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**Datasheet for the decision  
of 2 August 2012**

**Case Number:** T 1741/08 - 3.5.06

**Application Number:** 03766056.0

**Publication Number:** 1636697

**IPC:** G06F 9/44

**Language of the proceedings:** EN

**Title of invention:**

A method of entering of data into a data processing system

**Applicant:**

SAP AG

**Headword:**

GUI layout/SAP

**Relevant legal provisions:**

EPC Art. 112(1)(a)

**Relevant legal provisions (EPC 1973):**

EPC Art. 56

**Keyword:**

Inventive step - main and auxiliary request (no)  
Request for referral to the Enlarged Board of Appeal (no)

**Decisions cited:**

T 0619/02, T 1143/06, T 0643/00, T 0049/04, T 0244/00,  
T 0928/03, T 0333/95, T 0125/04, G 0003/08

**Catchword:**

GUI layouts - presentation of information. "Lowering the cognitive burden of the user" is not of itself a technical effect (T 01143/06 followed, T 0049/04 not followed) - see section 2.1.



Case Number: T 1741/08 - 3.5.06

**D E C I S I O N**  
of the Technical Board of Appeal 3.5.06  
of 2 August 2012

**Appellant:** SAP AG  
(Applicant) Dietmar-Hopp-Allee 16  
D-69190 Walldorf (DE)

**Representative:** Richardt Patentanwälte GbR  
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**Decision under appeal:** Decision of the Examining Division of the  
European Patent Office posted 17 April 2008  
refusing European patent application  
No. 03766056.0 pursuant to Article 97(2) EPC.

**Composition of the Board:**

**Chairman:** D. H. Rees  
**Members:** S. Krischer  
C. Heath

## Summary of Facts and Submissions

I. The appeal is directed against the decision of the examining division, posted on 17 April 2008, to refuse the application 03766056.

The reason given for the refusal was lack of an inventive step.

The following document was mentioned:

D1 EP 1 156 415 A2, 21 November 2001.

II. A notice of appeal was received on 9 May 2008. The fee was received the same day. A statement of the grounds of appeal was received on 28 July 2008. The appellant requested that the decision be set aside and a patent granted on the basis of one of a main and three auxiliary requests all of which had been submitted in the course of examination.

Oral proceedings were conditionally requested.

III. The board issued a summons to oral proceedings in which it referred to the following document of the search report, not used so far in substantive examination:

D2 WO 91 06050 A, 2 May 1991.

The board gave its preliminary opinion that claim 1 of the then main request was not new over D2. It was further noted that a layout with menus and sub-menus was notorious prior art at the filing date (2003) and that the so-called "start menu" of the operating system "Microsoft Windows95" would also apparently anticipate claim 1 of the main request. The auxiliary requests appeared not to be inventive.

IV. In a letter dated 15 June 2012, the appellant filed a main and an auxiliary request, replacing the previous requests.

V. Oral proceedings were held on 2 August 2012. As a second auxiliary request it was requested during the oral proceedings to refer two questions to the Enlarged Board of Appeal. These were:

"1. Does Art.52 EPC has [sic] to be understood as excluding any presentation of information on a GUI from patentability, in case the content of the information itself is not considered and in case the result of the presentation on the GUI is lowering the cognitive burden of the user for interaction with the computer system providing the GUI ?

2. In case not every presentation of information on a GUI is excluded from patentability, what are the criteria for assessment of the technical character of the presentation of information ?"

VI. At the end of the oral proceedings, the chairman announced the board's decision.

VII. The appellant requests to set the decision aside and to grant a patent on the basis of a main or an auxiliary request filed with letter dated 15 June 2012 (claims 1-19 and 1-18). If these requests are not allowable it is requested to refer the questions above to the Enlarged Board of Appeal.

The further text on file is: description pages 1, 3-16 as originally filed; pages 2, 2a filed with letter

dated 7 September 2006; drawing sheets 1-19 as originally filed.

VIII. Claim 1 of the main request reads as follows (additions to the refused main request are in *italics*):

"1. A method of entering of data in a data processing system comprising:

- a) displaying a first *horizontally aligned* linear sequence (402; 702) of top-level icons (i),
- b) displaying a second *horizontally aligned* linear sequence (420; 902; 1320) of second-level icons for a selected one of the top-level icons, the position of the leading icon of the second linear sequence being *vertically* aligned with the selected one of the top-level icons of the first linear sequence,
- c) displaying at least one data entry field (422; 922; 1022; 1122; 1322; 1422; 1522) for a selected one of the second-level icons for entering the data, *wherein the at least one data entry field (422; 922; 1022; 1122; 1322; 1422; 1522) is displayed spatially separated from the first and second linear sequence while the first and second linear sequence is displayed,*
- d) entering the data into the at least one data entry field,
- e) going back to step c) for a consecutive one of the second-level icons until all data entry

steps of the second linear sequence have been completed,

- f) going back to step b) for a consecutive one of the top-level icons."

IX. Claim 1 of the auxiliary request reads as follows (additions to the main request are in *italics*):

"1. A method of entering of data in a data processing system comprising *generating a mark-up language document (114) by a server computer (100) containing a first and a second linear sequences of top-level icons (i) and a data entry field, and using a request-response protocol for transmitting the mark-up language document to a client computer (106) and for transmitting of data that has been entered into the data entry field from the client computer to the server computer, the server computer implementing a server side web application for generating the mark-up language document (114), the method further comprising at the client:*

- a) displaying *the first horizontally aligned linear sequence (402; 702) of top-level icons (i),*
- b) displaying *the second horizontally aligned linear sequence (420; 902; 1320) of second-level icons for a selected one of the top-level icons, the position of the leading icon of the second linear sequence being vertically aligned with the selected one of the top-level icons of the first linear sequence,*

- c) displaying at least one data entry field (422; 922; 1022; 1122; 1322; 1422; 1522) for a selected one of the second-level icons for entering the data, wherein the at least one data entry field (422; 922; 1022; 1122; 1322; 1422; 1522) is displayed spatially separated from the first and second linear sequence while the first and second linear sequence is displayed,
- d) entering the data into the at least one data entry field,
- e) going back to step c) for a consecutive one of the second-level icons until all data entry steps of the second linear sequence have been completed,
- f) going back to step b) for a consecutive one of the top-level icons."

## **Reasons for the Decision**

### *1. Admissibility of the main and the auxiliary request*

These requests were filed after the grounds of appeal and hence according to Article 13(1) of the Rules of Procedure of the Boards of Appeal the board has discretion whether or not to admit them into the proceedings. One effect of their amendments in comparison with those requested with the grounds is to distinguish claim 1 from the start menu of Microsoft Windows 95 ("horizontally aligned") and from D2 ("wherein the at least one data entry field ... is displayed spatially separated from the first and second

linear sequence"). The amendments are originally disclosed in figure 9.

Given the attempt to overcome the novelty objection raised in the summons, which referred to different prior art to that used by the examining division, and since the requests do not raise issues too complex for the board to handle in the oral proceedings, they are admitted into the procedure (Article 13(1) Rules of Procedure of the Boards of Appeal).

## 2. *Inventiveness*

### 2.1 Main request

2.1.1 Claim 1 relates to a method of entering data in a data processing system using a particular graphical user interface (GUI). The layout of this GUI comprises two horizontally aligned linear sequences of icons. The second sequence is displayed for a selected icon of the first sequence. The leading icon of the second sequence is vertically aligned with the selected icon of the first sequence. In addition, one or more data entry fields are separately displayed for a selected icon of the second sequence.

2.1.2 In the appealed decision, claim 1 was refused for lack of inventive step without citing a document. In section 6.1, it was stated:

"In the present case, it cannot be seen how data entry is technically made more efficient. In particular, the method of claim 1 still requires the user to enter data for every field for which data is needed."



2.1.3 In the grounds, the appellant proposes to take the notorious GUI type "wizards" as the closest prior art (page 3, section b)). They are already mentioned as prior art in the description (page 1, from line 14 on). It is further stated on page 6, section h) that the technical problem of the invention is "making data entry more efficient". In essence the argument, further elaborated in the oral proceedings, is that the display of the two rows of icons makes it easier, particularly for an inexperienced user, to identify the stage reached in a process of data input requiring a number of steps and sub-steps. The user will, as a consequence, grasp more quickly the nature of the data to be input at the present stage, and therefore respond more quickly than if the rows of icons were not displayed. The appellant further asserts, and the board accepts at least for the sake of argument, that less time-consuming input transactions have the technical effect that less computer resources are used.

2.1.4 Claim 1 differs from wizards in what is displayed on the screen, i.e. in the particular GUI layout. Since the difference between the claim and D2 or the Microsoft Windows 95 start menu would also consist solely of particularities of the GUI layout, the board accepts that wizards are as good a starting point as either of these others for discussing the question of inventive step.

2.1.5 It is established case law of the Boards of Appeal, and the appellant has not disputed this, that the subject-matter of a claim cannot be inventive if there is no technical contribution to the art, i.e. if there is no technical problem solved by the claimed subject-matter

vis-à-vis the closest prior art, or equivalently if there is no additional technical effect over and above any technical effects present in the closest prior art. The appellant has argued that the reduction in the use of computer resources explained above is the required additional technical effect in the present case. The appellant further argues that *any* layout improvement which has the effect of "lowering the cognitive burden of the user", at least in the context of an input operation, should therefore be at least potentially the subject of a patent. In other words a particular layout of information, not specifying the nature of the content, should not be considered to be a "presentation of information" in the sense of Article 52(2)(d) EPC. The appellant seemed however to accept in the oral proceedings that such an effect relying on a particular content of information, rather than its layout, would not be a patentable contribution. The board notes that this fact provides something of a "reality check" on the appellant's argument, since the argument would apply equally well to amendments of content, such as replacing an instruction to move a cursor "vertically or horizontally" by "up or down", as to amendments of layout.

- 2.1.6 The board considers that a particular GUI layout could indeed shorten the search of an inexperienced user for where or what data to enter. As a result, less computer resources may be used. However, this reduction in use of resources would be caused by the way the brain of the user perceives and processes the visual information given by a particular way of presenting information.

The appellant is effectively arguing that there is a chain of effects: the improved layout (which is indeed a "presentation of information" according to case law - see below) "lowers the cognitive burden" for the user; the user therefore responds more quickly; and the computer therefore requires less resources. But in terms of technical effects this is a broken chain: the layout has an effect on the mind of the user; a mental transition takes place more quickly than in the prior art; the user responds more quickly, so that the computer uses less resources. Only the third of these links can be called a technical effect, in that the user leaving the computer idle for a shorter time than in the prior art reduces resource consumption.

The board does not accept that such a broken chain can be used as evidence of the required technical effect overall. It would seem that each of the links must be technical in nature for such a chain argument to be persuasive. Thus, the appellant has not established that there is an additional technical effect caused by the improved layout: the layout produces a psychological effect on the user; the user produces a technical effect on the computer. This is not the same as saying that the layout produces a technical effect on the computer.

- 2.1.7 Nonetheless, the board must consider whether perhaps the first step alone can be considered as causing an additional technical effect / solving a technical problem. In this context, it is necessary to consider the appeal cases cited during these proceedings. None of them relied on such a "chain" argument as employed by the appellant here. All however concerned effects on

the perception of a user, one way or another. However in some cases, there was considered to be a technical effect and in others not.

2.1.8 The appealed decision states (section 6.2, last sentence) that "human perception phenomena cannot be qualified as being of a technical nature". The decision cites **T 619/02**, section 2.3.2 as a basis for this general statement. The board agrees with this as a general statement.

2.1.9 The board does agree with the appellant (grounds, pages 5 and 6, section f)) that the cited decision (T 619/02) is rather different to the present case. It relates to odour selection testing, and not to GUI design. The appellant argued during the oral proceedings that the claim of the main request in T 619/02 contains "monitoring implicit odour memory by monitoring speed of response and subject confidence of accuracy of response in the subsequent step of odour recognition". This meant that the claim monitored the response of the user, which was not the case here. The board agrees with the appellant that the claimed invention does not monitor the user's behaviour.

However, the board nonetheless endorses the statements in the cited decision about human perception phenomena at least usually depending on "personal factors (cultural background, gender, age, past experiences, capacity to evoke dormant meanings and emotions, perception subjectivity, etc.)". This observation also applies to the effects of GUIs in general. Merely the kind of perception is different.

2.1.10 There is well-established case law which considers a GUI layout as such to be non-technical, being a "presentation of information" (Article 52(2)(d) EPC). In support of this position, the board cited **T 1143/06**. It concerns the representation of files satisfying some selection criteria as objects moving on a display screen, the speed of movement conveying information relating to the selection. On the issue of whether this representation is to be regarded as a presentation of information in the sense of Article 52(2)(d) EPC, the decision argues as follows (section 3.5):

"Returning now to the present invention, the movement of the elements symbolising the data files over the screen is intended to convey information. This is clear from the patent application itself: 'Patterns in the data are readily recognisable since each element moves in accordance with the relevance of the sort statements to the data file it represents' (p.3, 2nd sentence). Regarded in isolation this feature must be held to be 'presentation of information' in the sense of Article 52(2)(d) EPC. In its claim context the feature can therefore only contribute to an inventive step if it additionally produces a technical effect."

The present board agrees with this view, which is equally applicable to the present case; the lines of icons displayed are also intended to convey information, namely at which step in the input process the user finds him- or herself.

2.1.11 Decision T 1143/06 discusses a number of previous cases, some of which directly concerned the effects of

particular layouts of information, others of which discussed the more general context of technical and non-technical effects. Amongst the cases discussed are **T 49/04** and **T 643/00**, both of which have also been cited in the course of the present case. Decision T 1143/06 explicitly states that it does not follow T 49/04 and that,

"a feature which relates to the manner how cognitive content is conveyed to the user on a screen normally does *not* contribute to a technical solution to a technical problem. An exception would be if the manner of presentation can be shown to have a credible technical effect". (section 5.4)

The present board finds the reasoning in T 1143/06 to be convincing and consistent with the case law discussed therein. With respect to T 49/04, therefore, the board does not follow this decision for the reasons given in T 1143/06. The board notes that T 49/04 itself explicitly did not follow a previous decision, T 125/04, which this board would rather endorse.

2.1.12 As to the other decision **T 643/00**, discussed in T 1143/06, the board agrees with the appellant (grounds, section g)) that T 643/00 comes closer to the present case than T 619/02, since it deals with arrangement of menu items on a screen, and not with odour selection. In T 643/00, searching and retrieving images are considered as technical tasks (catchword and section 16.). However, not everything that supports a technical task has itself a technical character. For example, the advice to have a good night's rest in order to make searching images more "efficient" would not have technical character.

2.1.13 In T 643/00, displaying several images side-by-side in low resolution and allowing selection and display of an image at higher resolution is said to provide information to the user in the form of a *technical tool* (section 17).

The board noted during oral proceedings that T 643/00 always mentions the technical feature of a low resolution of the image in addition to the side-by-side arrangement of the images (middle of section 10.; end of section 16; section 17, lines 3, 4), whereas the present application merely defines the way in which the icons and the data entry field are presented (including their alignments and their spatial relationship). Even the appellant of T 643/00 included the reduced resolution in its argumentation ("simultaneous display of, for example, eight images in a reduced resolution", section VI.).

Moreover, the low resolution, permitting the simultaneous display of a number of images, is a distinctive technical feature over the closest prior art document (section 10). In the oral proceedings, the appellant contradicted this and argued that the closest prior art referred to in the decision already displayed low resolution versions of high resolution images. The board considers that on this point the appellant misreads the decision. The board cannot find any reference in the decision to the prior art disclosing the display of low resolution versions of high resolution images. In section 9 the decision states, "The prior art of document EP-A-0 392 753 seems to aim at a high speed search of images by using the lowest resolution image data of the images hierarchically

encoded and stored in the database 5 (...). The details how the search could be done, however, remain in the dark." This lack of disclosure of display of the low resolution images in the prior art appears in fact to have played a significant role in the assessment of the inventive step in the decision.

Therefore, in the board's view the technicality in T 643/00 comes from the technical character of images and their resolution, and the technical effect is the ability to display several images simultaneously if low resolution versions of the image are used. In the present case, there is no analogy to the technical feature of an image resolution.

2.1.14 Decision T 1143/06 (section 6.5, first paragraph) also cites a passage from **T 244/00** (section 12, paragraph 3):

"... the arrangement of the menu items on the screen, if it is not exceptionally determined by technical considerations, is not a technical aspect of a menu-driven control system."

The board which decided T 643/00 (which also cites T 244/00) apparently considered that their case was such an exception.

2.1.15 In its letter dated 15 June 2012, the appellant cited **T 928/03** which was said to confirm "that visual information on a GUI which enables a user to perform a task on the GUI in interaction with a data processing system more efficiently is of technical character" (page 5, paragraph 2). During oral proceedings, the appellant pointed to section c) on pages 5 and 6 of its letter where the principle of "conflicting technical



requirements" of T 928/03 (section 4.3) was transferred to the present application. The latter was said to resolve the technical conflict to present the user as much information as possible, but not too much in order to avoid confusion of the user about which data entry step he is actually performing.

The board cannot follow this argumentation, since choosing what to display is part of the presentation of information. If the choice of what to display were technical, then every GUI layout would be technical. The application contains several such choices, e.g. in figure 8 contains additional selection possibilities (like "Add Flight" (810)) which are not displayed in figure 9 (the claimed layout).

Decision T 928/03 concerns a video game involving two teams of players and a ball (e.g. football). An image of the virtual game is presented to the user. In addition to presenting a "realistic" view of (part of) the playing field including players and ball, there are markers displayed, showing for example which player has possession of the ball and which is the nearest to pass to. Given the requirement to present a realistic view of the playing field in T 928/03, one object in a scene may obscure another one because of the geometrical constraints of viewing the scene from a particular point of view (thus giving rise to the conflict which the decision refers to). The invention in that case solved this technical problem by changing the size and positioning of the markers. On this basis, the board accepted that there was a technical effect. But in the present case, there is no scene. There is also no technical conflict solved by separating items and data

entry fields spatially. The only effect (e.g. of avoiding the user being confused in order to improve inputting) emerges simply from the psychological reaction of the user.

2.1.16 Applicant's aforementioned letter alleges that **T 333/95** is the base of T 928/03 (page 5, section b)). This is not precisely correct; the latter mentions the former but does not base itself upon it. Be that as it may, the appellant's letter further states that T 333/95 holds that a technical contribution can be achieved by a GUI which decreases the mental and physical effort of the user. This is said to be the situation of the present application.

Decision T 333/95 concerns using a computer to produce animations. In order to produce a scene in which a particular object moves, the selected object takes the place of the cursor, so that the user can move it around with the mouse as desired, while the system records the movements of the mouse and translates them into a script of commands for moving the object in the later display of the animated scene. However, the board in that case clearly considered the feature of "making said graphics object the current cursor" in T 333/95 as a technical feature per se. This "graphics object cursor" replaces the normal cursor (also technical) and its movements are recorded and translated into a kind of programming language (section 5.). There was at least a technical effect in allowing the user to move the selected object around under control of the mouse. The decision does not say that every GUI design that makes user's inputting more efficient has a technical

character. Therefore, this decision does not apply to the present case.

2.1.17 Thus, in all of the cases T 643/00, T 928/03 and T 333/95 the relevant board identified a specific technical effect, which made these cases exceptional. There was something other than the simple choice of what information to display and with what layout to display it, which meant that in these exceptional cases the displayed information might play a part in the assessment of inventive step of the claimed invention. In the present case the appellant has not put forward any convincing argument that there is such a technical effect. Neither is any such effect evident to the board as a result of its own analysis. In the absence of any technical effect arising from the claimed layout features, it is confirmed that claim 1 of the main request is not inventive vis-à-vis the well-known "wizards" for computer input.

## 2.2 Auxiliary request

2.2.1 Claim 1 of the auxiliary request has the following additional features:

- a server computer generates a mark-up language document representing the particular GUI;
- the server computer uses a request-response protocol for transmitting this document to the client computer and for receiving entered data from it;
- thereby a server-side web application is implemented.

These features are neither contained in wizards nor in D2. They undoubtedly contribute to the technical character.

- 2.2.2 However, they solve a technical problem quite separate from questions of what data to present and how to display it, namely how to implement a GUI for a situation where a person wants to use services over the internet (e.g. for booking travel over the World Wide Web).
- 2.2.3 The board considers it obvious for a skilled person to use for this purpose the standard techniques of server-side web applications (i.e. server-generated mark-up language documents like HTML pages, and a request-response protocol like HTTP) as they are disclosed in D1 (abstract, figure 1), for example.
- 2.2.4 During oral proceedings, the appellant argued that the claim also solved the technical problem of how to reduce the resource consumption at the server, since the server did not have to wait so long to receive the data entered by the user at the client computer. This allowed to save the limited resource "connections" at the server.
- 2.2.5 The board is prepared, for the sake of argument, to accept that earlier input may have a technical effect with respect to the server resources. Such an effect should not appear at the connection level, since after the sending in one or the other direction, a connection is usually closed according to the Hypertext Transfer Protocol (HTTP). But there might be an effect in the web application which is waiting until the user data is transmitted to the server.

However, as in the case of the main request such an effect would be an indirect one, caused by the psychological effect of the presentation of information. Nor do the additional features claimed in the auxiliary request contribute to this assumed effect.

2.2.6 Thus, claim 1 of the auxiliary request is not inventive, in violation of Article 56 EPC.

3. *Request for referral to the Enlarged Board of Appeal*

3.1 As a second auxiliary request, the appellant requested during the oral proceedings the referral of two questions to the Enlarged Board of Appeal according to Article 112(1)(a) EPC. The questions ask whether Article 52 EPC excludes any presentation of information on a GUI under certain circumstances, and what are the criteria for assessment of the technical character of a presentation of information. The appellant argued that there was a contradiction between certain of the above cited Board of Appeal decisions and the Guidelines for Examination, and that in the Boards of Appeal there is no consistent approach to what a lack of technical character means. In other words, there is no uniform application of the law, and a question of fundamental importance arises from the present case in the sense of Article 112(1) EPC. The outcome would be decisive to the present case.

3.2 However, the board fails to see a contradiction in the cited case law. These cases are rather different; in some of them, the claimed subject-matter was considered to be inventive and in some not. However, with one possible exception (T 49/04), the case law of the Boards of Appeal cited in this case is entirely

consistent with the principle that the mere fact that a particular choice of information to display or of how to display it is particularly clear, lucid, or "lowers the cognitive burden" of the user is not sufficient to demonstrate that the choice has a technical effect. The fact that not all GUI-related applications are considered to be inventive by respective boards does not mean that there is a contradiction between the decisions. As to the one possible exception, T 49/04, a single case deviating from the general case law is not a sufficient reason for a referral to the Enlarged Board of Appeal (see G 3/08 section 10.12). The appellant has not brought any case to the attention of the board to show that the position taken in T 49/04 has been followed by other cases. Nor is there any case known to this board where the line taken by T 49/04 was determinative of the outcome. In light of the fact that the present decision is consistent with the established case law of the Boards of Appeal, no point of law of fundamental importance arises from the present case.

- 3.3 As to the alleged lack of consistency between what is in fact the established case law and the Guidelines for Examination, the board notes that it is not bound by the Guidelines, an important factor in the judicial independence of the Boards of Appeal (Article 23(3) EPC). An alleged divergence between the Guidelines for Examination and case law therefore cannot be a sufficient basis for challenging the case law by means of a referral to the Enlarged Board of Appeal.

The board notes in passing that the Guidelines for Examination state the following (G-II 3.7):

"If, however, the presentation of information has new technical features, there could be patentable subject-matter in the information carrier or in the process or apparatus for presenting the information. The arrangement or manner of presentation, as distinct from the information content, may well constitute a patentable technical feature."

It would seem that while this statement is not actually inconsistent with the case law of the Boards of Appeal, the optimistic tone might sometimes mislead (potential) applicants. It would appear more appropriate to write, "may exceptionally", rather than "may well". However, the formulation of the Guidelines for Examination is not the responsibility of the Boards of Appeal.

- 3.4 Therefore, the board does not refer the two questions to the Enlarged Board of Appeal.

**Order**

**For these reasons it is decided that:**

The appeal is dismissed.

The Registrar:

The Chairman:

B. Atienza Vivancos

D. H. Rees