

No Technical Effect, No Invention?

- **Overview of Legal Basics**
- **History of EPO Case Law**
- **Former EPO Approach – Present EPO Approach**
- **Strategy**
- **Examples for granted/refused Claims**

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Article 52 (1):

European patents shall be granted for **any inventions** which are susceptible of industrial application, which are new and which involve an inventive step.

Article 52 (2) (c) and (3):

Schemes, rules and methods for performing **mental acts**, **playing games** or doing **business** are excluded from patent protection to the extent to which a European patent application or European patent relates to such subject-matter or activities **as such**.

Rule 29

Form and content of claims

- (1) The claims shall define the matter for which protection is sought in terms of the **technical features of the invention**. Wherever appropriate claims shall contain:
 - (a) a statement indicating the designation of the subject-matter of the invention and **those technical features which are necessary for the definition of the claimed subject-matter** but which, in combination, are part of the prior art;

Rule 29

Form and content of claims

(1)

- (b) a characterizing portion - preceded by the expression "characterized in that" or "characterized by" - stating **the technical features** which, in combination with the features stated in sub-paragraph (a), it is desired to protect.

.....

.....

Rule 27

Content of the description

(1) The description shall:

- (a) specify the **technical field** to which the invention relates;
- (b)
- (c) disclose the invention, as claimed, in such terms that the **technical problem** (even if not expressly stated as such) and its solution can be understood, and state any advantageous effects of the invention with reference to the background art;
- (d)
.....

Limitation of exclusion:

In the light of the Boards of Appeal, the above exclusion provision according to Art. 52(1) EPC is to be interpreted as implying a **“requirement of technical character”** or **“technicality”** which is to be fulfilled by an invention in order to be patentable.

- T 0935/97 comments the “**as such**” as follows:

-The combination of the two provisions (article 52(2) and (3) EPC) demonstrates that the legislators did not want to exclude from patentability all programs for computers. In other words the fact that only patent applications relating to programs for computers as such are excluded from patentability means that patentability may be allowed for patent applications relating to programs for computers where the latter are not considered to be programs for computers “**as such.**”

In other words, in order to determine whether an invention relating to a business method or the further subject-matters or activities mentioned in Art. 52(2) EPC is patentable in accordance with the EPC, it is to be determined whether this invention has a **technical character**.

Basic principle:

An (patentable) invention must have a technical character !

tech·ni·cal

Of, relating to, or derived from **technique**.

- Having special skill or practical knowledge especially in a **mechanical** or **scientific** field: a technical adviser.
- Used in or peculiar to a specific field or profession; specialized: technical terminology.
- Belonging or relating to a particular subject: technical expertise.
- Of, relating to, or involving the **practical**, **mechanical**, or **industrial** arts or the **applied sciences**: a technical school.
- Abstract or theoretical: a technical analysis.
- Of, relating to, or employing the **methodology of science**; scientific.

tech·ni·cal

- According to principle; formal rather than practical: a technical advantage.
- **Industrial and mechanical; technological.**
- Relating to or based on analysis of market indicators, such as trading volume and fluctuations in securities prices, rather than underlying economic conditions such as corporate earnings, inflation, and unemployment: a technical correction in the stock market.
- Source : www.dictionary.com

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VICOM (T208/84)

- Apparatus for digitally filtering display data
- Technical effect (yes): improving the processing speed and display quality
- Analogy between hardware and software implementation

VICOM (T208/84)

- Even though the idea underlying the invention can be seen as a mathematical method, a claim directed to a technical process involving the method does not mean covering the mathematical method per se.
- A computer of known type, configured to operate according to a new program should not be considered as belonging to the state of the art according to Art. 54(2) EPC.
- A technical method executed under control of a program should not be considered as a computer program as such.

KOCH STERZEL (T26/86)

- Claims are directed to the control of an X-ray apparatus by software.
- EPC does not contain any provision preventing to obtain patents for a mixture of technical and non-technical features.
- In order to determine whether a claim is directed to a computer program as such, weighing the technical and non-technical features is inappropriate. If the invention involves technical means, it can be patented provided it meets art. 52-57 EPC.

SOHEI (T769/92)

- Claims are directed to a computer system for financial and inventory management.
- An invention including software-implemented functional features is not excluded from patentability under art. 52(2)c) and art. 53 EPC provided that « technical considerations » relating to the specificities of the solution to the underlying problem are required to execute the invention.
- These « technical considerations » should relate to the way the computer system operates. They should not relate to the way the financial scheme operates.

SOHEI (T769/92)

- The admission as a technical invention cannot be denied by an additional feature which as such would be excluded from patentability under articles 52(2)c) and (3) EPC.
- In this case, the additional feature was of commercial nature.

IBM (T935/97)

- A computer program product, provided that it fulfills the required “technicality” when the program is executed on a computer, can be patented.
- The main reason is that the technical effect is not necessarily actual in the claimed invention; it can be potential.
- A “computer program as such” in the meaning of art. 52 (2) (c) and (3) EPC should therefore be understood as a computer program having no potential technical effect.
- A concern in the background of this decision was worldwide software patent harmonization.

PHILIPS (T1194/97)

- A data structure as such on a medium can be considered as patentable provided that the cooperation of this structure with a program involves a technical effect.
- Such a data structure on an electronic/magnetic/etc. support is not a “presentation of informations” as it is not directly intelligible by the human being. It further departs from a “presentation of information” as the latter, in the meaning of art. 52 (2) (d) and (3) EPC, should be understood as relating to “cognitive or aesthetical” information.
- Much like in the IBM case, the technical character may be potential only.

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Basic EPO Approach (so-called Contribution Approach):

An invention has a technical character if it provides a technical contribution to the art in a field not excluded from patentability under Art. 52(2) EPC (T 121/85, T 30/86, T 95/86, T 603/89, T 71/91, T 236/91, T 833/91, T 77/92).

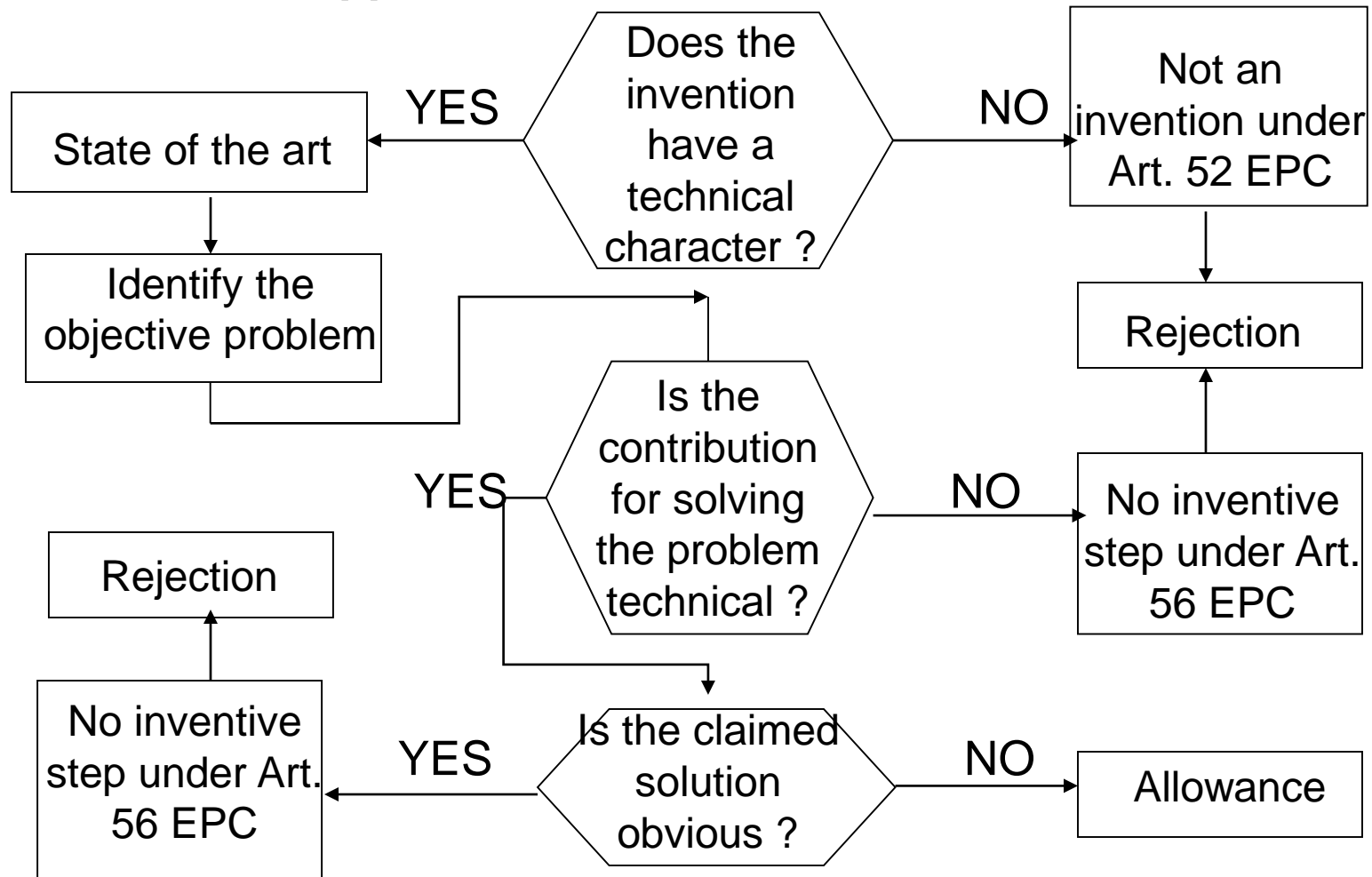
That means when examining whether the invention concerned may be considered to be an invention within the meaning of Art. 52(1) EPC one had to distinguish between “new features” and “known features”.

However, recent decisions considered the mentioned basic approach not to be appropriate to assess whether or not an invention has a technical character!

Current EPO approach

In all cases it is the entire claim, including all its features, whether known or unknown, technical or non-technical, which has to be taken as a basis for examination.

Current EPO approach



Current EPO approach

The technical character of an invention is determined at two different levels:

- Does the claimed subject matter have a technical character? A negative answer will lead to a rejection under Art. 52 EPC.
- Does the contribution to solve the objective problem have a technical character? A negative answer will lead to a rejection under article 56 EPC.



Guidelines for examination in the EPO (C.IV.2.3; May 22, 2002)

“In the practice of examining computer-implemented inventions, however, it may be more appropriate for the examiner to proceed directly to the questions of novelty and inventive step, without considering beforehand the question of technical character.

In assessing whether there is an inventive step, the examiner must establish an objective technical problem which has been overcome. The solution of that problem constitutes the invention's technical contribution to the art. The presence of such a technical contribution establishes that the claimed subject-matter has a technical character and therefore is indeed an invention within the meaning of Art. 52(1). If no such objective technical problem is found, the claimed subject-matter does not satisfy at least the requirement for an inventive step because there can be no technical contribution to the art, and the claim is to be rejected on this ground.”

Case Law of the Boards of Appeal (T 0931/95 dated Sept. 8, 2000)

1. A **method** of controlling a pension benefits program by administering at least one subscriber employer account on behalf of each subscriber employer's enrolled employees each of whom is to receive periodic benefits payments, said method comprising:

providing to a data processing means information from each said subscriber employer defining the number, earnings and ages of all enrolled employees of said subscriber employer;

determining the average age of all enrolled employees **by average age computing means**;

5. An **apparatus** for controlling a pension benefits system comprising:

a data processing means which is arranged to receive information into a memory from each subscriber employer defining the number, earnings and ages of all enrolled employees, said data processing means **including a processor** which includes:

A. **average age computing means** for determining the average age of all enrolled employees;

determining the periodic cost of life insurance for all enrolled employees of said subscriber employer by **life insurance cost computing means**; and

estimating all administrative, legal, trustee, and government premium yearly expenses for said subscriber employer by **administrative cost computing means**;

the method producing, in use, information defining each subscriber employer's periodic monetary contribution to a master trust, the face amount of a life insurance policy on each enrolled employee's life to be purchased from a life insurer and assigned to the master trust and to be maintained in full force and effect until the death of the said employee, and periodic benefits to be received by each enrolled employee upon death, disability or retirement.

B. **life insurance cost computing means** for determining the periodic cost of said life insurance for all enrolled employees of said subscriber employer;

C. **administrative cost computing means** for estimating all administrative, legal, trustee, and government premium yearly expenses for said subscriber employer;

the apparatus being arranged to produce, in use, information defining each subscriber employer's monetary contribution to a master trust; the face amount of each life insurance policy to be issued and made payable to said master trust by a life insurer on the life of each enrolled employee and to be maintained in full force and effect until the death of the said employee; and periodic benefits payable by said master trust to each enrolled employee upon death, disability, or retirement.

The Boards opinion (T 0931/95)

A) First test

re claim 1

“The Board notes that the mere occurrence of technical features in a claim [claim 1] does not turn the subject-matter of the claim into an invention within the meaning of Article 52(1).” ⇒ **rejection**

re claim 5

“In the Board’s view a computer system suitably programmed for use in a particular field, even if that is the field of business and economy, has the character of a concrete apparatus in the sense of a physical entity, man-made for a utilitarian purpose and is thus an invention within the meaning of Article 52(1) EPC.” ⇒ **skip to second test**

The Boards opinion (T 0931/95)

B) Second test

re claim 5

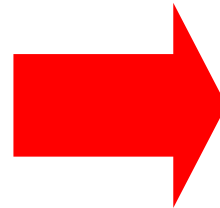
The Board, when turning to inventive step, looked at the contribution of the invention to the prior art. However, the differences between the claimed invention and the prior art only resided in business considerations, i.e. in non-technical considerations.

The board further considered that, since “an invention” must have a technical character, the existence of an inventive step required that such inventive step had to be “technical”.

Since the only contribution of the invention was non-technical, it could not contribute to inventive step. ⇒ **not patentable**

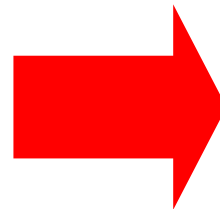
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Apparatus claims
(in particular a computer
system)



Technical per se;
invention within the
meaning of Art. 52 EPC

method claims



technical or not technical
invention within the
meaning of Art 52 EPC if
at least one criteria of the
following rules of thumb
is satisfied

Rules of Thumb

The invention is in principle patentable, if **at least one** of the following criteria is satisfied:

- the **underlying problem** has a **technical character**
- **means** used to solve the underlying problem are **technical by nature**
- the **solution** of the problem entails a **technical effect**
- the inventive **solution** of the problem involves **technical considerations** which imply a technical object
- the computer program entails a **technical effect which goes beyond the normal physical interaction** between computer and program when the program is loaded or running on the computer

Examples of technical problems/contributions (1)

- The invention allows for faster/simplified/more efficient computing (improved algorithm and/or improved data arrangement)
- A single data structure is adapted for optimized use with different processes
- Less working memory is required
- In network-related inventions, communications with low bandwidth can be used without undue lengthiness (data compaction and the like)
- Reliability/safety in computer communications/use is improved

Examples of technical problems/contributions (2)

- The invention generates data/controls useful for a physical process or machine
- Low level programming (firmware, operating system) having an effect on the internal behavior of the computer
- Management of the computer resources, esp. share of these resources by different programs
- Improvement of user interface (except purely aesthetical improvements)

Strategy

Claims for business methods may be divided into three groups:

- (1) claims for a method of doing business in abstract, i.e. not specifying any apparatus used in carrying out the method
- (2) claims which specify computers, computer networks or other conventional programmable digital apparatus for carrying out at least some steps of the method
- (3) claims which specify other apparatus e.g. mobile phones, telecommunication networks or radio transmitters

Recommendation

with respect to group (1), reconsider filing with the EPO or try to redraft the application so that the method fits into group (2) or (3)

with respect to groups (2) and (3), apply the **rule of thumb** relating to software patents; if you can answer one of these questions with yes, the invention is patentable in accordance with the EPC, provided the subject matter is novel and inventive

Claim Language

- A method for operating a data processing system to provide
- An apparatus for controlling a ... system comprising:
 - (a) a data processing means which is arranged to
 - (b) computing means for determining ...
- A computer system for comprising
- A computer program
- A computer program “product” or “element” ...
- A data structure on a medium for use with ...(a reading device)...

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Claims granted in by the USPTO vs. the corresponding claims granted by the EPO

Colbert Patent US 5,485,510 vs. EP 0 590 861 B1

1. In a database system for authorizing a credit/debit card (CDC) expenditure, a method for authorizing credit/debit for a purchase of goods or services comprises:

receiving data in the database over a first telecommunications connection to the database from a CDC holder at a first location, the data identifying a specific CDC;

determining whether the CDC is authorized to incur an expenditure;

transmitting an authorization to incur the expenditure over a second telecommunications connection from the database to a vendor at a second location, wherein transmitting the authorization is responsive to a determination that the CDC is authorized to incur the expenditure and includes a limit of allowed expenditure generated by the database for a transaction; and

wherein the data identifying the CDC is not provided to the vendor.

Claims granted in by the USPTO vs. the corresponding claims granted by the EPO

Colbert Patent US 5,485,510 vs. EP 0 590 861 B1

1. A method for authorizing a purchase of goods or services, comprising:

responsive to receiving in a database for authorizing a credit/debit card (CDC) expenditure data from a holder identifying a specific CDC,

determining whether the CDC is authorized to incur an expenditure;

transmitting an authorization to incur the expenditure over a second telecommunications connection from the database to a vendor at a second location, wherein transmitting the authorization is responsive to a determination that the CDC is authorized to incur the expenditure and includes a limit of allowed expenditure generated by the database for a transaction; and

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EP 0 590 861 B1

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wherein the data identifying the CDC is not provided to the vendor.

Ginsberg Patent: US 5,857,176

7. A method for providing a real time index corresponding to a pre-select portfolio of fixed income securities spanning a specified term of maturity dates comprising the steps of:

- collecting market price data on a proper set of fixed income securities corresponding to the specified term of maturity dates from the close of trading including bid, ask and trade transaction data;

- collecting real time price data on current trades forming a subset of securities within said proper set;

- iteratively qualifying the data to insure individual price information reflects true market determined pricing;

- iteratively processing said proper set of qualified data calculating a term structure of spot interest rates spanning the maturities of said proper set of data;

- updating said term structure with real time price data wherein said term structure is shifted in accordance with market shifts as reflected in said real time price data; and

- determining a composite price of said portfolio of pre-select fixed income securities in accordance with said updated term structure wherein said portfolio is expressed in terms of an index having a price, yield to maturity and duration.

EP 0 573 991 B1 (granted Jan. 16, 2002)

1. A method for operating a data processing system to provide an index corresponding to a pre-select portfolio of fixed income securities spanning a specified term of maturity dates comprising the steps of:

- collecting market price data on a proper set of fixed income securities corresponding to the specified term of maturity dates from the close of trading including bid, ask and trade transaction data;

- collecting incoming asynchronous price data within seconds of actual changes in a security price on current trades in terms of offer, bid and trade values forming a subset of securities within said proper set;

- qualifying the data to insure individual price information reflects true market determined pricing;

- processing said proper set of qualified data to calculate a term structure of spot interest rates spanning the maturities of said proper set of data;

- updating said term structure using said incoming asynchronous price data, wherein said term structure is shifted in accordance with market shifts as reflected in said incoming asynchronous price data;

- wherein said updating of said term structure includes taking a convex combination of said incoming asynchronous price data for updating said term structure of other price data that is not current; and

- determining a composite price of said portfolio of pre-select fixed income securities in accordance with said updated term structure wherein said portfolio is expressed in terms of an index having a price, yield to maturity and duration.

Amendments to claim 7 of the Ginsberg Patent to obtain claim 1 of EP 0 573 991 B1

[7] 1. A method for operating a data processing system to [providing] provide an [real time] index corresponding to a pre-select portfolio of fixed income securities spanning a specified term of maturity dates comprising the steps of:

collecting market price data on a proper set of fixed income securities corresponding to the specified term of maturity dates from the close of trading including bid, ask and trade transaction data;

collecting [real time] incoming asynchronous price data within seconds of actual changes in a security price on current trades in terms of offer, bid and trade values forming a subset of securities within said proper set;

[iteratively] qualifying the data to insure individual price information reflects true market determined pricing;

[iteratively] processing said proper set of qualified data [calculating] to calculate a term structure of spot interest rates spanning the maturities of said proper set of data;

updating said term structure [with real time] using said incoming asynchronous price data, wherein said term structure is shifted in accordance with market shifts as reflected in said [real time] incoming asynchronous price data; [and]

wherein said updating of said term structure includes taking a convex combination of said incoming asynchronous price data for updating said term structure of other price data that is not current; and

determining a composite price of said portfolio of pre-select fixed income securities in accordance with said updated term structure wherein said portfolio is expressed in terms of an index having a price, yield to maturity and duration.

Granted claim of EP 1 029 311 B1

A credit card system comprising means for maintaining a pool of credit card numbers which share identical formatting and means for assigning at least one credit card number from said pool to be a master credit card number, characterized in that there is provided **means for assigning** a credit card number from said pool to be a limited-use credit card number which is deactivated by a **deactivating command** upon a use-triggered command upon a use-triggered condition subsequent, and means for associating said master credit card number with said limited-use credit card number while ensuring that said master credit card number cannot be discovered on the basis of said limited use credit card number.

(the gist of the invention was to generate, in association with a real credit card number, a temporary, virtual credit card number limited to a single payment transaction via the Internet, so that interception of that number causes no harm)

Refused claim of EP 1 139 245 A1 (still pending)

A fixed-odds betting system comprising:

- A user terminal operable to accept parameters, input by a user, relating to a fixed-odds bet on an aspect of a **financial market**; and
- A central processing machine having a data feed to a source of data **concerning a financial market** and means operable to calculate the fixed odds for the bet, based on at least some of the parameters input by the user and the data obtained from the data feed.

(The gist of the invention is to allow people to make bets on financial instruments such as stock values, with a case-by-case computation of the bet amount so that a winner benefit is always e.g. 100 Euros – prior art concerning horse race betting was present)

Examples of patentable subject-matter and allowable claim language (T 1173/97)

1. **A method** for resource recovery in a computer system running an application (56 A) which requests a work operation involving a resource, said method comprising the steps of:

- implementing a commit procedure for said work request;
- in case the said commit procedure is not completed due to a failure, notifying said application (56 A) after some time that it can continue to run, whereby said application (56 A) need not wait for resynchronisation; and
- while said application (56 A) continues to run, resynchronizing said incomplete commit procedure for said resource asynchronously relative to said application (56 A).

14. **A computer system** comprising

- an execution environment for running an application (56 A) and;
- means for implementing a commit procedure, especially a two-phase commit procedure for said application (56 A);
- characterized by
- means for notifying said application to continue to run in the event said commit procedure fails before completion, whereby said application need not wait for said commit procedure to be completed; and
- means for resynchronizing said incomplete commit procedure asynchronously relative to said application.

Examples of patentable subject-matter and allowable claim language (T 1173/97)

20.A computer program product

directly loadable into the internal memory of a digital computer,
comprising software code portions for performing the steps of claim 1
when said product is run on a computer.

21.A computer program product

stored on a computer usable medium, comprising:

computer readable program means for causing a computer to control an execution of an application (56 A); computer readable program means for causing the computer to implement a commit procedure, especially a two-phase commit procedure for said application 56 A);

computer readable program means for causing the computer to notify said application (56 A) to continue to run in the event said commit procedure fails before completion, whereby said application (56 A) need not wait for said commit procedure to be completed; and

computer readable program means for causing the computer to resynchronize said incomplete commit procedure asynchronously relative to said application.

Examples of patentable subject-matter and allowable claim language (T 0935/97)

1. A method in a data processing system for displaying information, wherein said data processing system includes a display and an operating system, said method comprising the steps of:

- displaying information within a first window in said display using information display software;

- detecting a second window displayed in said display at a location that obscures a portion of said information displayed in said first window;

- notifying said information display software of the detection; and

- displaying in said first window said portion of said information that had been obscured by said second window, including moving said portion of said information that had been obscured by said second window to a location within said first window that is not obscured by said second window, using said information display software.

Examples of patentable subject-matter and allowable claim language (T 0935/97)

5. A data processing system for displaying information, wherein said data processing system includes a display, and an operating system, said data processing system comprising:

- means for displaying information within a first window in said display utilising information display software;

- means for detecting a second window displayed in said display at a location that obscures a portion of said information displayed in said first window;

- means for notifying said information display software that said portion of said information within said first window is obscured by said second window; and

- means within said information display software for displaying in said first window said portion of said information that had been obscured by said second window,

- wherein said information in said first window previously obscured by said second window is moved to a location within said first window that is not obscured by said second window.

Conclusion and prospective aspects

- Role of patent attorney : ability to locate a technical effect and to express it in the proper way**
- Filing strategies : take a filing date and delay as much as possible ? (PCT)**
- EU draft directive : removing “computer programs” from excluded inventions?**
- Patent law harmonization : “Technical effect” vs. “Utility” – any middleway ?**

This is the end!

Remark:

If this presentation does result in that you will leave the room at the end, this presentation method has a technical effect – change of the room content – and is, therefore, in principle patentable!!