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D E C I S I O N
of 12 March 1997

Case Number: T 0387/95 - 3.5.1

Application Number: 89202473.8

Publication Number: 0421025

IPC: G06F 3/033

Language of the proceedings: EN

Title of invention:
Data processing system with a touch screen and a digitizing tablet, both integrated in an output device

Applicant:
Philips Electronics N.V.

Opponent:
-

Headword:
Combined touch screen and digitizing tablet/PHILIPS

Relevant legal provisions:
EPC Art. 111(1)

Keyword:
"Novelty - yes"
"Remittal to the first instance"

Decisions cited:
-

Catchword:
-

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Beschwerdekammern | Boards of Appeal | Chambres de recours

Case Number: T 0387/95 - 3.5.1

D E C I S I O N
of the Technical Board of Appeal 3.5.1
of 12 March 1997

Appellant: Philips Electronics N.V.
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Representative: Strijland, Wilfred
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Decision under appeal: **Decision of the Examining Division of the European Patent Office posted 8 December 1994 refusing European patent application No. 89 202 473.8 pursuant to Article 97(1) EPC.**

Composition of the Board:

Chairman: P. K. J. van den Berg
Members: R. Randes
G. Davies

Summary of Facts and Submissions

I. European patent application No. 89 202 473.8, publication No. 0 421 025, was filed on 2 October 1989 and did not claim priority.

II. The application was refused on the grounds that the subject-matter of claims 1 to 7, 10, 15, 16 and 24 was not new (Articles 52(1) and 54(1) and (2) EPC) and that of claims 8, 9, 13 and 14 lacked an inventive step (Articles 52(1) and 56 EPC). The written decision was dispatched on 8 December 1994 and cites inter alia the following documents:

D1: US-A-4 686 332

D3: I&CS, vol. 62, no. 2, February 1989, pages 61 to 64, Radnor, PA, US; W. Wehrer: "The right touch for control"

III. On 6 February 1995 the applicant lodged an appeal against this decision and paid the prescribed fee. The appellant requested that the decision to refuse the application be set aside. In the written statement setting out the grounds of appeal, filed on 6 April 1995, the appellant filed a main, and first and second subsidiary requests. These requests were based substantially on the claims refused by the Examining Division, but contained different attempts to express the alleged distinction of independent or parallel operation of the claimed two input devices.

IV. In a communication pursuant to Article 11(2) of the Rules of Procedure of the Boards of Appeal, dated 30 December 1996, the rapporteur expressed the preliminary opinion that the subject-matter of claim 1 of the main request was not new and that of claim 1 of the other requests lacked an inventive step. It was also pointed out that some expressions in the claims were difficult to interpret.

V. On 26 February 1997, two weeks before the oral proceedings, the appellant submitted a new main request to replace all other requests.

VI. Oral proceedings were held on 12 March 1997 during which the appellant submitted a new single request. Claim 1 of this request was restricted by the feature from originally filed claim 21, which specified that the stylus incorporates a pressure sensor. The request consisted of the following documents:

Main request

Claims: 1 to 12, filed during the oral proceedings
Description: pages 1 to 10a, filed during the oral proceedings
Drawings: sheets 1/3 to 3/3, filed during the oral proceedings

VII. Claim 1 of the main request, whose features have been numbered by the Board for easier reference, reads as follows:

"A data processing system having a two-channel input device for feeding a data processing facility, and having:

[1]a. a touch screen (10) having a first energy channel between a first energy source (16, 18) and a first energy sink (26, 28) and being provided with first locating means for detecting and locating presence of a passive body such as a finger (34) near an outer surface of the input device;

[2]b. a digitizing tablet having a second energy channel between a second electromagnetic energy source (68) and a second energy sink (52-58) and being provided with second locating means for detecting and locating a presence of a stylus (68) that forms an electromagnetically operative part of said second channel near said outer surface;

[3] said touch screen and said digitizing tablet being integrated with a display screen (14) in that they have substantially overlapping user areas;

characterized in that:

[4] said first and second energy channels are mutually exclusive;

in that the touch screen medium is

[5] located at the user side from said display screen

[6] and is free of transparency jumps across its user area;

and in that the digitizing tablet medium is

[7] either located at the user side from said display screen

[8] and is free of transparency jumps across its user area,

[9] or is located opposite the user side from said display screen;

[10] and in that the stylus incorporates a pressure sensor for under control of a pressure exceeding a predetermined threshold enabling a cooperation between the stylus and the input device whilst disabling said first energy channel."

VIII. The appellant`s arguments in support of the patentability of the subject-matter of the independent claims can be summarised as follows. The invention is a combined touch screen and digitising tablet for inputting position data into a system. A touch screen is sensitive to pressure or to proximity of an object, usually a finger, to provide a rough indication of position. A digitising tablet requires a special stylus and provides a more accurate indication of position. The present invention is superior to the device of D1 in several ways.

First, the invention enables simultaneous operation of the two input devices. This is not possible with the single grid in D1, because the two input operations must be multiplexed, resulting in a loss of resolution. The inventor found that independent energy channels solve this problem and then expanded the idea to give the various embodiments. The device of the invention can simultaneously recognise a user's hand position with a written signature, for example.

Second, the arrangement of the input device media results in a better display quality. The fine separation of the conductors in the grid in D1 leads to moiré patterns when used with certain displays. The inventor has designed a system that does not need to use such a grid.

Finally, the use of a pressure sensor in the stylus results in a particularly effective and commercially attractive input device. Although the description explains how this may be used to switch between different input operations, the input device is capable of operating in a simultaneous mode, a multiplexed mode, or a switched mode.

Reasons for the Decision

1. The appeal complies with Articles 106 to 108 and Rule 64 EPC and is, therefore, admissible.

2. *Amendments*

2.1 The appellant has substantially amended the single independent apparatus claim 1 during the appeal proceedings to distinguish its subject-matter from D1. In particular, the following amendments have been introduced:

(a) first and second "energy channels", associated with the touch screen and the digitising tablet respectively, which are "mutually exclusive" (features [1](part), [2](part) and [4]). This replaces the definition in the refused claim in which the touch screen and the digitising tablet were defined as being "physically integrated with each other" and being "activatable independently".

(b) the positions of the two input devices (features [5], [7] and [9]). In the refused claim, the positions were not defined.

(c) the touch screen, and the digitising tablet when located at the user side of the display screen, are free of transparency jumps across their user area (features [6] and [8]). In the refused claim, the transparency was not mentioned.

(d) the stylus incorporates a pressure sensor (feature [10]). In the refused claim this was not mentioned.

Amendment (d) is taken from originally filed claim 21.

3. *State of the art*

3.1 It is common ground that D1 is the single most relevant prior art document. D1 states at column 2, lines 49 to 51 an object of providing an interactive input device that permits either finger touch input or stylus detection input modes. This is achieved by an overlay 20 that contains horizontal and vertical conductors as shown in Figures 1 and 2. D1 states at column 4, lines 46 to 50 that the horizontal and vertical conductors are transparent, and further at column 5, lines 9 to 12 that they are made of indium tin oxide. The overlay functions as either a digitising tablet, or a touch screen as shown in Figures 3 and 8, respectively. The conductors are connected to the detection system shown in Figure 9. In the digitising tablet mode, described at column 12, lines 47 to 64, the conductors X1..X4 and Y1..Y4 are connected to an oscillator 126 and the signal picked up by the stylus 60 is used to determine its position. In the touch screen mode, described at column 12, lines 35 to 47, the conductors are coupled to a capacitance meter 128

whose output is used to determine which conductors are being touched. The conductors can, therefore, never be used for both modes at the same time. D1 then describes two embodiments for the operation of this detection system. In the first one, the touch screen and the digitising tablet operate "to the exclusion of the other". In the second one, they operate "simultaneously". Here, simultaneously means continuously multiplexing the two operations in time.

4. *Novelty*

4.1 Thus D1 discloses a combined touch screen and digitising tablet according to features [1] to [3] of the preamble of claim 1. Furthermore, it is clear from Figure 2 of D1 that the overlay 20, which forms the input device, is located at the user side from the display screen 32, according to features [5] and [7].

4.2 Having regard to the grid of transparent conductors of D1, since it is common knowledge that indium tin oxide has some optical attenuation, such a grid would clearly be visible under certain conditions. It is, therefore, not "free of transparency jumps across its user area" as required by features [6] and [8]. These features are, therefore, not disclosed by D1.

At first sight, it appears that the skilled person may derive these features from the description. Column 7, lines 42 to 46 describes the digitising tablet as being made from a "resistive homogeneous sheet 42 of a transparent, electrically conductive substance, for instance Indium-Tin-oxide". The passage at column 11, lines 4 to 7 could extend the above definition to the touch screen explicitly in connection with original Figure 4 and implicitly in connection with the other embodiments. Indeed, D3 discloses that such transparent displays are known per se.

4.3 D1 does not disclose the alternative position of the digitising tablet according to feature [9], since this is not possible using a cathode ray tube.

4.4 Furthermore, D1 does not disclose that the stylus incorporates a pressure sensor according to feature [10].

4.5 Having regard to feature [4] included in amendment (a), the appellant wishes to express that, in the invention, the two input devices do not interfere with each other resulting in improved simultaneous operation over that of D1. However, it does not appear to be quite clear that the wording of feature [4] provides this distinction. I n the detecting system of Figure 9 of D1, the path from the output of the stylus 60 through the radiative pickup measurement 122 to the processor data bus 110 and the path from the output of the conductors through the capacitance measurement 128 to the data bus could, at least at first sight, be viewed as the two "energy channels". Moreover, since as described above, the touch screen and the digitising tablet of D1 do not operate simultaneously in the first embodiment, they could possibly be viewed as independent from one another or "mutually exclusive".

Amendment (a) is apparently intended to be an abstraction of the already general ideas given at column 3, line 43 to column 4, line 34 of the published application. The appellant explained that these state that the stimuli from the touch screen and the digitising tablet can be discriminated by their different physical character, or by values of the same physical character, but in different ranges. It appears that the description provides an identification of the

energy channels in terms of the physical character of the stimuli within them. It is not, however, clear whether the currently claimed general concept of "energy channels" which are "mutually exclusive" is supported by the description.

It is also not clear whether amendment (a) covers all the embodiments. In the embodiment of original Figure 5, which is described at column 11, lines 4 to 36 of the published description, the touch screen and the digitising tablet are both based on capacitive coupling and use the same resistive sheet. The signals are discriminated by measuring the force applied to the touch screen using strain gauges mounted underneath the panel. This appears to rule out operation according to the above-mentioned discrimination based on values of the same parameter in different ranges. However, the appellant explained that, in principle, the embodiment could also operate in this manner. Even if this is accepted, there remains a potential objection that such an arrangement could be considered to have only one physical "energy channel". The concept of a second one which is independent could be regarded as contradictory. If so, even if the two channels were to be viewed as virtual channels, multiplexed onto one physical channel, the claim may lack the necessary definition of how these channels are to be defined or distinguished.

Thus it appears that it is not possible to assess whether feature [4] is novel until the issues of clarity and support have been settled.

4.6 Since at least features [6] and [10] for both alternatives of claim 1 and feature [8] for one alternative and feature [9] of the other alternative are new, the Board accordingly considers that the subject-matter of claim 1 is new.

5. *Procedural steps*

5.1 Having found the claims novel over D1, thereby overcoming the reasons for the refusal in the decision, the Board does not consider it appropriate to continue the examination of its own motion. The principal task of the Boards of Appeal is to examine appeals, that is to examine whether a decision under appeal is correct or not. In the present case, the appellant has made amendments to the claims that the Examining Division did not consider fully or did not consider at all. Thus the entire situation has changed to the extent that the decision taken no longer applies. This applies, in particular, to amendment (c) which has been taken from the description. It also applies to amendment (d), based on originally filed claim 21, which the Examining Division mentioned only in general terms along with other independent claims in paragraph 4 of its only communication of 6 May 1994. The Examining Division merely stated that the feature was not disclosed in any of the documents cited in the search report, but did not comment on its patentability.

5.2 Before a new decision can be taken, the application must be re-examined with respect to all the requirements of the EPC. In particular, the references from the different dependent claims to claim 1 and to each other must be checked and it must be examined whether the subject-matter of all claims is supported by the description. Also it should be considered whether the amendments to the description, in particular the new advantages in the introductory part, are derivable from the originally-filed application.

5.3 Such re-examination is, however, clearly the task of the Examining Division and not of the Board. Moreover, it is appropriate that the re-examination should be carried out by the Examining Division, so that the

applicant is not denied the opportunity of having patentability examined by two instances. The Board, therefore, makes use of its power under Article 111(1) EPC to remit the case to the Examining Division for further prosecution.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The case is remitted to the first instance for further prosecution of the application on the basis of the appellant's request submitted during the oral proceedings.

The Registrar: The Chairman:

M. Kiehl P. K. J. van den Berg