

## Review of EPO Software Decisions in 2020

It does not seem possible to write any review of 2020 without mentioning Covid-19. However in this case we shall limit it to noting that the cancellation of most in-person oral proceedings at the EPO lead to a comparatively low number of published decisions by the electronic and software-focused boards of appeal (247 vs 339 in 2019) and that Board 3.5.03 held the first appeal hearing by video conference in [May 2020](#). Previously only Examining Division Oral Proceedings had been held by video conference and rarely; it will now be quite routine, saving costs for applicants.

On substantive issues it was a year of evolution rather than revolution and in particular there was no decision from the Enlarged Board of Appeal on the simulation referral made in 2019. This decision has the potential to substantially change the EPO’s approach to software-implemented inventions more widely than simulation and modelling but all signs from the Oral Proceedings were that a confirmation of existing case law is most likely. The concept of the Notional Business Person continued to be a useful tool for separating the technical from the non-technical in suitable cases - in some cases with positive outcomes for the patent proprietor - but *Comvik* remains the most widely cited case.

Below we give some statistics and discuss some of the more interesting cases published in 2020.

### Statistics

Figure 1 below shows clearly the reversal of the trend of the past few years in Boards 3.5.01 and 3.5.03 to 07 to publish more decisions. We can hope that there will be a reversion to the previous trend as there seems to be no reduction in either the backlog or time to decision.

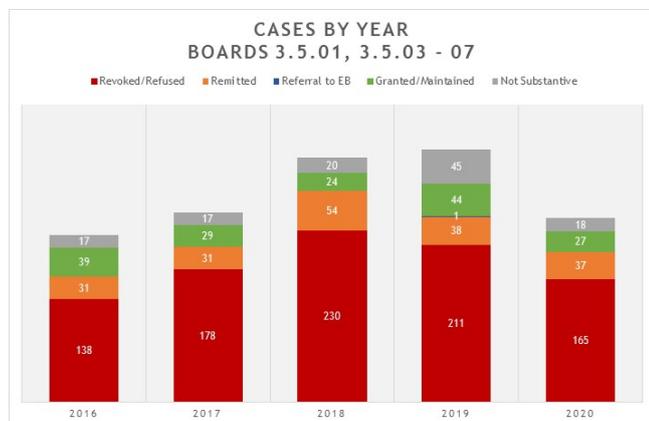


Figure 1

Figure 2 shows the trend in outcomes. Whilst there seems no clear change in the high rates of refusal and revocation, there does seem to have been an increase in the number of cases remitted

for further prosecution, rather than directly granted. This can be traced to amendments to the Rules of Procedure of the Boards of Appeal at the beginning of 2020 that have, in effect, made remission the default unless it is clear that all issues have been considered fully at first instance.

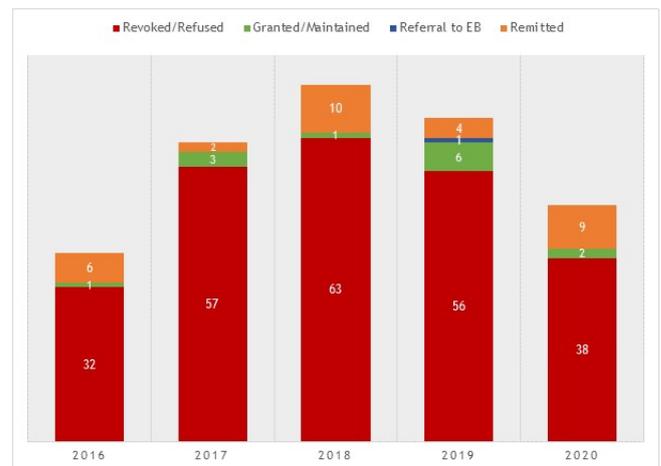


Figure 2

Figure 3 shows outcomes per Board, revealing distinctly different numbers of cases disposed of and also variations in rejection rates. Board 3.5.07 seems significantly less likely to reject applications than other Boards. This may reflect its workload, which largely comprises computer systems specially adapted for specific purposes but not for business methods, which remain with 3.5.01.



Figure 3

### Business Person

Five cases published in 2020 used or addressed the issue of the notional business person; three resulting in refusal of the application, one remission for further prosecution and one grant of a patent.

In [T 1039/13 \(Updating information/EQUIFAX\)](#) of 11.12.2019, the

invention concerned trading in massive amounts of consumer data whilst preserving some control over the data. The applicant framed this in terms of increasing security, a technical problem. However the Board disagreed, holding that the alleged increased security was not a technical effect but “rather a question of what and how much information to give away. That is something for the business person.”

The Board further opined that:

The business person might say: We (the information supplier) do not want to give away more information than necessary, and we want to control what information we give away. Give us a list of customers and we will update the records with information that we have about those customers. Thus, those are non-technical requirements that are given to the skilled person.

The applicant also argued that assigning a unique identifier (a key) to the customer records was technical. But the Board disagreed, asserting:

The business person could require: “We must be able to identify each customer.” In any case, the use of unique identifiers (primary keys) to identify records in a database was standard practice since long before the priority date.

As a result, the Board held that all features of the invention flowed directly from the non-technical requirements and hence the invention was obvious.

Two applications by Swiss Re were rejected. In [T 1902/13 \(Assessing competence levels/SWISS RE\)](#) of 4.7.2019 the invention concerned a computer-implemented method for assessing the competence of organisations, undeniably a business method that would be framed by a business person. An argument that “the business person and the skilled programmer would have to sit together in order to elaborate a workable solution”, implying that the technical and non-technical aspects of the invention are interlinked, was rejected.

[T 2455/13 \(monitoring of capital requirements for risk events / SWISSRE\)](#) likewise related to the implementation of a business process on network-based computer systems. The Board held that the notional business person would be aware of “a large number of computer and network-supported business processes (e.g. in the area of payment processes, materials management and also the insurance industry) in order to have an idea of what can be conceptually realized on an abstract meta-level.” Only the detailed implementation lies in the sphere of the programmer, the technical expert, and must be taken into account when examining inventive step. In this case the claim features were “only specified as modules on an abstract meta-level” and therefore cannot be considered technical features.

A more positive outcome was achieved in [T 1749/14 \(MOBILE PERSONAL POINT-OF-SALE TERMINAL/MAXIM\)](#) of 3.4.2020. Citing [CardinalCommerce](#), the Board stated:

in the present case the notional business person might come up with the abstract idea of avoiding the customer having to provide PIN and account information to the merchant.

But, they went on to say that this abstract business concept could not be implemented

on a standard general purpose mobile POS terminal infrastructure as known from D1 with standard programming skills. It requires a

new infrastructure, new devices and a new protocol involving technical considerations linked to modified devices and their capabilities as well as security relevant modifications of the transfer of sensitive information using new possibilities achieved by the modifications to the mobile POS infrastructure.

This goes beyond what the notional business person knows, but rather concerns technical implementation details (how to implement) which are more than a straight-forward 1:1 programming of an abstract business idea. Just as [T 1463/11 \(Universal merchant platform / CardinalCommerce\)](#) considered the security relevance of centralising authentication services in view of avoiding maintenance of software plug-ins in merchant computers contributed to the technical character, the Board considers the security relevance of the modifications according to point 4 above contribute to the technical character of the present invention.

The invention was therefore held to be inventive over D1 but the application was remitted for further prosecution because the search had been limited and other relevant prior art might be found.

At first glance, it seems surprising that the invention was held technical and inventive in [T 2314/16 \(Distributing rewards by assigning users to parts of advertisements/Rakuten\)](#). The invention in this case related to the distribution of rewards when ads on websites are clicked on. The reward is to be divided amongst several users. Rather than give each user a fractional reward, the ad was divided into areas assigned to respective users and the user whose area was clicked on gets the whole reward. This seems clearly a business idea. An argument that it reduced processing load because it avoided computationally intensive division operations was rejected as not credibly achieved.

However, starting from the position that the technical problem is the implementation of the reward distribution, the Board held that:

the allocation of users to partial image areas is not within the domain of the business person. In order to come up with this idea, one needs to understand how a web site is built, and in particular how an image map works. Thus, this feature cannot be part of the non-technical requirements. Instead it is part of the solution that has to be evaluated for obviousness.

The closest prior art was considered to be an HTML server-side image map (a feature first supported in a browser in 1993) and the Board

judges that it would not have been obvious to assign users to partial areas of an image as in claim 1. Although the means for implementing this was available in HTML, there was no motivation for the skilled person to do so. Accordingly, the subject-matter of claim 1 involves an inventive step (Article 56 EPC).

## Inventive Step

While in most cases inventive step arguments are quite specific to the facts of the case, a few decisions made points of potential wider relevance.

In [T 0984/15 \(Configuring proximity indication/HTC\)](#) of 8.9.2020, the closest prior art was an excerpt from a technical standard of 3GPP. The proprietor argued that that because this prior art document was a standard, the skilled person would be discouraged from implementing modifications of its teaching. The Board noted

that the skilled person would be well aware that a device implementing even obvious modifications to a technical specification could result in a working device but which does not conform to the specification and, as a consequence, cannot interoperate with legacy devices. However, the Board held that the fact of the closest prior art being a technical specification drafted by a standardisation group would not deter the skilled person from carrying out obvious improvements of that specification. Thus, the invention was obvious. This conclusion is perhaps not surprising since the argument that a skilled person would not modify a technical specification is really an economic one, not a technical one. If the invention when implemented is not interoperable with a standard that reduces the economic value of the invention but doesn't necessarily alter its obviousness from a technical point of view. Also, the reality of technical standards in many cases is that factors other than the purely technical may influence what features are adopted.

As noted above, EPO case law relating to so-called mixed inventions is based on the premise that features which do not contribute to achieving a technical effect are to be ignored when assessing inventive step. This is usually applied to features which are considered intrinsically non-technical. However, [T 1864/15 \(Dynamic Fragmentation/Microsoft\)](#) of 1.10.2020 illustrates another way in which this premise can be applied. The invention at issue involved transmitting a rule for constructing URLs instead of a list of specific URLs. This was said to reduce data transmission but the Board held that the rule was too vaguely defined to ensure that the amount of data transmitted was reduced. Thus the rule did not credibly achieve a technical effect and did not contribute to inventive step.

In [T 2138/14 \(Cursor For Televisions/Saturn Licensing\)](#) of 6.11.2019 the applicant argued that it was not obvious to transfer functionality known from computer GUIs to another platform such as a television. However the Board was not convinced in part because that computer technology, including the use of graphical user interfaces, has penetrated into many fields of technology including consumer electronic devices such as televisions. Indeed most televisions on sale now are computers and this principle of convergence has been discussed for many years.

## Examples of Business Methods and Other Non-technical Subject Matter

An extensive debate on whether weather data could confer technical character on an invention was held in [T 1798/13 \(Forecasting the value of a structured financial product/SWISS Re\)](#) of 25.5.2020. Ultimately the answer was no, in view of the fact that the weather data was used solely for financial purposes: valuing a futures contract. The invention used already collected data and did not provide any improvement in the collection of data nor the choice of which data to collect (considered technical in [T 2079/10 \(Steuerung von zellulär aufgebauten Alarm-systemen/SWISSRE\)](#) of 19.4.2018). Arguments that the invention was technical because it improved the data were also rejected on the grounds that the invention was basically improving a model based on scientific discoveries and that the parametrisation of the model was ultimately influenced by the business requirements. The Board's conclusions here are consistent with their earlier decision [T 2331/10 \(Operating wind turbines / GENERAL ELECTRIC COMPANY\)](#) of 15.12.2017, which concerned forecasting electric power production based on weather forecasts and wind turbine parameters for business purposes.

Another unsuccessful argument sought to rely on a "reciprocal technical effect". According to this argument, portfolios of structured financial products are based on stable forecast values and parameterised so as to be coupled with weather-based measurement data, achieving a reciprocal technical effect between the financial products and the "real-world". The data processing was adapted according to the structural parameters. The Board observed, rejecting this argument, that "the value of the financial product depends per definition on weather data, but not vice versa. There is no influence on the quality of the weather or weather-based measurements from the parameters of the financial product." That this journey from real world events to financial parameters to measurements to data processing is not considered technical has parallels with the "Broken Technical Chain Fallacy" of [T 1741/08 \(GUI layout/SAP\)](#) of 2.8.2012 whereby display of technical information does provide technical character to a method if the use of that information in a subsequent technical process step is dependent on user action.

The broken technical chain fallacy also determined the outcome of [T 0670/16 \(Gebahrenguthaben/KAPSCH\)](#) of 17.8.2020 where mere use of the current position of a vehicle in a method relating to route charging was not sufficient to imbue the method with technical character. Similar reasoning underlies the refusal in [T 1455/16 \(Image search to obtain shooting spot/RAKUTEN\)](#) of 20.11.2019. One novel feature of the invention in this case was the storing of position data in a database of photographs, implicitly so that a user could be guided to the place where a pleasing photograph was taken so as to take their own picture. The applicant referred to cases in which navigation was held to be technical but the Board considered that the use of position data in the information was not to improve the process of navigation and was insufficient to confer technical character. For the sake of completeness, it is worth noting that in [T 0572/15 \(Locating web-based social network members/FACEBOOK\)](#) of 11.12.2019, use of position data to locate contacts was considered technical but in that case not new.

Other examples of inventions that the boards considered to be non-technical included:

- an improved personalisation of advertisements based on peer ratings - [T 1776/13 \(Improving personalization of advertising/SAMSUNG\)](#)
- that a chart should visualise data displayed next to it and reflect changes to this data - [T 0452/14 \(Integrating charts in documents / MICROSOFT\)](#)
- using ranges of unit identifiers to label a number of (consecutive) unit identifiers of manufactured items - [T 0232/14 \(TRACKING AND TRACING MANUFACTURED ITEMS/INEXTO SA\)](#)
- protection of privacy by removing personal identification information - [T 1150/13 \(Linking data/TRA\)](#)
- an "e-voucher" scheme - [T 1863/14 \(Electronic vouchers/I-MOVO\)](#) also [T 1031/14 \(Electronic vouchers/I-MOVO\)](#)
- converting new 2D movies to 3D movies of theatre projection quality - [T 1656/14 \(Converting 2D movies/IMAX\)](#)
- using an intermediary server for managing user licences [T 1041/14 \(Providing a license for accessing protected content on a user device/Sony\)](#)
- customising a shared environment according to the users'

preferences - [T 1308/13 \(Customised shared environment/DISNEY\)](#)

- a new monetary service which combines banking and cash withdrawal services of different financial institutions - [T 2318/13 \(Method for obtaining cash at cardless teller machines/Helena Activos Líquidos\)](#)
- operational instructions to control persons to subject certain vehicles to a toll control - [T 0595/16 \(Kontrollbedaftiges Fahrzeug/TOLLCOLLECT\)](#)
- an “open ecosystem” within a mobile phone network so that the network operator can offer and charge additional services - [T 1310/17 \(Anwendungen auf SIM-Karten/TELEKOM\)](#)
- notifying the exact value of a jackpot in a lottery to players in real-time - [T 0886/14 \(Lottery game/Al-Ziyoud, Aiman H.\)](#)
- generation of search queries from natural language input to search a “social graph” - [T 1089/17 \(Ambiguous queries on online social networks/FACEBOOK\)](#)

In several cases, possible reductions of network traffic or saving in storage space, were considered merely bonus effects.

## Examples of Technical Subject Matter

In 2020 the Boards disagreed with examining divisions’ assessment of non-technical subject matter in quite a few cases, though did not always go onto grant the application.

For example, in [T 1247/18 \(Search-based application development framework/ORACLE INTERNATIONAL\)](#) of 4.9.2020 the Board expressly stated that steps of “indexing, creating an index store and accessing the index store using the search engine all contribute to the technical character of the invention”. The application was remitted for further examination based on documents cited in the search report.

Another search-related case was [T 2388/17 \(Predictive search results/Google\)](#) of 4.11.2020 concerning a method of providing search term suggestions as a user types. The Board held that the distinguishing features are technical because they “are not concerned with what information is provided to a user, in terms of non-technical considerations relating to the user’s cognitive interests, but with how information is provided in a way that reduces bandwidth usage.” There was “no broken chain within the meaning of decision [T 1741/08](#), since what is being taken into account is the normal typing speed of a person and the user’s average reaction time, not ‘the way the brain of the user perceives and processes the visual information given by a particular way of presenting information’, as in [T 1741/08](#) (see point 2.1.6 of the Reasons). The effect is not based on the fact that ‘a mental transition takes place more quickly than in the prior art’, as in the case underlying that decision (see point 2.1.6 of the Reasons ). Rather, the effect is based on considerations concerning the physical process of entering input by means of keystrokes.”

Still on the topic of search, [T 0943/16 \(Tier assignments/MICROSOFT TECHNOLOGY LICENSING\)](#) of 25.6.2020 related to a statistical approach to sorting items in a tiered search engine index which apparently improved the efficiency of the search engine, overall if not necessarily for a given search. Key to a positive outcome seemed to have been that the claim explicitly stated that different storage tiers had different retrieval times and that the applicant convincingly argued the invention provided

a reliable improvement. The improvement was said to be due to the use of history data which the Board considered “is purposively used to improve access times” meaning that the “improvement is not merely the physical consequence of a non-technical decision but a technical effect to be taken into account in the assessment of inventive step”.

[T 0731/17 \(Object persistence/MICROSOFT TECHNOLOGY LICENSING\)](#) of 15.1.2020 concerned a complex invention relating to user defined types in an SQL database. The examining division’s assessment of inventive step proceeded on the basis that all features of a fairly lengthy claim except hardware were non-technical. This was roundly rejected by the Board since it would mean that there would never be a need to analyse whether non-technical features interact with the technical subject-matter of the claim to solve a technical problem or bring about a technical effect, as required by [G 1/04](#) and [T 154/04](#). The Board also criticised the examining division for analysing the claim as a collection of disconnected terms rather than as a whole.

Briefly, [T 2496/17 \(Accessing spreadsheet objects/PALANTIR TECHNOLOGIES\)](#) of 6.5.2020 considered context-dependent auto-completion in a spreadsheet to be technical, whilst [T 0929/15 \(Identifying a user issuing a voice request/ACCENTURE\)](#) of 17.11.2020 considered using natural language voice queries to also biometrically identify a user to be technical.

## Computer Science

Decision [T 0517/16 \(Quellcodeerzeugung/ALLGEIER\)](#) of 18.11.2020 concerned a method, defined in very broad terms, of automatically generating code based on “process files” describing business or management processes. A separate computer program, apparently a Java class with a run method, was generated for each “subject” involved in the method. This was held not to have a sufficient technical effect. Arguments that it was a technical simulation failed because the underlying process that was simulated was not technical, notwithstanding that this issue is still pending in [Enlarged Board case G 1/19](#). Also rejected as non-technical was an auxiliary request in which the process was specified to be described using blocks for subjects and arrows for communication between them; even if technical this would surely have been obvious. Probably the best argument was that the invention enabled faster execution through parallelization. But the Board observed this advantage depended on what type of platform is used to run the program generated and how. Since the claim did not specify a parallel platform, this alleged advantage could not be taken into account.

Parallels can be drawn with [T 2602/17 \(Metadata for graph-based computations/Ab Initio\)](#) of 26.11.2020. The applicant here argued that the invention addressed two different technical problems: improving efficiency in determining metadata associated with components of an executable graph-based computation in which the data that is to be processed by a component can change at run-time; and improving reliability and efficiency of execution of the graph. Again, the invention was defined in very abstract and broad terms. Thus, while the Board was prepared to accept that these problems were technical, the invention at the generality claimed did not reliably solve them.

By way of contrast, a more positive outcome was achieved in [T 2573/17 \(Linking objects in databases/AVEVA\)](#) of 4.9.2020. Although the Board considered that the use of look-up tables was well-known, they noted that the invention used a look-up table in a particular that was not known from or suggested by the prior

art. This led to a conclusion that two groups of features the examining division had treated separately were in fact linked because one group defined structures in the database which the other group relied on for querying. Under EPO practice, if different features solve different independent problems, then the examiner can apply different prior art documents to the different features, but if the features have some synergy then such mosaicking is prohibited and the examiner must show a motivation to combine different documents.

## User Interfaces and Presentation of Information

The most commonly applied test for whether an invention relating to a user interface is patentable is to determine whether it “credibly assists the user in performing a technical task by means of a continued and guided human-machine interaction process” (see [T 0336/14](#), Headnote and [T 1802/13](#), page 10, second full paragraph). The importance of this test was emphasised in [T 1091/17 \(Clinical statistics/PHILIPS\)](#) of 4.6.2020 which rejected an alternative test put forward in a few cases: whether the invention is distinguished by the cognitive content of the information presented (what is presented) or by the manner of the presentation (how it is presented), the latter being patentable and the former not.

A possible third category of invention - “those which exploit physiological characteristics of human perception so as to enable or improve the perception of presented information by a human” - was discussed in [T 1442/16 \(Cabrera ECG/PHILIPS\)](#) of 30.8.2019 based on German case law (BGH, X ZR 37/13, GRUR 2015, 660 - Bildstrom of 26 February 2015). However the Board did not accept this as a separate category of patentable inventions but rather suggested the “exploitation of physiological characteristics of human perception” is a factor to be taken into account in determining whether the invention “credibly assists the user in performing a technical task”. If the physiological characteristics are exploited to assist a non-technical task that would not be patentable.

[T 1091/17](#) was refused but [T 1142/16](#) remitted for further prosecution after significant amendment. The different fates of the two inventions reflect their different natures. [T 1091/17](#) related to the display of statistical information to assist diagnosis. The Board did not consider diagnosis to be technical because it “involves tasks of a predominantly non-technical nature such as the deductive decision phase, which is a purely intellectual exercise (see [G 1/04](#), point 6.4.1)”. On the other hand, “searching and retrieving medical cases stored in a database” was considered a technical task but the invention did not credibly assist the user to perform it, because it involved “a chain broken by semantic or cognitive processing” (the broken technical chain fallacy discussed above).

[T 1142/16](#) related to presentation of ECG data “according to the

Cabrera system (well-known to physicians) which illustrates ECG leads in an anatomically more meaningful manner”. Broader requests were again denied due to the broken technical chain because the Board considered the distinguishing features were not “objectively and causally linked” to the physician being more easily able to detect a condition in the patient’s heart because such an improvement “inevitably relies on the [physician’s] cognitive abilities, including their knowledge of anatomy and principles underlying ECG, and their visualisation skills”. However, a more limited request introducing a feature of an automatic alarm “shifted the focus of the proceedings away from presentations of information” and so the case was remitted for further examination and search of features introduced to the claim during appeal.

By way of an aside, this case illustrates difficulties with added subject matter that can arise where optional features in the specific description are prefaced by “in another embodiment”, “in a further embodiment” or the like. Under EPO practice this approach is not considered to disclose combinations of features from different “embodiments” without explicit disclosure of such combinations. The Board rejected an argument that this was just the way the text had been written, commenting “[p]ersonal style does not give applicants a carte blanche to mix and combine features from different embodiments as they please.

In applying the test of whether an invention “credibly assists the user in performing a technical task by means of a continued and guided human-machine interaction process”, it is important that any improvement of ease of use is an objective one and not a matter of subjective user preference. In [T 2271/16 \(Book-binding application/CANON\)](#) of 23.9.2020 adding data to an existing book file via a drag-and-drop operation was considered not to be a matter of subjective user preference but “a specific mechanism that is implemented with technical means in the form of a file system and which solves the technical problem of allowing the user to specify an input data file together with attributes to be applied to the data in the file.” On the other hand, all alleged advantages in 3D-GUI based on polyhedrons ([T 2371/17 \(Animated 3D-GUI/SAMSUNG\)](#) of 7.7.2020) were considered to rely on the user’s preferences and thus cannot confer a technical character to the projection effects. Whether a gesture is “intuitive” or not was considered a subjective question in [T 1505/17 \(Transposition gestures/HUAWEI TECHNOLOGIES\)](#) of 17.2.2020.

Several inventions were rejected because the task with which the user was assisted was not technical. The invention of [T 2362/13 \(Logistics central station/SCHNEIDER LOGISTICS\)](#) of 1.9.2020 related to planning and scheduling shipments. In [T 1504/15](#) of 29.5.2020 a user was helped to choose a program to watch. [T 1750/13 \(Scheduling opportunity previewer/Microsoft Technology Licensing, LLC\)](#) of 1.10.2019 related to scheduling activities in a calendar.

## For more information, please contact:

John Leeming – [jleeming@jakemp.com](mailto:jleeming@jakemp.com)