

This document includes some recent decisions of the EPO in 2016 with regards to software related inventions and shows relevant extracts from the respective decisions.

T 0155/12 () of 7.4.2016

European Case Law Identifier: ECLI:EP:BA:2016:T015512.20160407

System and method for providing electronic ticket, and electronic ticket vending apparatus and mobile telephone therefor

Clarity (no)

Inventive step (no)

Added subject-matter (yes)

Application number: 04090329.6

IPC class: G07F 19/00, G06F 17/60, G07B 15/00, G07C 9/00

Applicant name: NEC Corporation

Cited decisions: T 0641/00

Board: 3.4.03

<http://www.epo.org/law-practice/case-law-appeals/pdf/t120155eu1.pdf>

Claim 1 according to the main request reads as follows:

"An electronic ticket providing system for providing electronic ticket information from an electronic ticket vending apparatus to a mobile telephone through a communication network, wherein:

the electronic ticket vending apparatus comprises:

control means for controlling distribution of electronic ticket information to a mobile telephone, the electronic ticket information containing:

formal ticket data comprising authentication information for admission, a ticket notation item, and authentication information for acquisition of information for a ticket owner; and

provisional ticket data comprising the ticket notation item and authentication information for acquisition of information for a ticket purchase requester; and wherein

the control means of the electronic ticket vending apparatus is configured to transmit the formal ticket data and the provisional ticket data separately; and

the mobile telephone comprises:

internal memory;

means for reading on and writing to a removable storage medium; and

storage control means for

receiving from the electronic ticket vending apparatus the electronic ticket information, and

controlling storage of the formal ticket data in the storage medium and the provisional ticket data in the internal memory."

2.2 Clarity

Claim 1 lacks clarity in that a number of expressions are used which are considered to have no clearly defined meaning or to be confusing, contrary to Article 84 EPC 1973. In particular the expressions "ticket notation item" for what seems to be information about the event to which the ticket provides admission and "ticket purchase requester" for what seems to be a person who intends to buy a ticket, possibly for a different event, are considered unclear.

Moreover, the expression "provisional ticket data" is considered confusing as it implies data relating to a ticket that is "provisional", ie valid but not final, whereas from the description it would appear to merely be information about a coming event (cf page 7, lines 17 to 25).

Furthermore, the expression "authentication" is used where rather identification or authorization takes place.

2.3.1 Novelty

Document D1 provides a subdivision of the electronic ticket information with the mobile telephone storing the formal ticket data in a removable storage medium (IC card) with an inherent higher security and the provisional ticket data in the internal memory with lower security.

Not disclosed in D1 is that the formal ticket data ("specific electronic information") also comprises a "ticket notation item" (eg event information) and "authentication information for acquisition of information for a ticket owner", and that the provisional ticket data ("related

information") also comprises "authentication information for acquisition of information for a ticket purchase requester".

Hence, the claimed data has more data fields, and thus a different structure, and different information content, and thereby a different physical form. The data as claimed thus differs from that of D1. Moreover, in consequence the control means for transmitting and storing this data differ from those of D1 as well. Accordingly, in the board's judgement the subject-matter of claim 1 is **new over D1**.

2.3.2 Inventive step

For assessing the presence of an inventive step, however, it needs to be determined whether this difference in structure and information content of the data is technical. If not, it cannot support the presence of an inventive step.

In the board's judgement, **the difference in information content as claimed is not technical.** The information content of data eg **whether it is general information about an event or eg an identification code providing access to an event as such does not render the data technical.**

It is noted that **if the claimed subject-matter, for instance in the case of an identification code providing access to an event, were to further define the actual technical use of the code for providing access to the event, then this may render it technical.** However, in the **present case claim 1 does not define any such specific technical use of the data, which could render it technical.**

Accordingly, only the structure and physical form of the data is technical as discussed above.

The **underlying consideration for distributing electronic ticket information lies in the field of schemes for doing business.**

Schemes for doing business shall not be regarded as inventions within the meaning of Article 52(1) EPC, in accordance with Article 52(2) EPC, and are therefore deemed to be non-technical.

The **claimed invention concerns the technical implementation of a scheme for doing business.**

According to established jurisprudence, an invention consisting of a mixture of technical and non-technical features and having technical character as a whole is to be assessed with respect to the requirement of inventive step by taking account of all those features which contribute to said technical character whereas features making no such contribution cannot support the presence of inventive step. Where the claim refers to an aim to be achieved in a non-technical field, eg in the field of business schemes like in the present case, this aim may legitimately appear in the formulation of the problem as part of the framework of the technical problem that is to be solved, in particular as a constraint that has to be met (cf "Case Law of the Boards of Appeal of the EPO", 7th Edition 2013, I.D.9.1; T 641/00 (OJ EPO 2003, 352), Reasons, points 3 to 7).

Accordingly, having regard to the distinguishing features over D1 above, **the technical problem to be solved may be formulated as to technically implement, using technical means, the distribution of the electronic ticket information.**

All steps of the underlying business scheme, in particular which data are to be distributed, are, thus, part of the information provided to the technician in charge of the technical implementation and do as such not contribute to inventive step.

The technical implementation as claimed consists in providing a corresponding data structure and physical form.

This solution is obvious for a skilled person, it being generally known to provide different information in different data fields.

T 1948/13 () of 24.2.2016

European Case Law Identifier: ECLI:EP:BA:2016:T194813.20160224

System and method for presentation of data streams

Novelty - (yes)

Inventive step - (yes)

Application number: 10181052.1

IPC class: G06T 11/20

Applicant name: Given Imaging Ltd.

Board: 3.5.04

<http://www.epo.org/law-practice/case-law-appeals/pdf/t131948eu1.pdf>

Independent claim 1 according to the appellant's sole request reads as follows:

"1. A method for presentation of a data stream (210), said method comprising:

receiving a data stream from an in-vivo imaging device, the data stream comprising in-vivo images;

generating a summarized presentation (220) of the data stream (210), wherein said presentation (220) includes at least a spatially varying visual representation, said visual representation varying in color in accordance with color varying along the data stream (210), said visual representation comprising a series of pixel groups of color, each pixel group summarizing color data of one or more image frames from the data stream (210), such that changes in color may be used to identify passage through a specific anatomical site, wherein

for each image frame, the summarized color data is an average color value calculated from a defined area that is smaller than the area of the frame; and

displaying the summarized presentation."

The invention

2. The present invention relates to the presentation on a display of a data stream of in-vivo images obtained, for example, from a swallowed endoscopic capsule capturing images from the gastrointestinal tract. The invention relates in particular to the display of additional information for the purpose of helping a physician reviewing the in-vivo images to determine the location (inside the gastrointestinal tract) at which a given image was taken.

5. The expression "such that changes in color may be used to identify passage through a specific anatomical site" introduced a functional limitation defined as a result to be achieved. However, in the present case, the board considers that this limitation meets the requirements of clarity and support of Article 84 EPC because it is sufficiently clear for the skilled person when this limitation is met (i.e. when the colour variation in the displayed "visual representation" makes it possible for a normally skilled physician to identify passage through a specific anatomical site) and because the claimed subject-matter could not be defined more precisely without unduly restricting the scope of the invention. It is established jurisprudence of the boards of appeal that when these conditions are met such functional features are permissible (see point II.A.3.4, first paragraph, of Case Law of the Boards of Appeal of the European Patent Office, 7th Edition 2013).

Novelty over D1 - Articles 54(1) and (3) EPC

7. The board concurs with the appellant that D1 does not disclose the feature of claims 1 and 9 that the average colour value is calculated "from a defined area that is smaller than the area of the frame". Indeed, D1 states that average colours are acquired "from the individual frames" and "frame by frame" (see paragraph [0066]). There is no disclosure, not even an implicit one, that the average colour could be calculated from an area smaller than the area of a frame.

8. Hence, the subject-matter of independent claims 1 and 9, and of their dependent claims 2 to 8 and 10 to 13, is novel in view of D1

Novelty over D3 - Articles 54(1) and (2) EPC

9. D3 is a publication on the utility of capsule endoscopy in obscure gastrointestinal bleeding. D3, published in a medical journal, was written by a physician for other physicians. It explains inter alia how to review the recorded stream of in-vivo images received from an

endoscopic capsule and displayed on a computer screen of a workstation running specialised software (see screenshots shown in figures 2 and 3).

...

There is no disclosure in D3 of calculating average colour values from images, let alone from an area smaller than a whole frame. There is also no mention in D3 that the average colour of images could be used for identifying passage through a specific anatomical site.

Hence the subject-matter of claim 1 is novel over D3.

Inventive step in view of D3 - Article 56 EPC

10. Technical effect and objective technical problem

In the Reasons for the decision under appeal (under point 4.1.2), the examining division explained with respect to the then second auxiliary request that the description of the application did not indicate any particular technical effect achieved by the distinguishing feature of calculating the average colour value from a defined area smaller than the area of the whole frame. The examining division thus concluded that the objective technical problem had to be regarded as being to provide a particular summarised colour of a frame of the video.

The appellant argued that this distinguishing feature achieved the technical effect of making it possible for an observer to readily identify the colour changes and hence the passage through different anatomical sites (see last two paragraphs on page 3 of the statement of grounds of appeal).

The board concurs with the examining division that the above technical effect alleged by the appellant was not achieved by the features in claim 1 of the second auxiliary request underlying the appealed decision because the wording of the claim did not ensure that the "average color value" was calculated for a sufficient number of frames and over a "defined area" sufficiently large to make it possible to identify passage through different anatomical sites. For instance, the wording of claim 1 did not rule out that the average colour value could be calculated from only very sparsely distributed frames (e.g. every 1000th frame) and/or over a very small defined area (e.g. over only one pixel). In such cases, the alleged technical effect would not have been achieved. In other words, the alleged technical effect was not achieved over the whole breadth of the claim.

Claim 1 according to the present sole request differs from claim 1 of the second auxiliary request underlying the appealed decision by the additional text "such that changes in color may be used to identify passage through a specific anatomical site".

In the board's view, this additional text implies that the average colour value is calculated over a sufficient number of frames and over a sufficiently large area of each of these frames for the colour variation in the displayed "visual representation" to make it possible for a normally

skilled physician to identify passage through a specific anatomical site. In view of this limitation, the board considers that the **technical effect alleged by the appellant is achieved over the whole breadth of present claim 1.**

Hence the board considers that the **objective technical problem** should be formulated, without pointers to the solution, as **how to make it possible for an observer to readily identify the passage through different anatomical sites.**

11. Obviousness

In D3, the identification of passage through different anatomical sites is performed by the physician by looking for visual clues in the stream of in-vivo images (see the paragraph bridging the left and right columns on page 118 of D3). These visual clues may be the presence of stool indicating that the colon has been entered or visually easily identifiable landmarks, such as the esophagogastric junction, the beginning of the duodenum or the ileocecal valve. Once these landmarks have been spotted, the physician marks them with corresponding thumbnails.

The board notes that D3 contains much advice on how to visually detect passage through different anatomical sites in the gastrointestinal tract, but that none of it is based on the average colour of the in-vivo images.

The board thus considers that **D3 does not suggest using the average colour of frames to identify passage through different anatomical sites and to display it in a spatially varying visual representation.** Nor is there any indication in the documents cited in the appealed decision and published before the priority date of the present application (i.e. those which are prior art under Article 54(2) EPC) that it was part of the skilled person's common general knowledge.

12. Conclusion

For the above reasons, the board is of the view that it would have required an inventive step for the skilled person to arrive at the method of claim 1 from D3 alone.

T 2095/10 (Tracking liquid food production/TETRA LAVAL HOLDINGS & FINANCE) of 22.10.2015

European Case Law Identifier: ECLI:EP:BA:2015:T209510.20151022

A method of tracking in production in a plant for liquid foods

Inventive step - (no)

Application number: 03811173.8

IPC class: G06F 17/30

Applicant name: Tetra Laval Holdings & Finance S.A.
Cited decisions: J 0006/98

Board: 3.5.07

<http://www.epo.org/law-practice/case-law-appeals/pdf/t102095eu1.pdf>

2. The invention

2.1 The invention relates to tracking production in a liquid food production plant. As explained on page 1, lines 8 to 15, of the published application, in food production plants there is a need for some form of tracking so that it is possible to obtain information about the raw materials that went into a particular finished product. Such tracking capabilities may be required by law. In certain food production plants, such as those within the meat industry, tracking can be performed in a simple manner by marking food items with food-approved stamps which can be read off both manually and by machine. But this approach is not suitable for liquid food plants.

2.2 For liquid food plants, such as dairies and juice factories, one prior-art tracking method allocates to each transport of a quantity of liquid food within the plant a time and date stamp of the start and stop times of the transport (see page 1, lines 16 to 23, of the published application). The required information can then be obtained by comparing different time and date stamps. This method is said to have the drawback that it cannot be employed if a transport, for some reason, is delayed.

2.3 The background section of the application further discusses the "batch identification method", which is used extensively within the pharmaceuticals industry. This method is said to be too inflexible for use in the dairy industry, in which it is not uncommon to fill a tank (corresponding to one batch) and simultaneously empty that tank (corresponding to another batch).

2.4 The liquid food production plant considered in the application includes production units in the form of processing equipment or tanks, and conduits for transport of liquid food to and from production units. According to the claimed invention, tracking is performed by allocating identities to production units, to liquid food quantities and to transfers of a liquid food quantity from one production unit to another. These identities are registered in a database. From the content of this database visual records of the progress of liquid food quantities may be generated.

Claim 1 of the main request reads as follows:

"A method of tracking progress of liquid food through a liquid food production plant including production units (1), each production unit consisting of processing equipment or a tank, and conduits for transport of liquid food to and from production units, the method comprising the steps of:

allocating a respective identity (2) to each production unit (1) in the plant and registering the identities (2) in a database;

allocating to each liquid food quantity (3) in the production plant a respective identity (4) representative of the quantity and the product content (5) of the liquid food quantity (3), and registering the identities (4) in the database;

in the course of progress through the production plant liquid food quantities being combinable and/or divisible to form new liquid food quantities having corresponding identities (4) allocated thereto;

allocating to each transfer of a liquid food quantity from a source production unit (1) to a destination production unit an event identity (7) representative of the liquid food quantity transferred and the source and destination production units, and registering the event identities (7) in the database;

and tracking the progress of the liquid food quantities (3) through the production plant by reference to the production unit identities (2), the event identities (7) and the liquid food quantity identities (4) registered in the database, and producing a visual record thereof."

3. Main request - inventive step

3.1 The Examining Division found the subject-matter of claim 1 to lack inventive step essentially because **the claim defined an obvious implementation, based on conventional data processing and data storage means, of a non-technical organisational or administrative procedure.**

3.2 Claim 1 relates to **a method of tracking the progress of liquid food quantities through a production plant.** The production plant comprises production units which include processing equipment and tanks, and conduits for transport of liquid food to and from production units. As liquid food quantities progress through the production plant, they are combined or divided to form new liquid food quantities, and they are transferred from source production units to destination production units.

The Examining Division did not cite prior art showing that such liquid food production plants were known at the priority date of the present application. However, the Board considers liquid food production plants defined at this level of generality to be notorious knowledge in the sense that it cannot reasonably be disputed that such production plants existed at the relevant date. Dairy factories, for example, undoubtedly existed, and such factories comprised processing equipment, tanks and conduits, and at certain points in the production process food quantities were combined or divided. In addition, the appellant agreed that such liquid food production plants were known (see e.g. paragraph 7.6.1 of the appellant's letter dated 22 September 2015).

3.3 According to the appellant, the claim term "tracking" referred to producing a record of the progress of liquid food quantities through the liquid food production plant. The term implied that the time intervals during which transfer events occurred were recorded as well, because

when tracking an object it was useless to know the location of the object without knowing the time at which the object was at that location.

Since the application as filed discloses in Figure 2 and on page 5, lines 1 to 3, that the recorded data includes time intervals during which transfer events occurred and since, moreover, the filing of the second auxiliary request shows that the appellant was willing to explicitly recite this feature in the independent claim, for the purpose of assessing inventive step the Board accepts the appellant's interpretation of "tracking".

3.4 With this interpretation of claim 1, the Board agrees with the appellant that the **method of claim 1 is not merely the obvious implementation of a non-technical organisational or administrative procedure that is performed independently of the physical process taking place in the liquid food production plant. *In particular, the claimed method provides data about a technical process in that it collects and records start and stop times of transfer events occurring during the food production process.***

However, as set forth below and in line **with the appellant's position that the recording of time intervals is implicit in the well-known notion of "tracking"**, the Board considers that this technical feature alone **cannot support an inventive step**.

3.5 In the Board's view, a notorious liquid food production plant as discussed in point 3.23.2 above is a suitable starting point for the assessment of inventive step.

As explained in the background section of the application on page 1, lines 8 to 11, in food production plants there is, and at the priority date was, a general need, often as the result of legislation, for some form of production tracking. In the Board's view, the most basic form of tracking of the production process is keeping a log of the relevant production events together with their start and stop times. At the priority date, the skilled person would have stored such a log in a (computer-implemented) database.

In the case of a liquid food production plant, typical production events include the transfers of liquid food quantities from one production unit to another. **In order to log such transfer events, it is an obvious possibility to allocate to each production unit a production unit identifier, i.e. an "identity", and to record a transfer event by recording the identities of the source production unit and of the destination production unit. It is further obvious to record the amount and content of the liquid food transferred, as these are essential characteristics of the transfer event.**

3.6 Claim 1 specifies that, in addition to the allocation of identities to production units, identities are also allocated to each transfer (event) and to each transferred liquid food quantity.

Since a transfer event is already uniquely determined by the identities of its source and destination production units in combination with the time interval during which the transfer took place, **the allocation of "event identities" to transfer events is merely a matter of administrative convenience**. Such identities may be allocated (and registered in the database) at the time the transfer events are registered, but may equally be allocated at a later time.

Similarly, each liquid food quantity transferred between production units is uniquely identified by the corresponding transfer event. The allocation of separate "liquid food quantity identities" to liquid food quantities, at the time the transfer events are registered or later, is therefore likewise a matter of administrative convenience. If the amount and content of transferred liquid food are recorded as part of the transfer event data, such identities will be "representative of the quantity and the product content of the liquid food quantity" as specified in claim 1.

The Board therefore considers that the claimed steps of **allocating identities to transfer events and to liquid food quantities**, whether they are performed during or after production, **do not technically improve or control the claimed tracking method but constitute non-technical administrative measures having an obvious implementation.**

3.7 Claim 1 further specifies that a "visual record" of the recorded information is produced. However, it is **obvious to communicate the recorded information for cognitive processing to a user in a "visual" form.**

3.8 The appellant argued that tracking liquid food production in a production plant wherein liquid food quantities were combinable and/or divisible and wherein one liquid food quantity could be delivered into a tank while simultaneously another liquid food quantity could be discharged from the tank involved considerable technical difficulties. The skilled person would therefore consider the option of modifying the production process to make it suitable for the batch identification method (see point 2.32.3 above).

The Board need not decide whether the skilled person would seriously consider replacing the conventional liquid food production process with a batch process, which would lead to a considerable loss in production efficiency. Even if that were an option for the skilled person, he would also (and foremost) attempt to implement a method of tracking production without modifying the existing production process. As explained in points 3.53.5 and 3.63.6 above, the Board considers that the skilled person would, essentially as a matter of course, keep a log of the production events taking place in the production plant and thereby arrive at the essence of the claimed tracking method.

3.9 For these reasons, the subject-matter of claim 1 of the main request lacks inventive step (Articles 52(1) and 56 EPC).

T 1722/11 (Delivery of content/APPLE) of 18.12.2015

European Case Law Identifier: ECLI:EP:BA:2015:T172211.20151218

Method and system for message delivery management in broadcast networks

Claim for a computer program defined by reference to a claimed method – unclear

Examples of recent 2016 Board of Appeals decisions related to Software Innovations

Application number: 08156763.8
IPC class: H04L 29/06, G06Q 30/00, G06F 21/00, H04N 7/167
Applicant name: Apple Inc.

Board: 3.5.03

<http://www.epo.org/law-practice/case-law-appeals/pdf/t111722eu1.pdf>

Claim 31 of the main request reads as follows:

"A computer program resident on computer-readable media and comprising a set of instructions arranged to cause a computer, or a suite of computers, to perform the method of any one of claim 16 to claim 30."

3. Claim 31 of the main request - clarity (Article 84 EPC)

3.1 Claim 31 of the main request (see point VII above) relates to a computer program resident on computer-readable media, in which the program is defined by reference to any one of method claims 16 to 30.

3.2 With reference to claim 16 (see point VII above), the board notes that the execution of the first step, i.e. "providing the content to users' devices via a communications network (4), said provision of content requiring usage of network resources", requires a coordinated interaction between various resources in the communications network, in particular between a content transmitter, a transmission channel, and a content receiver, in which each of these resources is at different, mutually remote locations. It is therefore **unclear how this step can be executed solely by a (single) computer program, when run on a computer, and, hence, it is unclear to what extent this step defines the claimed computer program.**

The same applies to the last feature of claim 16, i.e. "wherein the parameters for delivery of at least one message to the user's device (6) include a schedule of times for delivery of the at least one message relative to use of the content by the user's device (6)", since this feature merely further specifies the parameters for delivery, without making it clear to what extent this specification of parameters defines or limits the claimed computer program.

Claim 31 therefore lacks clarity (Article 84 EPC).

T 1624/10 (Downloading software components / MICROSOFT) of
13.1.2016

European Case Law Identifier: ECLI:EP:BA:2016:T162410.20160113

Mechanism for downloading software components from a remote source for use by a local software application

Inventive step - (yes)

Application number: 03012830.0

IPC class: G06F 9/445

Applicant name: Microsoft Technology Licensing, LLC

Board: 3.5.06

<http://www.epo.org/law-practice/case-law-appeals/pdf/t101624eu1.pdf>

The independent claim 1 reads as follows:

"A method of downloading software components from a remote source to a software application (100) for providing updates or additions to the functionality of the application (100) via which a document (110) is opened by a user for editing, the method comprising the steps of:

attaching an Extensible Markup Language XML schema to the document (110), wherein the XML schema defines permissible data content, permissible data types and permissible data structures for the document,

annotating particular portions of the document (110) with XML structure associated with the permissible data content, the permissible data types, and permissible data structures for the particular portions of the document (110) as defined by the schema,

associating with XML elements making up the XML structure a plurality of software components, in the following referred to as solution, needed to provide a functionality to the application,

identifying and assembling the solution at a location remote from the document (110),

enabling the application (100) to request the solution to obtain the functionality provided by the plurality of software components upon initiation of editing the document (110) within an XML element associated with the solution, including

attaching a solution property (115) storing a solution ID to the document (110) for pointing to the solution, and

attaching a solution location (118) including a uniform resource locator URL for the solution to the document (110) for enabling the application (100) to locate the solution at the remote location (49),

downloading the plurality of software components from the location remote from the document to the application (100) for provision of the functionality."

4. Closest prior art

In the paragraph bridging pages 14 and 15 of the grounds for the appeal, the appellant states that the skilled person may not even consult D1 when looking for a solution to the problem mentioned in that paragraph. From this statement it is obvious that the appellant does not consider D1 to represent the closest prior art (CPA) but instead considers that the CPA is some method which is generally well known, although he does not describe it in any detail.

The board agrees that D1 does not form a suitable starting point for an inventive step discussion. Instead, the board holds that the closest prior art is given by the passage in the description as originally filed, page 2, lines 24-32, i.e. a method of downloading software components from a remote source (implied by the fact that installation packages are received) to a software application for providing updates or additions to the functionality of the application via which a document is opened by a user for editing.

5. Inventive step; Article 56 EPC 1973

5.1 The subject-matter of claim 1 differs from this CPA in that a plurality of software components needed to provide a functionality to the application and referred to as solution are associated with XML elements making up the XML structure of the document, the solution being identified and assembled at a location remote from the document and the application being enabled to request the solution upon initiation of editing the document within an XML element associated with the solution, by attaching a solution property storing a solution ID to the document for pointing to the solution and attaching a solution location including a URL for the solution to the document for enabling the application to locate the solution at the remote location, the plurality of software components being downloaded from the location remote from the document to the application for provision of the functionality.

5.2 The advantage of this approach, which advantage the board considers to constitute **a technical effect, is that computer memory is saved, given that a request for assembling components providing a certain functionality into a solution is only made on an "as needed" basis**, i.e. upon initiation of editing the document within an XML element associated with the solution.

5.3 This approach is not disclosed or rendered obvious either by the above CPA or by D1, neither of which makes use of the fact that a document is being edited within an XML element associated with a solution.

5.4 The subject-matter of claim 1 is therefore considered inventive

T 0339/13 (Interacting with virtual pets/IMMERSION) of 17.11.2015
European Case Law Identifier: ECLI:EP:BA:2015:T033913.20151117

METHODS AND APPARATUS FOR PROVIDING HAPTIC FEEDBACK IN INTERACTING WITH VIRTUAL PETS

Inventive step - main request (no)

Inventive step - auxiliary request (yes)

Application number: 02804680.3

IPC class: G06G 7/48

Applicant name: Immersion Corporation

Board: 3.5.06

<http://www.epo.org/law-practice/case-law-appeals/pdf/t130339eu1.pdf>

The invention

4. The application relates to what is referred to as a "virtual pet". It is disclosed that a virtual pet could be "any simulated creature or character, which may or may not have a 'real-life' counterpart". As a specific example of a pet which does, a cat is disclosed.

4.1 In general, the user ("owner") of a virtual pet is meant to interact with it in a way which resembles the interaction with a real pet. For example, if the virtual pet signals that it is "hungry", the owner is supposed to "feed" it and make it "happy". The virtual pet provides feedback, for instance in the form of visual or audio effects.

4.2 The application states that the feedback from the virtual pet relates to its "biological status" and explains that this is to be construed broadly as its "state of being", such as its "health or emotional state" .

4.3 **The virtual pet is "simulated" by a suitable software application**, which may be part of a stand-alone toy (such as those known as "Tamagotchi") or other hand-held device, or be executed remotely on a network resource. In the latter case, the feedback from the virtual pet is communicated to some "local device for interaction with the user.

4.4 The application is specifically concerned with a virtual pet which is capable of giving "haptic feedback" - explained as "any type of force feedback, such as tactile or kinesthetic feedback" - to produce, for instance, tactile sensations, such as vibrations or pulses.

The prior art

5. As mentioned above, the application itself acknowledges that virtual pets in general were known in the art (see, in particular, the references to "Tamagotchi" and "Neopets.com", loc.

cit.). D1 also states that virtual pets were known in the art before the present priority date. Moreover, D1 discloses a specific virtual pet in the form of a portable device which provides visual feedback on a display screen. D1 also discloses a toy which can actually perform (rather than only display) the relevant activities and behaviours by means of electronically controlled movements. In this embodiment, the portable device becomes a remote control.

6. The application also states that "haptic-enabled" user-interfaces such as computer mice were known in the art. Examples of such devices are known from D2, as are examples of specific kinds of haptic feedback. D2 also gives examples of kinds of haptic sensations (such as "vibration", "wobble", "jolt" or "button" forces) and their use in the context of games, for instance to evoke the feeling of an obstruction, a textured surface, an explosion, or a viscous fluid. The board notes that D2 is acknowledged in the description.

Claim interpretation

7. The claimed invention is directed at the production of a haptic effect as feedback on the "biological status" of a "virtual pet" and, more specifically, on its "health state". **It is evident that a virtual pet has neither a "biological status" nor a "health state" in the literal sense of these terms and that both terms can only refer to properties of a model, in particular a software program meant to evoke the illusion of a real pet.** The board therefore takes the terms **"biological status" and "health state"** to be metaphorical ones referring to the perception of a human observer in view of their expectations about the behavior of a real pet, especially a living animal. In technical terms, however, **both are essentially undefined parameters of the internal state of the virtual pet software or device.**

8. The claims refer to the "biological status having a haptic effect associated therewith" (emphasis by the board). The board takes this to refer to an **association chosen by the toy designer which per se does not imply any realism.**

9. It is stated in the description that the term "haptic effect" should be "construed broadly as encompassing any type of force feedback, such as tactile or kinesthetic feedback, that is deemed appropriate for conveying a particular biological status of the virtual pet". Notwithstanding this statement, however, the term **"haptic effect" must, in the board's understanding, be one which is meant to be felt rather than seen and which can be identified by touch rather than by sight.** Accordingly, the "user-interface object" specified in the claims is meant to be held or touched by the user so as to feel the haptic effect produced by the object. On the other hand, any part of the toy in question which the user is meant to touch or hold qualifies as the claimed user-interface object, including, for instance, the casing of a hand-held device.

10. In summary, **the board construes claim 1 of the main request as specifying a method of outputting, through some sort of "user-interface" and based on some signal meant to represent the pet's internal state, a "haptic sensation" which is selected to represent that state.**

11. Beyond that, claims 1 and 8 of the auxiliary request specify a physical interaction between the user and a device, according to which the device responds with a periodic vibration to the user moving a cursor back and forth over the display of the virtual pet.

Claim 1 of the main request reads as follows:

"A method for providing haptic feedback in interacting with virtual pets, comprising:

receiving a signal relating to a biological status of a virtual pet, wherein the biological status refers to a health state of the virtual pet, the biological status having a haptic effect associated therewith;

outputting, to a user-interface object, the associated haptic effect based on said received signal; and

displaying the virtual pet on a display screen that is coupled to the user-interface object;

wherein the haptic effect is a pulsing sensation, wherein the rate or magnitude of the pulsing sensation indicates the health state of the virtual pet."

Claim 1 according to the auxiliary request reads as follows:

"A method for providing haptic feedback in interacting with a virtual pet, comprising:

controlling a virtual pet via a software application, wherein the virtual pet is a cat;

receiving a signal from the software application relating to a biological status of the virtual pet, wherein the biological status refers to a health state of the virtual pet, the biological status having a haptic effect associated therewith;

outputting, to a user-interface object, the associated haptic effect based on said received signal;

displaying the virtual pet on a display screen that is coupled to the user-interface object;

wherein the haptic effect is a pulsing sensation, wherein the rate or magnitude of the pulsing sensation indicates the health state of the virtual pet;

receiving input from a user, wherein the user moves a cursor back and forth over the display of the virtual pet; and

triggering, in response to the input, a purring sensation, wherein the purring sensation is delivered in the form of a periodic vibration;

wherein the magnitude and frequency of the periodic vibration vary with time depending upon the input from the user."

Inventive step

12. The decision under appeal assessed inventive step starting from D1, and the board agrees that this is a suitable choice. As explained above (point 10), the board considers that the movements of eyes, mouth or limbs of the virtual electronic pet according to D1 do not qualify as haptic feedback. Instead of a virtual electronic pet which the user is not supposed to handle, the board considers that the starting point for the assessment of inventive step must rather be a device which the user is supposed to hold. In D1, this is, in particular, the hand-held device displaying the virtual pet according to figure 9.

Main request

13. D1 discloses a method and apparatus for providing feedback to a user interacting with a virtual pet, the feedback relating to the virtual pet being "hungry, bored, dirty, sick, bad or tired". At least "hungry", "sick" and "tired" indicate "biological status" of the virtual pet, when broadly construed as explained above, and at least one of them ("sick") even specifically relates to the "health state" of the virtual pet.

14. Claim 1 of the main request thus differs from D1 in that it relates to a virtual pet

(a) being equipped to provide haptic feedback, and

(b) providing a "pulsing sensation, wherein the rate or magnitude of the pulsing sensation indicates the health state of the virtual pet".

15. As regards feature (a), the board takes the view that it is well-known in the art (see D2) to use haptic feedback in computer games so as to increase the player's perception of interacting with the "real thing".

15.1 Even though the particular games and game situations discussed in D2 do not include virtual pets, the board is of the opinion that the skilled person would consider, without exercising an inventive step, incorporating a haptic feedback assembly into other game devices simply in order to increase the variety of feedback modalities available to the interface designer.

15.3 .., the board concludes that **the provision of haptic feedback in a hand-held virtual pet such as that of D1 is, in itself, insufficient to establish an inventive step.**

16. As regards feature (b), the appellant argued in its grounds of appeal (page 4, point 5) that it "enhances the realism of the user's relationship" or interaction "with the virtual pet" and, during oral proceedings, argued that it increased the players' "engagement" with their virtual pets.

16.1 The board considers that **these problems are not technical, nor are they necessarily always solved, so that they are unsuitable for characterizing a technical effect** achieved by feature (b).

16.2 Whether players can be said to "engage" more in a given game will depend, inter alia, on how interesting entertaining or otherwise attractive the game appears. This however depends on an **entirely subjective assessment by players**. Therefore, whether players find a game more interesting, entertaining or attractive does not, in the board's judgment, constitute a technical effect of a new game or game device.

16.3 A haptic sensation generated in a game context might, in the board's view, be claimed to be "realistic" when it is derived from and is physically comparable to haptic sensations that arise in the real situation. In the present case however, the claims do not set out the specific phenomenon that the claimed "pulsing sensation" is to mimic, so that it is **impossible to assess whether an increased perception of "realism" is actually achieved by the claimed invention in this respect**. Even on the understanding that the pulsing sensation is meant to convey information about the pet's "health state" by evoking the perception of a heart beat, the board remains unconvinced, inter alia because the claimed invention does not explain how "rate or magnitude of the pulsing sensation" is meant to correlate with the perception of health and thus does not allow an assessment of whether the claimed invention could be said to evoke that perception in users in a reliable and reproducible manner. Therefore, the subject-matter of the claims of the main request does not realize the alleged increased "realism".

17. In the board's judgment, therefore, the **claims of the main request do not go beyond specifying the use of a known form of haptic feedback in a virtual electronic pet** such as that known from D1, which, as argued above, the board considers to be obvious in the light of D2, and therefore do not involve an inventive step in the sense of Article 56 EPC 1973.

Auxiliary request

18. The independent claims of the auxiliary request specify, in addition to those of the main request, that **the user interacting with the virtual electronic pet moves a cursor back and forth over the display of the virtual pet and, in response to this movement and varying with it, receives as haptic sensation a periodic vibration**. The claim further specifies that the virtual pet in question is meant to "be" a cat and the haptic feedback to evoke a "purring sensation".

18.1 This interaction is modelled on a real interaction of an owner with an actual pet, more specifically on the response of a cat to its owner petting it. From this perspective, the **board accepts the appellant's argument that the invention increases the similarity between the physical interaction between a user and its toy, the virtual pet, with that between an owner and his/her real pet**.

18.2 The board notes that the owner of a toy must be willing to accept the toy's behaviour as real. This applies to a virtual pet just as well as to other toys such as, for instance, a doll equipped with means to "speak" or to move its eyelids. The board agrees with the examining division that the **"increased realism" cannot be quantified, let alone measured, and**

considers that this makes it difficult in general to assess whether the goal of increased realism is actually achieved. However, the board accepts that it would, in individual cases, be possible to demonstrate whether this goal is achieved. In this regard, **the board considers that producing a toy that mimics reality is not a "simulation" in the same sense of this term used in science and engineering.** In the board's view, less is required for a toy to be perceived as real, or to resemble a real object, than from a simulation in science, manufacturing or system control to achieve its technical purpose. Having said that, the board is satisfied that the user of the **claimed method and apparatus has a sufficiently reliable and reproducible perception of physically interacting with a real pet** - if only in very general terms, given the breadth of the claim language and the lack of detail in the description.

18.3 **The board accepts as a technical problem in the context of virtual pets that of achieving the reliable and reproducible perception of a physical interaction with the real pet.** Moreover, the board finds that **the invention solves this problem with technical means, more specifically in terms of technical features of the device interface, namely a reciprocating cursor movement and haptic feedback.**

19. Returning to D1, the board notes that D1, apart from not disclosing any haptic feedback, also does not disclose any direct interaction between the user and the displayed pet in a way physically resembling an interaction with a real pet. D2, while disclosing the use of haptic feedback in the context of computer games in general, does not disclose its use in the context of virtual pets and therefore, in the board's view, does not suggest the specifically claimed interaction between the user and the virtual pet.

20. Therefore, the board concludes that the subject-matter of claims 1 and 8 of the auxiliary request **involves the required inventive step over D1 and D2**, either separately or in combination.

T 1512/10 (Digital DNA / LOGIN PEOPLE) of 29.10.2015

European Case Law Identifier: ECLI:EP:BA:2015:T151210.20151029

Method of validating a trusted computer system

Novelty - (yes)

Inventive step - (yes)

Application number: 04368072.7

IPC class: G06F 1/00

Applicant name: LOGIN PEOPLE

Board: 3.5.06

<http://www.epo.org/law-practice/case-law-appeals/pdf/t101512eu1.pdf>

Claim 1 reads as follows:

Process for securing the access to the resources of an Information Handling System (I.H.S.), said I.H.S. comprising a set of hardware components including information representative of the manufacturer, model and serial number of said hardware components, said I.H.S. further comprising an Operating System (O.S.) used for running applications and providing an Application Programming Interface (API) for accessing said information representative of the manufacturer, model and serial number of said hardware components, said process involving the steps of initiating a preliminary qualification process based on the detection of the components of said system, followed by the generation of a reference qualification signature;

a validation process subsequent to said qualification process comprising, prior to any transaction with or access to a remote server, a further detection of the components for the purpose of generating a new signature to be compared with said reference qualification signature,

characterized in that

said qualification process involves the steps of:

- detecting a set of components present within said system by using said Application Programming Interface for accessing said information representative of the manufacturer, model and serial number of said hardware components, and
- generating for each hardware component a Component Identification Data (CID) by concatenating said information representative of the manufacturer, model and said serial number, so as to complete a system qualification file (SQF) listing said components with corresponding Component Identification Data (CID);
- encrypting said system qualification file in order to create a reference qualification signature (RQS);
- transmitting and storing said reference qualification signature (RQS) on said remote server;

said validation process involves

- performing a new identification and detection of the hardware components and a subsequent generation of a new system qualification file;
- encrypting said new system qualification file in order to generate a checking signature;
- comparing said checking signature with said reference qualification signature (RQS) stored within said remote server and, in response to said comparison, allowing or denying access to said transaction with or said access to said remote server.

4. Novelty and inventive step; Articles 54 and 56 EPC 1973

4.1 The essential difference between the above mentioned well known re-activation process and the subject-matter of claim 1 is that **Windows XP only checks at login time whether the hardware on which it runs has substantially changed, whereas in the claimed process validation takes place prior to any transaction with or access to a remote server.**

4.2 This difference could conceivably **solve the problem of guaranteeing to Windows XP that transactions with a remote server cannot take place after a substantial hardware change.** However, exchanging any of the components which enter into the calculation of the hardware hash in Windows XP would require switching off the PC and restarting it after the change has taken place. This means that hardware changes only need to be checked by Windows XP after the PC has started and the user has logged in (either explicitly or automatically) in Windows. **No reason exists for the skilled person to perform such a check more frequently.** In particular, for the purpose of validating a Windows XP license, there is no need to detect a hardware change prior to each transaction with or access to a remote server. One therefore needs to look for a different problem that is solved by the distinguishing features of claim 1.

4.3 The board considers that there are in fact two problems solved by the features distinguishing the subject-matter of claim 1 from said well known prior art. The **first problem**, solved by the feature according to which validation takes place prior to any transaction with or access to a remote server, is to **introduce access control to the remote server instead of or in addition to license validation.**

4.4 The **second problem**, solved by using API calls for accessing information representative of the manufacturer, model and serial number of the hardware components, is to **simplify detection of hardware changes.**

4.5 For the purpose of assessing inventive step, it is sufficient in the present case to look at the first problem. According to the board, **this problem will not occur naturally to a skilled person looking at a system which detects hardware changes for the purpose of preventing abuse of a software license.** As a rule, **such a person would rather try to improve copyright-protection mechanisms.** In this respect, **having a remote server detect hardware changes instead of the copyright-protected software would actually be a step backward, since the license validation would fail if the server was unavailable.** And having the **remote server detect hardware changes in addition to the copyright-protected software, in order to provide secure access control to the remote server, would not come to the skilled person's mind, as it is quite unrelated to the product activation** of Windows XP, **which is a pure copyright protection mechanism.**

4.6 *There is therefore no reason why the skilled person would adapt said well known process in such a way that it corresponds to the subject-matter of the present claim 1.*

4.7 The subject-matter of the present claim 1 is consequently new and inventive (Articles 54 and 56 EPC 1973).

T 1126/11 (Tragbarer Datenträger/GIESECKE & DEVRIENT) of
8.1.2016

European Case Law Identifier: ECLI:EP:BA:2016:T112611.20160108

**Tragbarer Datenträger, System mit einem solchen Datenträger
und Verfahren zum Betreiben eines solchen Datenträgers**

Einheitlichkeit der Erfindung - (ja)

Anmeldenummer: 05012875.0
IPC-Klasse: G06F 9/48
Name des Anmelders: Giesecke & Devrient GmbH

Kammer: 3.5.06

<http://www.epo.org/law-practice/case-law-appeals/pdf/t111126du1.pdf>

Anspruch 1 des Hauptantrags lautet wie folgt:

"1. Verfahren zum Betreiben eines tragbaren Datenträgers (1), der einen integrierten Schaltkreis (3) aufweist und mit einem Endgerät (2) kommuniziert, wobei dem tragbaren Datenträger (1) von dem Endgerät (2) Kommandos übermittelt und vom tragbaren Datenträger (1) im Rahmen der Kommunikation mehrere Kommandos gemäß einer vorgegebenen Abfolge ausgeführt werden, dadurch gekennzeichnet, dass vom tragbaren Datenträger (1) wenigstens ein Kommando einer vorgezogenen Bearbeitung unterzogen wird, bevor sie [sic] gemäß der vorgegebenen Abfolge zur Ausführung ansteht."

1. Zusammenfassung der Erfindung

Die Anmeldung betrifft die vorgezogene Ausführung eines Kommandos auf einem tragbaren Datenträger mit integriertem Schaltkreis (z.B. einer Chipkarte mit Prozessor, s. Beschreibung Seite 6, Zeile 6-8; ursprünglicher Anspruch 15; Figur 1: 1 und 3). Die Kommandos kommen von einem elektronischen Endgerät (z.B. ebenfalls mit einem Prozessor ausgestattet; Zeile 15 und 16; Figur 1: 2 und 5) über eine beiderseitige Übertragungseinrichtung (Figur 1: 4 und 6)). Wenn nun nach solch einer vorgezogenen Ausführung das Kommando tatsächlich vom Endgerät an die Chipkarte übertragen wird, kann diese sofort das Ergebnis zurückübertragen. Das funktioniert nur, wenn es nur eine Kommandofolge gibt oder wenn die möglichen Kommandofolgen vorher so vereinbart wurden (z.B. zwischen den Herstellern des Endgeräts und der Chipkarte), dass die Kommandofolgen aus schon übertragenen Kommandos ermittelbar sind (Seite 9, Zeile 26 bis Seite 10, Zeile 19): Entweder fangen alle Kommandofolgen mit einem unterschiedlichen Kommando an oder sie unterscheiden sich nach mehreren Kommandos.

2. Zusammenfassung der Entscheidung

Die Anträge 1-5 aus der Beschwerdeschrift (Seite 1) werden folgendermaßen entschieden:

Antrag 1: Die Entscheidung wird aufgehoben. Die Nichtzulassung der Anträge wegen Regel 137(5) EPÜ war rechtswidrig, da die erforderliche Einheitlichkeit (Artikel 82 EPÜ 1973) vorliegt.

3. Nichtzulassung und fehlende Einheitlichkeit

3.1 Die Prüfungsabteilung hat von der Recherche an bis einschließlich zur Zurückweisungsentscheidung den Einwand erhoben, dass der ursprüngliche Anspruchssatz nicht einheitlich sei. Er enthalte vier Erfindungen.

3.2 Der Anmelder hat zusätzliche Recherchegebühren für die Erfindungen 2-3 bezahlt, jedoch nicht für die 4. Erfindung (siehe Schreiben vom 17. Januar 2008).

3.3 Der Anmelder hat während der Prüfungsphase zwei geänderte Ansprüche 1 eingereicht, die Anspruch 1 des zur Entscheidung stehenden Haupt- und Hilfsantrags bildeten. Sie enthalten beide das Merkmal einer Kommunikation mit einem Endgerät, das schon im ursprünglichen Anspruch 12 vorhanden war.

3.4 Da dieser zur nicht recherchierten 4. Erfindung gehört, hat die Prüfungsabteilung beide geänderte Anspruchssätze nach Regel 137(5) und (3) EPÜ nicht zugelassen und die Anmeldung wegen fehlender Ansprüche nach Artikel 78(1)c) und 113(2) EPÜ zurückgewiesen.

3.5 Regel 137(5) EPÜ ist die Entscheidungsgrundlage für diejenigen Fälle, in denen die Prüfungsabteilung prüft, ob nicht recherchierte Gegenstände mit der ursprünglich beanspruchten Erfindung oder Gruppe von Erfindungen durch eine einzige allgemeine erfinderische Idee verbunden sind. Wenn dies nicht erfüllt ist, so kann kein Patent erteilt werden. Einen Rückgriff auf Regel 137(3) EPÜ bedarf es hierfür nicht.

3.6 Was die Anwendbarkeit von Regel 137(5) EPÜ im vorliegenden Fall betrifft, **so beziehen sich die geänderten Patentansprüche zwar auf nicht recherchierte Gegenstände, sie sind aber mit der ursprünglich beanspruchten Erfindung oder Gruppe von Erfindungen durch eine einzige erfinderische Idee verbunden.**

3.7 Die im Recherchebericht und in der Entscheidung (Abschnitt 3) angegebenen vier Erfindungen des ursprünglichen Anspruchssatzes lauten:

1. Ursprüngliche Verfahrensansprüche 1-3, 5, 7, 11 und Datenträgeransprüche 14-15 betreffen die vorgezogene Bearbeitung von Operationen durch einen tragbaren Datenträger mit integriertem Schaltkreis.

2. Abhängige Ansprüche 4 und 6 schränken diese vorgezogene Bearbeitung auf die Leerlaufzeit des Datenträgers ein.

3. Abhängige Ansprüche 8-10 fügen dieser vorgezogenen Bearbeitung eine Ermittlung der wahrscheinlichen Abfolge von Operationen hinzu (z.B. auf Basis von bereits zur Ausführung anstehenden Operationen).

4. Abhängige Verfahrensansprüche 12, 13 und unabhängiger Systemanspruch 16 schränken die vorgezogene Bearbeitung auf eine Kommunikation des Datenträgers mit einem Endgerät ein. D.h. der Datenträger bekommt die Operationen ("Kommandos"), die er ausführen soll, von einem Endgerät übermittelt. Die vorgezogene Bearbeitung betrifft eine Operation, die der Datenträger vom Endgerät erwartet.

3.8 Zunächst ist festzustellen, dass die **Erfindungen 2 und 3 in Gänze und die Erfindung 4** bis auf den (einzigsten) Systemanspruch 16 aus Ansprüchen bestehen, die **vom Verfahrensanspruch 1 (d.h. Erfindung 1) abhängig** sind.

3.9 Es mag sein, dass im Einzelfall auch abhängige Ansprüche Erfindungen oder Gruppen von Erfindungen bilden. **Hier ist dies jedoch nicht der Fall. Beansprucht wird ein Gegenstand, der mit der ursprünglich beanspruchten Erfindung durch eine einzige erfinderische Idee verbunden ist.** Letztere wird am einzigen Ausführungsbeispiel deutlich, das eine Chipkarte in Kommunikation mit einem Endgerät zeigt (Seite 5, Zeile 16 bis Seite 11, Zeile 21, inklusive aller drei Figuren). Die übermittelten Kommandos betreffen hierbei eine Geldkartenzahlung (Seite 7, Zeile 24 bis Seite 8, Zeile 23). Die technische Aufgabe ist die Erhöhung der Ausführungsgeschwindigkeit des tragbaren Datenträgers, d.h. der Chipkarte (siehe Seite 2, Zeilen 9-11). **Folglich beinhaltet der Gegenstand der Erfindung, der als Lösung dieser Aufgabe beansprucht wird, eine einzige erfinderische Idee.**

3.10 Außer diesem Ausführungsbeispiel gibt es noch eine Verallgemeinerung der Erfindung im letzten Absatz der Beschreibung (Seite 11, letzter Absatz). Die Erfindung sei nicht nur anwendbar bei Wartezeiten auf das jeweils nächste Kommando eines Endgeräts, sondern auch bei sonstigen Wartezeiten, z.B. bei Schreibvorgängen in einen langsamen Speicher (wie einem EEPROM). Ein EEPROM übermittelt aber keine Kommandos an den integrierten Schaltkreis des Datenträgers, damit dieser sie ausführt, sondern erhält Kommandos von ihm, z.B. zum Beschreiben des Speichers. Außerdem solle die Erfindung nicht auf tragbare Datenträger beschränkt sein, sondern bei beliebigen Betriebssystemen oder sonstiger Software eingesetzt werden.

3.11 **Dieser letzte Absatz offenbart aber keine weitere Erfindung. Er deutet vielmehr nur andere Szenarien an, zu denen hin die Erfindung jedoch nur mit erfinderischem Zutun abänderbar wäre. Eine weitere Erfindung, die Anlass zu einer weiteren Recherche gäbe, wird in der Beschreibung nicht offenbart.**

3.12 Daher enthält die Anmeldung genau eine Erfindung im Sinne des Artikels 82 EPÜ 1973.

3.13 Für das weitere Verfahren weist die Kammer auf Folgendes hin: Was den ursprünglichen Anspruch 1 angeht, ist dieser zwar sehr breit formuliert und dadurch angreifbar mit Dokumenten aus den verschiedensten Teilgebieten der Informatik (siehe den Recherchenbericht). Diese belegen, dass vorgezogene Bearbeitung ein allgemein angewandtes Prinzip in

vielen Bereichen der Informatik ist. Allerdings betreffen die Dokumente aus dem Recherchenbericht nicht die Situation einer Kommunikation mit einem Endgerät, das Kommandos an einen tragbaren Datenträger sendet. Vielmehr wird z.B. in D1 (siehe Abstract auf Seite 117) die Situation eines Server-Prozessors (Itanium) beschrieben, aus dessen ausführbarem Programm ("binary"), das für einfädige Ausführung compiliert ist ("single-threaded"), während einer Post-Pass-Compilierung ein ausführbares Programm mit mehreren Threads (einschließlich Prefetch-Threads) erzeugt wird. D1 offenbart somit kein Endgerät, keinen tragbaren Datenträger und kein Ausnutzen der Wartezeit auf das nächste Kommando des Endgeräts, sondern nur eine vorgezogene Bearbeitung, allerdings durch Änderung der "Kommandofolge" (Post-Pass-Compilierung) und Einführung von hardware-seitiger Parallelverarbeitung (Multi-Threading).

3.14 Die Einheitlichkeit der Erfindung zeigt sich auch an folgender Überlegung: Würde beispielsweise ein Dokument recherchiert, das sich nur auf die angebliche vierte Erfindung bezieht (d.h. auf die vorgezogene Bearbeitung in einem Datenträger, der in Kommunikation mit einem Endgerät steht, welches diesem Kommandos übermittelt), so würde dieses höchstwahrscheinlich auch relevant für Anspruch 1 und die anderen angeblichen Erfindungen sein.
