

This document includes some recent decisions of the EPO in 2012 with regards to software related inventions and shows relevant extracts from the respective decisions.

T 2192/08 (Stock management/CANON) of 10.12.2012
Information processing apparatus, consumables stock management system, consumables stock managing method, consumables stock managing program, and memory medium

Inventive step - (yes)

Applicant name: CANON KABUSHIKI KAISHA
Application number: 02256095.7
IPC Class: G06F 17/60

<http://www.epo.org/law-practice/case-law-appeals/pdf/t082192eu1.pdf>

The invention concerns a stock-keeping function in a printer. The printer keeps track of the number of toner or ink cartridges in stock, reducing the number automatically when a cartridge is changed. In prior art systems, the printer produces a signal when the cartridge is empty, and that signal triggers the decrement of the stock count.

A user of the printer might remove the cartridge, and then put it back, rather than replacing it with another. In particular, a user might shake the cartridge and put it back. That sometimes allows the cartridge to be used for longer. If that happens, the automatic stock count is decremented, but the actual stock situation has not changed.

The invention solves this problem, as defined in claim 1:

“An information processing apparatus for enabling management of a stock number of a consumable, in the form of a cartridge containing ink or toner, detachably placed in a printing apparatus by referring to a count of the number of print sheets or a pixel count number from the printing apparatus, characterized by comprising: determining means (201) for determining that a current notification of a residual amount of the consumable is to be used to decrease the stock number of the consumable if the count of the number of print sheets or pixel count number has changed by at least a predetermined amount in a period between the previous notification of the residual amount of the consumable and the current notification, the previous and current notifications either both indicating the residual amount becoming low, or both indicating that the residual amount is no longer low; and control means for controlling stock management such that, if the determining means (201) determines that the current notification is to be used to decrease the stock number, the stock number is decreased by one,

whereas the stock number is not decreased if the determining means (201) does not determine that the current notification is to be used to decrease the stock number.”

The stock count is not automatically decremented when there is an empty signal. Rather, a measure of how much use the cartridge has had between consecutive empty signals is used. If, after an empty signal, a cartridge is only used a little before the next empty signal is produced, then that is taken to indicate that a new cartridge was not used, but that the old one was put back, and the stock count is not decremented. As indications of how much use a cartridge has had, either the number of printed sheets or the number of printed pixels is used. **Neither the check on cartridge use, nor either of the two alternative ways of assessing it, is part of the prior art.**

The Examining Division considered that such checks on cartridge use would have been obvious to the skilled person. Firstly, as the application states, it was "generally known that by once removing the cartridge from the printing apparatus and shaking it or the like, a state where the residual amount is temporarily recovered is detected or the like". Secondly, the use of the number of sheets or of printed pixels, as indications of cartridge use, were simple design options.

Despite the fact that cartridge shaking as such was generally known, the Board is not convinced that the underlying cause of inaccurate stock-keeping was known or obvious. Even a skilled person who knew that users sometimes shook and replaced cartridges might not have seen a connection with the stock-keeping problem. Thus, the **identification of the technical problem was, in itself, a non-obvious step.**

Moreover, nothing in the prior art suggests the proxy measures of cartridge use, defined in the independent claims, could be used to indicate whether a cartridge had been replaced by a new one, or an old one had been re-placed in the printer. The Board **cannot agree** with the Examining Division **that this amounts simply to a design option.** Indeed, two steps have to be taken: firstly, the skilled person must decide that it is possible to distinguish between the placing of a new cartridge and the re-placing of an old one on the basis of how much printing takes place between consecutive signals; secondly, he must decide that the number of sheets or the number of pixels can be used as an indication. **It might be arguable that, once the first of those steps has been taken, the second would be obvious; but the Board sees no indication that the first step itself would have been obvious.**

Therefore, the apparatus defined in claim 1 and the corresponding method meet the requirement of inventive step.

T 2155/08 (Content distribution/SONY) of 14.12.2012

Terminal capable of preventing false use of content distributed over network

Inventive step - after amendment (yes)

Examples of recent 2012 Board of Appeals decisions related to Software Innovations

Application number: 01978980.9
IPC Class: G06F 12/14, G06F 9/06, G06F 1/00, G06F 11/00, G06F 17/60
Applicant name: Sony Computer Entertainment Inc.
Opponent name: Davies, Simon Robert (D Young & Co LLP)

<http://www.epo.org/law-practice/case-law-appeals/pdf/t082155eu1.pdf>

This case is primarily interesting because of the claim construction discussion of the BoA.

The application relates to the download of paid digital content such as video games or music over a network from a server to a client computer and addresses two problems: Download should be possible in a flexible manner (e.g. according to a schedule set by either the server or the user) and at the user's convenience, while unauthorized (typically unpaid) use of the content should be prevented. The invention proposes to provide, in the client computer, two separate storage "regions" with different access regimes, the "first region" allowing access only by system programs and the "second region" allowing read-only access by user application programs, and to use these regions to regulate user access to content. Content is downloaded into the "first region" and later, in a separate step, moved into the "second region". This setup decouples the downloading from the step of making the content available to the user so that downloading may occur at any convenient point in time (e.g. depending on available bandwidth) and the user may be prevented from accessing the downloaded data before paying.

The respective independent system claim reads as follows:

“A terminal device (2) comprising:

a communication means (17, 20) for accessing via a network (NW) to [sic] a predetermined server machine (4) and for downloading content from the server machine;

a storage means (6) for storing the content downloaded by the communication means from the server machine, the storage means having a first region which only system programs of the terminal device are allowed to access and a second region into which only system programs can write and which allows read-only access for user application programs, and wherein neither the first region nor the second region is erased when the terminal device is reactivated; and

a storage control means (5) for controlling data in the storage means, including writing the downloaded content into the first region with a system program and moving with a system program the content written into the first region of the storage means into the second region.

Prior Art

discloses that a client downloading content will check the received data packets for transmission errors and correct them if necessary. More specifically, received data packets are stored in one of two portions of SRAM buffer memory, called respectively "fixit" and "checked", depending on whether errors were detected. After due correction, the packets are moved into Flash memory from where they are retrieved for play by the user. It further discloses that during play some of the game data is stored in SRAM, specifically game related parameters such as scores or the current state of the game. This data may be stored in non-

volatile back-up memory, possibly Flash, so that users may suspend and later resume playing a particular game at the same point.

Claim construction

The claims refer to two categories of programs, called, respectively, "system programs" and "user application programs". Although these terms are commonly used in the art, the board considers that they are **not, by themselves, clearly distinguished from each other**: The term "system programs" can refer to programs which control computer hardware and which, in order to do that, may have special privileges, but it can also, and more broadly, refer to programs which are generally thought to be part of the "system", such as the operating system, a graphical user interface, or a compiler. Many programs in the latter group cannot, in the board's understanding, be clearly and in technical terms distinguished from other programs, including "user application programs". However, the claims clearly define two distinct categories of programs by specifying that "system programs" have different, more permissive, access rights to the claimed storage regions than "user application programs". In view of this, the board accepts the claimed use of these terms as **clear**.

The decision under appeal interprets the claimed term "storage" so broadly as to subsume any kind of memory, including the SRAM and the Flash memory according to the prior art. The appellant challenges this interpretation with the argument that the terms "memory" and "storage" cannot be equated but denote "entirely different things", memory being the "fast information-holding place (made up of RAM and ROM)" storage being the "long information-holding place". In support of this argument, a PC tutorial (Norton 1997) is cited. The board agrees that the distinction between internal memory and peripheral storage is an important one and that the skilled person would preferably use the terms "storage" and "memory" as suggested by the appellant - if the distinction must be made. Therefore, it is not necessary to introduce the cited tutorial formally into the procedure.

5.3 However, the board disagrees that the term "storage" is used in the art only in this limited sense. Rather, the term "storage" is also used with a broader meaning, in particular when it is not explicitly contrasted with "memory". For example, in common parlance in the art, "memory" is referred to as "primary storage" and data is said to be "stored in memory". The appellant itself concedes a "confusion in terminology" due to the fact that technology originally used for memory has come to be used as a storage device, and states that certain "memory" can "function as memory or storage". The board thus agrees with the examining division that the "**storage means for storing" as claimed must be interpreted broadly as subsuming memory such as SRAM or Flash**".

Finally the reasons for inventive step can be found in the full text of the decision and are not very interesting from a learning perspective.

T 0280/09 (Transaction management/YANTRA) of 11.10.2012
REAL-TIME TRANSACTION MANAGEMENT SYSTEM

Inventive step - (no)

Application number: 01930662.0
IPC Class: G06F 17/00
Applicant name: Yantra Corporation
Cited decisions: T 1242/04

<http://www.epo.org/law-practice/case-law-appeals/pdf/t090280eu1.pdf>

The invention relates to a "real-time transaction order management system" which comprises a "central repository," and a "central repository controller," the latter allowing a participant to interact with the former via a "communications network." The repository is a collection of information ("transaction order attribute and status information"). The controller can be configured to register participants, control access to the repository, and to constrain some action; it can also be configured to allow a participant to access and modify an attribute in the repository. **Neither the repository nor the controller is necessarily technical.** The central repository is a collection of information, and the latter may be a person who registers participants and enforces some constraint. It should be noted that the constraint is not further defined, and may be something as simple, and non-technical, as a shopkeeper agreeing to provide an item only if the buyer pays. It is arguable that the controller must be technical, because the claim defines it as "configurable."

Claim 1 reads as follows:

A real-time transaction order management system for enabling a plurality of independent entities to cooperatively process a transaction order, the system comprising:

a central repository containing transaction order attribute and status information;

and

a central repository controller to control real-time access to the central repository by a plurality of transaction participants wherein at least one of the transaction participants is an independent entity relative to at least one other of the transaction participants, wherein:

the central repository controller is configurable to register an independent entity from the plurality of independent entities as a transaction participant, to enable the transaction participant to access the central repository, and to constrain at least one action of the transaction participant;

the central repository controller is configurable to allow at least one of the transaction participants to initiate cooperative processing of a transaction order by depositing transaction order attribute information into the central repository through real-time interaction with the central repository controller via a communications network, and wherein cooperative processing of the transaction order includes accessing and modifying at least one transaction

order attribute of the transaction order using remote real-time interaction with the central repository controller via the communications network.

The invention defined in the claim has a mixture of technical and non-technical features. Only the technical features can be taken into account when assessing inventive step. In the present case, the Board sees the **technical problem as one of providing a technical tool** to allow a participant to register and initiate "cooperative processing of a transaction", while enforcing some constraint. The **technical solution** is to **provide a communications network**. In the Board's judgment, the use of a communications network would have been obvious, because some means of communication is necessary to the underlying non-technical system. Even if the controller were seen as necessarily technical, on the basis of its being "configurable", the invention would still have been obvious. The technical solution to the problem of providing a technical tool which allows a participant to register and initiate cooperative processing of a transaction would have been the provision of a communication network and of a machine to control registration and initiation. Suitable machines were known. A general-purpose computer would have been one obvious choice.

The Board is not persuaded by the appellant's arguments. It is certainly true that the system defined by claim 1 is not limited to business systems. **What is important, however, is that the underlying systems of managing transactions is not limited to technical management or technical transactions**. It is, therefore, legitimate to consider the invention as a technical tool which facilitates the underlying non-technical system. It also seems to be true that the invention provides an over-arching system, but the provision of such a system, in the context of non-technical subsystems, has no technical implications. The argument that the invention works in **real time also refers to a non-technical issue**. To make a computer system operate in real time may involve special measures, which are technical, but neither the claim, nor the application as a whole, sets out any such measures. As set out in the claim, real-time processing need be nothing more than starting to process an order as soon as it has been made, and there is nothing technical in that.

The subject matter of claim 1, therefore, in the light of a network of general-purpose computers, does not involve an inventive step. It is beyond dispute that these were known. According to T 1242/04, "Provision of product-specific data/MAN, OJ EPO 2007, 421 (see point 9.2), **an application can be refused for lack of inventive step, without documented prior art, if the objection is based on prior art which is "notorious."** That is the case here, and so an "additional" search is not necessary.

T 1784/06 (Classification method/COMPTEL) of 21.9.2012
Method and computer program product for classification and linking data records, and a classification system

**Referral of questions to the Enlarged Board of Appeal (no)
Inventive step (no)**

Application number: 03396071.7

Examples of recent 2012 Board of Appeals decisions related to Software Innovations

IPC Class: G06F 17/30, H04M 15/00
Applicant name: Comptel Corporation
Cited decisions: G 0001/08, G 0003/08, T 0072/95, T 1173/97, T 0641/00, T 0258/03,
T 0154/04, T 1227/05, T 0473/08

<http://www.epo.org/law-practice/case-law-appeals/pdf/t061784eu1.pdf>

This case is interesting as it strongly defends the COMVIK approach as the current EPO practice in the presence of a mix of technical and non-technical features.

Claim 1 reads as follows:

1. A method for classifying records by means of a computer program product, comprising
 - receiving records containing several fields, the fields of which records contain values,
 - reading the values contained in at least two specified fields from each received record, and
 - classifying the received records using a classification structure containing conditions, the classification structure containing field-specific classification structures such that there is an own field-specific classification structure for each field according to the conditions of the classification structure,characterized by
 - selecting field-specific classification structures corresponding to the specified fields, and
 - for each record:
 - searching from the selected classification structures a set of suitable classes for each of the specified fields, wherein the suitable classes correspond to the value read from the field,
 - forming an intersection set of the sets of suitable classes, and
 - selecting a class from the intersection set and classifying the record into the selected class.

The Board stands by the Comvik approach that only features contributing to the technical character of claimed subject-matter enter into the examination for inventive step, see T 641/00-Two identities/COMVIK, OJ EPO 2003, 352, point 6:

"... where a feature cannot be considered as contributing to the solution of any technical problem by providing a technical effect it has no significance for the purpose of assessing inventive step."

As patents can be granted only for technical subject-matter (Article 52(1)(2)(3) EPC), it is consequential that a (non-obvious) contribution which justifies the grant of a patent has to have a technical character. It would appear paradoxical to the Board to recognise an inventive step on the basis of a non-technical innovation (such as an organisational, administrative,

commercial or mathematical algorithm) having no technical implication other than the (obvious) desire for its implementation on a general-purpose computer.

As the algorithm is a mathematical (inter alia Boolean) method and mathematical methods as such are deemed to be non-inventions (Article 52(2)(3) EPC), a technical character of the algorithm could be recognised only if it served a technical purpose (see e.g. T 1227/05-Circuit simulation I/INFINEON, point 3.1, OJ EPO 2007, 574).

However, the automatic classification of data records according to claim 1 serves only the purpose of classifying the data records, without implying any technical use of the classification. The claim covers any non-technical (e.g. administrative or commercial) use of the classified data records. In the light of the description, the classification method prepares rating and billing procedures. Therefore, the Board does not consider the result of the algorithm --- a set of classified data records --- as technical.

Enhanced speed of an algorithm, as compared to other algorithms, is not sufficient to establish a technical character of the algorithm (see T 1227/05, point 3.2.5).

If a computer-implemented algorithm runs more quickly, the resulting saving in energy is a technical effect inherent to the normal interaction of software and hardware, i.e. it is not a "further" technical effect of the algorithmic program controlling the computer (see T 1173/97-Computer program product/IBM, OJ EPO 1999, 609).

The claimed algorithm may allow a data record to be processed in a parallel computer architecture as the various fields of a data record can be judged separately in a first level of processing. However, claim 1 is not limited to an implementation on a parallel hardware structure. In fact, the application as a whole is silent on parallel data processing. (Parallel processing has been mentioned by the decision under appeal and addressed by the statement setting out the grounds of appeal.)

The application may disclose a robust algorithm which is immune to variations in the number of classes to be recognised. This may be a valuable mathematical property of the algorithm and would imply technical benefits when used for a technical purpose. However, claim 1 is not limited to any technical application of its classification method. According to the description, the data records are classified for the non-technical purpose of billing.

As the algorithm of claim 1 does not contribute to the technical character of the classification method, it does not enter into the examination for inventive step.

The Board agrees to the statement that a non-technical problem can have a technical solution (assuming that a problem properly formulated with respect to the closest prior art can ever be of a completely non-technical nature). On the other hand, where **an intrinsically non-technical solution (mathematical algorithm) seeks to derive a technical character from the problem solved, the problem must be technical.** Otherwise, the solution remains non-technical and does not enter into the examination for an inventive step.

Indeed, it would appear illogical to recognise an inventive step on the basis of a non-technical contribution for which no patent protection is available "as such". Hence, question 1, insofar as it has not already been answered by the Enlarged Board of Appeal, effectively aims at

opening the European Patent Convention to non-technical innovations. This would exceed the competence of the Boards of Appeal (including the Enlarged Board of Appeal).
