats) used independently of any cognitive content...in order to enhance the internal operation of a computer system". Such "functional data structures" were also considered to be present in the file search method that was the subject of T. 1351/04.

i) Computer-implemented simulation methods

G. 1/19 concerned the computer-implemented simulation of the movement of a pedestrian crowd through an environment such as a building. The questions of law referred to the Enlarged Board of Appeal were answered as follows:

1. A computer-implemented simulation of a technical system or process that is claimed as such can, for the purpose of assessing inventive step, solve a technical problem by producing a technical effect going beyond the simulation's implementation on a computer.
2. For that assessment it is not a sufficient condition that the simulation is based, in whole or in part, on technical principles underlying the simulated system or process.
3. The answers to the first and second questions are no different if the computer-implemented simulation is claimed as part of a design process, in particular for verifying a design.

In the Enlarged Board's opinion, the COMVIK approach was suitable for the assessment of computer-implemented simulations. Like any other computer-implemented inventions, numerical simulations may be patentable if an inventive step can be based on features contributing to the technical character of the claimed simulation method. When the COMVIK approach is applied to simulations, the underlying models form boundaries, which may be technical or non-technical. In terms of the simulation itself, these boundaries are not technical. However, they may contribute to technicality if, for example, they are a reason for adapting the computer or its functioning, or if they form the basis for a further technical use of the outcomes of the simulation (e.g. a use having an impact on physical reality). In order to avoid patent protection being granted to non-patentable subject-matter, such further use has to be at least implicitly specified in the claim. The same applies to any adaptations of the computer or its functioning. The same considerations apply to simulations claimed as part of a design process.

Whether a simulation contributes to the technical character of the claimed subject-matter does not depend on the quality of the underlying model or the degree to which the simulation represents "reality". However, the accuracy of a simulation is a factor that may have an influence on a technical effect going beyond the simulation's implementation and may therefore be taken into consideration in the assessment under Art. 56 EPC (see also T. 489/14 of 26.11.2021).

A simulation is necessarily based on the principles underlying the simulated system or process. Even if these principles can be described as technical, the simulation does not necessarily have a technical character. The Enlarged Board was of the opinion that it is