were technical. The board noted that its position was not that all features implemented in (relational) database management systems contributed by virtue of this fact alone and independent of their nature to the technical character of an invention. The board reviewed decisions relating to accessing data base management systems (**T 1242/04** (OJ EPO 2007, 421), **T 279/05**, **T 862/05**, **T 658/06**, **T 1500/08**, **T 963/09**, **T 104/12**, **T 1965/11**) and information retrieval (**T 1569/05**, **T 1316/09**, **T 309/10**, **T 2230/10**, **T 598/14**). In the light of these decisions, the board in **T 1924/17** summarised that structured declarative queries, which are used for retrieving data managed in a relational database management system, normally have precise, formally defined semantics and the database management system then retrieves the specified data set as a result. It explained that relational database management systems typically executed such queries by determining an efficient query execution plan based on cost estimates for the necessary internal operations of the computer system. Such database management systems were software platforms for the centralised control of data. Features of these platforms often had a technical character, as they had been designed based on engineering considerations concerning the efficient exploitation of the computer system as a technical system. Information retrieval systems typically had to formally calculate a semantic similarity of documents, which is typically regarded as involving non-technical considerations and being based on subjective criteria and the content (semantics) of the documents to be retrieved.

d) Navigation systems

In **T 2035/11** the application mainly related to navigation systems that could be tailored to a user's particular wishes. The board held that optimisation algorithms are mathematical methods. It noted that **mathematical algorithms may contribute to the technical character** of an invention only in so far as they serve a **technical purpose** (see e.g. decision **T 1784/06**). The purpose of the algorithm was the mere display of an optimal path to the user for cognitive processing. The user could act on the information, but did not need to. As stated in decision **T 1670/07**, a technical effect may arise from either the provision of data about a technical process, regardless of the presence of the user or its subsequent use, or from the provision of data (including data that on its own is excluded, e.g. produced by means of an algorithm) that is applied directly in a technical process. In the case at issue, the data was produced by means of an algorithm and was not applied directly in a technical process, so that neither possibility applied. The German Federal Supreme Court had come to a similar conclusion in respect of a navigation system offering the user the possibility to exclude road segments based on a user-selectable property such as the road segment being a toll road (see BGH, 18 December 2012, X ZR 3/12 – Routenplanung).

In **T 651/12** the board stated that what were meant in Art. 52(2)(a) EPC were merely abstract mathematical methods, i.e. calculations for the sake of the calculation. However, in the case at issue, which was essentially the technical implementation in a map display apparatus of the method for displaying a bird's eye view map, the outcome of the calculation was used for a technical purpose, namely to **display information in an ergonomically improved manner**. The board further stated that also the calculation as such in that case had in the board's judgment clear technical aspects: the technical effect