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**Datasheet for the decision  
of 24 February 2016**

**Case Number:** T 0997/13 - 3.5.05

**Application Number:** 05252074.9

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**Language of the proceedings:** EN

**Title of invention:**

Electronic apparatus, input device, and input method

**Applicant:**

Sony Corporation

**Headword:**

Footstep gestures/SONY

**Relevant legal provisions:**

EPC Art. 56, 123(2)

**Keyword:**

Allowable amendments - auxiliary request (no)

Inventive step - main and auxiliary request (no)

**Decisions cited:**



**Beschwerdekammern**  
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Case Number: T 0997/13 - 3.5.05

**D E C I S I O N**  
**of Technical Board of Appeal 3.5.05**  
**of 24 February 2016**

**Appellant:** Sony Corporation  
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Tokyo 141-0001 (JP)

**Representative:** Nicholls, Michael John  
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**Decision under appeal:** **Decision of the Examining Division of the  
European Patent Office posted on 7 December 2012  
refusing European patent application  
No. 05252074.9 pursuant to Article 97(2) EPC.**

**Composition of the Board:**

**Chair** A. Ritzka  
**Members:** K. Bengi-Akyuerek  
D. Prietzel-Funk

## **Summary of Facts and Submissions**

I. The appeal is against the decision of the examining division to refuse the present European patent application on the ground of lack of inventive step (Article 56 EPC) with respect to the claims of a main request, having regard to the combined disclosures of

D1: US-A-2003/0066413 and

D5: US-A-6 151 208,

and on the ground of added subject-matter (Article 123(2) EPC) in respect of three auxiliary requests.

II. With the statement setting out the grounds of appeal, the appellant re-filed the claims of the main and second auxiliary requests underlying the appealed decision as its main and first auxiliary requests respectively and an amended set of claims as a second auxiliary request. It requested that the decision of the examining division be set aside and that a patent be granted on the basis of the main request or either of the auxiliary requests.

III. In an annex to the summons to oral proceedings pursuant to Article 15(1) RPBA, the board gave its preliminary opinion on the appeal. In particular, it raised objections under Articles 123(2) and 56 EPC, mainly having regard to D5 as the closest prior art.

IV. With a letter dated 18 January 2016, in response to the objections raised in the board's communication under Article 15(1) RPBA, the appellant submitted amended claims according to a "Replacement Auxiliary Request", replacing the former first and second auxiliary

requests on file, together with arguments with respect to its admissibility and allowability.

- V. Oral proceedings were held on 24 February 2016, during which the "Replacement Auxiliary Request" was admitted into the proceedings as the sole auxiliary request and its allowability was discussed. Concerning the main request, the appellant did not provide any further comments as to the substance during the oral proceedings, but only referred to the respective written submissions.

The appellant's final request was that the decision under appeal be set aside and that a patent be granted on the basis of the main request submitted with the statement setting out the grounds of appeal or of the auxiliary request submitted with the letter dated 18 January 2016.

At the end of the oral proceedings, the decision of the board was announced.

- VI. Claim 1 of the **main request** reads as follows:

"An input device for use in controlling an electronic apparatus (10) in wireless communication with the input device, to perform a selected one of a plurality of functions, the input device (1) comprising:

detection means (2) for detecting a movement of a user's leg portion wherein the detection means is constituted by a plurality of sensors (R1, R2; L1, L2) effective to output a time series signal pattern;

a database (31) programmed with a plurality of time-series signal patterns and corresponding control signals, each of said control signals being effective

to cause the electronic apparatus to perform a different respective one of a plurality of functions;

means for comparing the time series signal pattern output from the plurality of sensors (R1, R2; L1, L2) and the time-series signal patterns stored in the database (31), to select the stored control signal corresponding to the output time series signal pattern; and

output means (4) for wirelessly transmitting the selected control signal to the electronic apparatus (10),

wherein the electronic apparatus performs said selected one of said plurality of functions in accordance with said selected control signal."

Claim 1 of the **auxiliary request** reads as follows:

"An input device for inputting a rhythm pattern, the input device (1) comprising:

detection means (2) for detecting a movement of a user's leg portion, the detection means being constituted by a plurality of sensors (R1, R2; L1, L2) attached to at least one portion of the shoes of the user, the sensors being effective to output a time-series signal pattern indicative of a walking signal based on the user's footsteps;

a database (31) storing a time-series signal pattern and a corresponding control signal, the control signal corresponding to a command (Rhy) for instructing the start and end of a rhythm input operation;

means for comparing the time series signal pattern detected by the detection means (2), and the time-series signal pattern stored in the database (31) to output the control signal from the database (31) when the detected and stored time-series signal patterns correspond;

output means (4) for outputting the output control signal to an external device, wherein the control signal is a command for controlling the external device;

wherein when a time-series signal pattern corresponding to the command (Rhy) for the start of a rhythm input operation is output by the sensors (R1, R2; L1, L2), the input device (1) is arranged then to recognize the walking signal not as corresponding to a command, but corresponding to a rhythm pattern until the next time-series signal pattern corresponding to the command (Rhy) is output by the sensors (R1, R2; L1, L2), the input device (1) converting the walking signal into a music rhythm until the next command (Rhy) is output by the means for comparing, such that the user can use the external device to create music or change tempo or pitch of existing music based on the user's footsteps."

## **Reasons for the Decision**

### 1. MAIN REQUEST

This request is identical to the main request underlying the appealed decision.

#### 1.1 Article 52(1) EPC: novelty and inventive step

The board judges that claim 1 of this request does not meet the requirements of Article 56 EPC, for the reasons set out below.

1.1.1 In the decision under appeal, document D1 was considered to be the closest prior art (cf. section 2.2). However, it is apparent to the board that

D1 is concerned with generating the corresponding control commands at the *apparatus to be controlled*, i.e. necessitating that the apparatus is compatible with the input device, rather than at the *controlling device* ("input device") according to the subject-matter claimed. Instead, the board regards D5 as a more suitable starting point for assessing novelty and inventive step.

1.1.2 Document D5 discloses the following limiting features of claim 1 (as labelled by the board):

An input device ("motion sensor 330" of a "wearable computer 300"; see e.g. column 2, lines 48-49: "... *the motion sensor of the device permits input of position and gesture commands ...*") for use in controlling an electronic apparatus ("display screen 310"; "GUI"; see column 5, lines 20-22: "... *position and gesture commands can be used ... to initiate select and activate responses in a computer's GUI ...*") in communication with the input device (communication between input device and electronic apparatus inherently disclosed at column 8, lines 39-44: "... *components of the wearable computer 300 can be placed at different locations on or off of the body ... the motion sensor 330 can be mounted to the superior dorsal aspect of the hand while the display screen 310 is mounted elsewhere on the body or is placed off of the body ...*"), to perform a selected function (see e.g. Fig. 7), the input device comprising:

A) detection means for detecting a movement of a user's leg portion (see column 8, lines 25-27) wherein the detection means is constituted by sensors effective to output a time-series signal pattern (see e.g. column 4, lines 59-61: "... A

*motion sensor attached to the device measures the movement and generates a signal that corresponds to the movement ..."; column 5, lines 13-16: "... A computing device can employ ... multiple motion sensors ..."; Fig. 3, step 110);*

- B) a database ("catalog of gesture commands") programmed with time-series signal patterns and corresponding control signals ("gesture commands"), each of said control signals being effective to cause the electronic apparatus to perform a different function (see e.g. column 4, line 65 to column 5, line 3: *"If the computing device makes use of more than one gesture command, the particular gesture command that was submitted is determined ... This determination is accomplished by comparison of the gesture that was submitted during the interval of time with a catalog of gesture commands ..."* in conjunction with Fig. 3, steps 120 and 121);
- C) means for comparing the time-series signal pattern output from the sensors and the time-series signal patterns stored in the database, to select the stored control signal corresponding to the output time-series signal pattern (see e.g. column 5, lines 3-5: *"... A match between the submitted gesture and a gesture command in the catalog serves to identify the submitted gesture command ..."*; Fig. 3, steps 120 and 121), wherein
- D) the electronic apparatus performs said selected function in accordance with said selected control signal (see e.g. column 5, lines 9-10: *"... the gesture command is processed to control the computing device ..."* in conjunction with Fig. 3, step 140).



- 1.1.3 Hence, the difference between the subject-matter of claim 1 and the disclosure of D5 is seen to be that the selected control signal is wirelessly transmitted from the input device to the electronic apparatus. Accordingly, the subject-matter of present claim 1 is novel over D5 (Article 54 EPC).
- 1.1.4 Starting from the teaching of D5 (see in particular column 8, lines 25-30 and 39-50 referring to differently located device components and radio devices), the skilled person in data communications would know that there are typically only two possibilities to implement data communications between the motion sensor, located e.g. on the user's foot or leg, and the display screen to be controlled, namely in a *wired* or *wireless* manner. In view of the aim of D5 to provide for a comfortable wearable device and to avoid interfering with clothing (see column 2, lines 52-55), the skilled person would first and foremost choose the wireless communications option, and thus arrive at the solution of claim 1 without exercising inventive skills (Article 56 EPC).
- 1.1.5 The appellant argued that D5 did not clearly indicate *where* the processing of the signals indicative of the movements takes place and *what* signals are actually transmitted between the input device and the controlled electronic apparatus. However, this argument is not persuasive since D5 palpably teaches that motion sensor 330 is supposed to generate the signals indicative of the user movements (see e.g. column 4, lines 59-62) and that gesture commands are transmitted to display screen 310, i.e. the GUI (see e.g. column 5, lines 20-22).

1.2 In view of the above, the main request is not allowable under Article 56 EPC.

2. AUXILIARY REQUEST

Claim 1 of this request differs from claim 1 of the main request basically in that it further specifies that (emphasis added by the board)

- E) the input device is used for inputting a rhythm pattern;
- F) the electronic apparatus to be controlled is termed external device;
- G) the plurality of sensors are attached to at least one portion of the shoes of the user;
- H) the time-series signal pattern is indicative of a walking signal based on the user's footsteps;
- I) the control signal corresponds to a command for instructing the start and end of a rhythm input operation;
- J) the control signal is a command for controlling the external device;
- K) when a time-series signal pattern corresponding to the command for the start of a rhythm input operation is output by the sensors,
  - 1) the input device is arranged to recognise the walking signal not as corresponding to a command, but corresponding to a rhythm pattern until the next time-series signal pattern corresponding to the command is output by the sensors;
  - 2) the input device converts the walking signal into a music rhythm until the next command is output by the means for comparing,
  - 3) such that the user can use the external device to create music or change tempo or

pitch of existing music based on the user's footsteps.

2.1 Article 123(2) EPC

Added features E) to K) are evidently based on the specific embodiment concerned with the use of a rhythm pattern as an input gesture described at page 12, penultimate line to page 13, line 13 in conjunction with Figure 8 of the application as originally filed. The application as filed teaches consistently and exclusively that the control signals, which are supposed to be sent from the input device to the electronic apparatus to be controlled, are commands for controlling the electronic apparatus, i.e. the external device (see e.g. page 2, penultimate line to page 3, first line and claim 2 of the application as filed). This is also reiterated by feature J) of present claim 1.

Added feature I), however, requires that the control signal corresponds to a command for instructing the start and end of a rhythm input operation. But, according to the teaching of the application as filed (see in particular Fig. 8), the commands for instructing the start and end of a rhythm input operation correspond to an initial walking signal marking the beginning of a footstep gesture (a rhythm pattern such as "tan-tan-tatata") to be subsequently performed by the user and to a final walking signal marking the end of that footstep gesture. Hence, the command for instructing the start and end of a rhythm input operation is **not** to be recognised as a command for controlling the external device but merely for *initiating* and *terminating* the actual control "to create music or change tempo or pitch of existing

music" by way of the output control signal. Put differently, in the context of the present application, the control signal cannot be a command for *controlling* an external device and, at the same time, a command for instructing the *start* and *end* of a rhythm input operation (the latter being in fact dedicated to controlling the device), as mandated by features I) and J).

In view of the above, claim 1 does not comply with Article 123(2) EPC.

## 2.2 Article 56 EPC: inventive step

In order also to cover the substantive issues of this auxiliary request, and notwithstanding the objections under Article 123(2) EPC raised above, the board proceeds with an assessment of inventive step as regards present claim 1.

2.2.1 The feature analysis and reasoning set out in section 1.1 above with respect to claim 1 of the main request apply *mutatis mutandis* to claim 1 of this auxiliary request.

2.2.2 Moreover, added features E) and K3) relate to the gesture type ("music rhythm pattern" such as "tan-tan-tatata" as exemplified at page 13, lines 8-9 and in Fig. 8 of the original application) to be performed by the user to control music-specific parameters through the external device. This particular type of footstep gesture devised and utilised according to a predefined, *musical* gesture-to-command mapping constitutes a non-technical aspect of the claimed subject-matter and hence cannot by and in itself contribute to an inventive step, nor can naming the

controlled device differently according to feature F) do so.

- 2.2.3 Feature G) concerns the structural (hardware-based) implementation as regards the sensors detecting the corresponding gesture type. In view of the teaching of D5 that the wearable computer may equally be placed at the user's foot (see column 8, lines 25-27) and that, contrary to the appellant's view, *multiple* sensors may well be used in order to generate movement-based signals (see e.g. column 4, lines 59-62 together with column 5, lines 13-16), this feature must also be considered obvious.
- 2.2.4 Lastly, the remaining added features H) to K2) relate to the functional (software-based) implementation of the underlying musical gesture-to-command mappings by virtually distinguishing between different input gestures ("start", "rhythm" and "stop" patterns) and output commands ("start", "music rhythm" and "stop" commands). However, D5 likewise provides hints towards the implementation of a multitude of gesture-to-command mappings by way of applying a "catalog of gesture commands" (see e.g. column 4, line 64 to column 5, line 3), which the skilled person would readily take up to extend this catalog and thus expand the range of device-control functionalities, including e.g. music-specific ones, in a straightforward manner.
- 2.2.5 In view of the above, even if feature I) were supported by the original application (cf. point 2.1 above), the subject-matter of claim 1 of the auxiliary request would not involve an inventive step in view of D5 and the skilled person's common general knowledge.

2.3 Consequently, the auxiliary request is not allowable under Articles 123(2) and/or 56 EPC.

**Order**

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

The appeal is dismissed.

The Registrar:

The Chair:



K. Götz-Wein

A. Ritzka

Decision electronically authenticated