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(71) Applicant *(for all designated States except US)*: **BODY & MIND UITGEVERIJ B.V.** [NL/NL]; Koningin Wilhelminaplein 1 04.08.12, NL-1062 HG Amsterdam (NL).

(72) Inventor: **DIJS, Alfred, Marie**; Van Slingelandtlaan 2, NL-3051 HW Rotterdam (NL).

(74) Agents: **DOHMEN, Johannes, Maria, Gerardus** et al.; Algemeen Octrooi- en Merkenbureau, P.O. Box 645, NL-5600 AP Eindhoven (NL).

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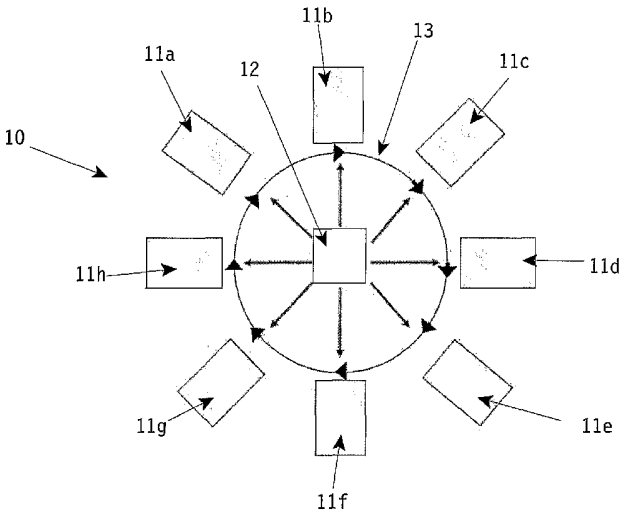
(54) Title: DEVICE FOR PRACTICING A MULTI-PLAYER RECREATIONAL ACTIVITY, SUCH AS A GAME



(57) Abstract: The invention relates to a device for practicing a multi-player recreational activity, such as a game, comprising: i) a plurality of game interaction devices, each operable by a player and each comprising game action input means arranged for receiving one or more game actions, inputted by said player, and also game action signal generating means for generating and transmitting one or more game action signals in response to the game actions inputted by the player concerned; ii) a game processing device comprising: a) game action signal receiving means for receiving one or more game action signals transmitted by the game interaction devices operated by the players; b) game processing means for processing the received game action signals and in response thereto for influencing the course of the game to be played together by the plurality of players; and also c) display means designed to display the course of the game as a result of the game actions input by the plurality of players. The object of the invention is to provide a game device according to the above-mentioned introduction which makes it possible in an easy and uncomplicated manner for a plurality of persons (players) to pursue a recreational activity, e.g. play a game, interactively in a fair and faultless way. According to the invention, the device is characterized in that for the transmission and receiving of the game action signals the game interaction devices and the game-processing device are provided with wirelessly functioning communication means.

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Device for practising a multi-player recreational activity, such as a game.

DESCRIPTION

The invention relates to a device for practising a multi-player recreational activity, such as a game, comprising:

i) a plurality of game interaction devices, each operable by a player and each comprising game action input means arranged for receiving one or more game actions, inputted by said player, and also game action signal generating means for generating and transmitting one or more game action signals in response to the game actions inputted by the player concerned;

ii) a game processing device comprising:

a) game action signal receiving means for receiving one or more game action signals transmitted by the game interaction devices operated by the players;

b) game processing means for processing the received game action signals and in response thereto for influencing the course of the game to be played together by the plurality of players; and also

c) display means for displaying the course of the game as a result of the game actions inputted by the plurality of players.

In such a device, in which a plurality of players can pursue a recreational activity, such as a game, the course of the game is partly determined by the game actions executed by the various players. The competition aspect is generally found very important in the joint pursuit of a recreational activity, and for the device it is also important to ensure that the game processing device handles the game actions generated by the players in a neutral, i.e. fair, way. Unfair processing of the various game action signals from the various players, where one or more players has an apparent advantage over the other players, is undesirable because handling the various game actions unfairly, i.e. partially, makes the device lose its functionality.

In the present devices in which a plurality of players can interactively pursue a joint recreational activity, such as a game, the communication between the various players and the game processing device is such that there is no question of fast, impartial game action processing.

The object of the invention is to overcome these disadvantages and to provide a gaming device according to the abovementioned introduction which makes it possible in an easy and uncomplicated manner for a number of persons (players) to pursue a recreational activity, such as play a game, interactively and in a fair and faultless way.

According to the invention, the device is characterised in that for the transmission and receiving of the game action signals the game interaction devices and the game processing device are provided with wirelessly functioning communication means.

More specifically, in one embodiment the game processing device comprises communication channel setting means for setting a communication channel for wireless communication with the game interaction devices, each game interaction device also comprising communication channel detection means for detecting the communication channel set by the communication channel setting means for wireless communication with the game processing device.

A fair way for the recreational activity to be pursued by the plurality of players is achieved in that the game action signal receiving means comprise a game action system clock and that the game interaction devices each comprise a game interaction system clock, and that each game interaction device comprises clock synchronisation means designed for synchronisation of the game interaction system clock with the game action system clock. This means that the players pursue the activity, for example a game, in the same time dimension, and it is ensured that one or more players are not given an advantage.

More specifically, the game action signal receiving means comprise register setting means for setting a register, in which active game interaction devices which are in communication with the game action signal receiving means can be registered. This means that the device can easily be informed of which and how many players are actively pursuing the recreational activity together.

The register setting means can be designed to allocate a unique registration information code to each active game interaction device.

A completely fair pursuance of the recreational activity is achieved according to the invention in that each game action signal generated by the game action signal generating means is made up of at least a game action information code and a game action time information code generated by the corresponding

game interaction system clock. In particular, including a time indication in each game action of the player results in a fair chronological execution of the game action by the device, so that it is ensured that one player is not accidentally given an unfair advantage over another player.

Furthermore, each generated game action signal can comprise the unique registration information code, so that good identification of each game action in relation to other game actions is achieved.

For a rapid readout of the various game actions generated from the various players, the game action signal receiving means are accordingly designed for sequentially receiving game action signals generated and transmitted by each active game interaction device and, depending on the game action time information codes concerned, transmitting them chronologically to the game processing means.

More specifically, for the purpose of receiving the game action signals being transmitted the game action signal receiving means are designed to generate and sequentially send a game action request signal to each active game interaction device and if a game action signal is not received by the game action signal receiving means after a game action request signal being sent, the register setting means are designed to deactivate the game interaction device concerned.

This last feature provides for a smooth operation of the device because it means that the non-active players who are delaying the recreational activity can be further ignored by the device.

In a first functional embodiment the game action signal receiving means and the game processing means are accommodated in one housing, while in another embodiment the game action signal receiving means and the game processing means are each accommodated in separate housings which are connected so as to be in communication with each other, the game processing means also comprising a game processing system clock, and the game action signal receiving means comprising clock synchronisation means, designed to synchronise the game interaction system clock with the game processing system clock of the game processing means.

The invention will now be explained in more detail with reference to a drawing, which drawing in succession shows the following:

Figure 1 shows a first embodiment of a device according to the invention;

Figure 2 shows another embodiment of a device according to the invention;

Figure 3 shows yet another embodiment of a device according to the invention;

Figure 4 shows the configuration of a signal as used in the application of a device according to the invention.

In order to provide a better understanding of the invention, the illustrated parts which correspond in the various figures are indicated by identical reference numerals in the description of the figures below.

In figure 1 a first embodiment of the device according to the invention for a recreational activity to be pursued by a plurality of players is indicated by the reference numeral 10.

The term recreational activity can mean, for example, an action game to be played in a competition context, but it can also be a fitness programme in which a plurality of players have to complete a fitness programme or fitness course in a competition context.

The device 10 is made up of a game processing device 12 and also game interaction devices 11a – 11h which are connected so as to be in communication with said game processing device. The number of game interaction devices 11a – 11h is indefinite here; there can be two, but there can also be more of said devices. Each game interaction device 11a – 11h is operated by a player and is provided with game action input means (not shown), which are used by the player for inputting one or more game actions.

These input means (not shown) can be, for example, operable buttons or handles, comparable to a joystick or mouse pointer. The game interaction device 11 can be in the form of, for example, a mat which can be placed on a base and in which several game action input means which the player can operate with his foot are provided, said game action input means being in the form of contact points in the mat.

Each game interaction device 11 is also provided with game action signal generating means (likewise not shown), which generate and transmit game action signals in response to the game actions performed by the player.

The game action signal 16 generated by each game interaction device 11 is received, by way of wireless communication means 13, by the game

processing device 12 by means of so-called game action signal receiving means 17. The game action signals 16 generated by the player and received by the signal receiving means 17 are transmitted to game processing means 19, which are designed to process said game action signals 16 and in response thereto influence the course of the game or activity being pursued by the players together.

In a specific embodiment the game processing means 19 can be in the form of a computer provided with a storage system for a computer program and also a central processing unit such as a memory processor. The game processing device 12 further comprises display means 20 designed to display the course of the game as a result of the game action signals 16 input by the players. The display means 20 here can be in the form of a visual display unit.

In order to bring place the plurality of players in proper communication with the game processing device 12, communication channel setting means 17' are provided, which set a communication channel for wireless communication with the game interaction devices 11. For this purpose, a communication channel set by the communication channel setting means 17' is detected by each game interaction device at the start of play of the recreational activity, each game interaction device 11 being provided with so-called communication channel detection means (not shown). A secure but, above all, stable wireless connection is therefore achieved between the various game interaction devices 11 and the game processing device 12.

Although according to the invention an important aspect of the device is the wireless communication aspect, it is even more important for the various players to be able to communicate in an equal way with the game processing device 12, and therefore to ensure that one of the players does not have an advantage over the other players during the pursuance of the recreational activity. To this end, it is desirable for all players (all game interaction units 11) to have the same time dimension.

For this purpose, both the game interaction units 11 and the game processing device 12 are provided with a system clock 14a, 15a respectively, each game interaction unit 11 furthermore being provided with clock synchronisation means 14b, which synchronise the system clock 14a of each game interaction unit 11 with the system clock 15a of the game processing device.

For a better handling of the game action signals 16 by the game

processing device 12, register setting means 18 are provided, which set a register in which all active game interaction devices 11, i.e. all devices participating in the recreational activities, are registered. For this purpose, the register setting means 18 allocate a unique registration information code to each active game interaction unit 11 recognised by the game processing device 12.

The wireless communication between the various game interaction units and the game processing device 12 will be achieved partly on the basis of this unique registration information code, which enables the various players to participate in the recreational activity impartially and with equal chances.

For the purpose of the wireless communication between the game interaction units 11 and the game processing device 12, each game action signal 16 generated by the game action signal generating means of each game interaction device 11 is built up of a number of information codes. At least one information code relates to the so-called game action information code 43 (see figure 4), which contains information concerning the game action which has been performed by the player. The game action can be, for example, pressing a button or moving a joystick.

Another information code of the game action signal 16 relates to a time information code 42, so that a time is also incorporated in each game action signal 16, indicating the moment at which the game action was performed by the player concerned.

In addition, each generated game action signal 16 can also comprise the unique registration information code 41, so that the game processing device can also incontrovertibly establish which game interaction device 11 has generated and transmitted the game action signal 16.

For operating the device for a plurality of players to play or pursue a recreational activity, the various game interaction devices 11 communicate with the communication channel setting means 17' of the game action signal receiving means 17 in order to set a communication signal for wireless communication. The register setting means 18 set up a register in which all active game interaction devices 11 are registered by means of a unique registration information code 41.

The clock synchronisation means 14b also synchronise the system clock 14a of each game interaction device 11 with the system clock 15a of the game processing device, so that each player participates impartially with the same time dimension in playing the game or pursuing the recreational activity.

While pursuing the activity the players will use their game interaction devices 11 to generate game action signals which are built up of the allocated registration information code, the time at which the game action was performed by the player concerned, and also information about the game action itself.

The game signal receiving means 17 will control all active game interaction units 11a – 11h, i.e. all those being played on, in sequence (see figure 1) by generating and sending a game action request signal to each game interaction device 11. The receipt of such a game action request signal by the game interaction device 11 concerned results in the game interaction device 11 transmitting the generated game action signal 16. The game action signal receiving means 17 will transmit the various game action signals 16 received in sequence to the game processing means 19, in such a way that the game action signals 16 being received are transmitted in the correct time sequence, i.e. in the time sequence that the player performed the game action, to the game processing means 19, where the game action signals 16 are processed and thus influence the course of the game or the recreational activity.

It is quite possible that the control of the various game interaction units 11 in sequence by the game action signal receiving means 17 may result in the sequential receipt of generated game action signals 16, but that said game action signals 16 are not received chronologically. However, owing to the fact that each game action signal 16 has a time information code 42 giving the time at which the game action was performed by the player, all game action signals received in sequence are transmitted in the correct time sequence to the game processing means 19.

This method of signal processing results in an impartial and fair way of carrying out the recreational activity or playing the game by the various players, because it ensures that an unexpected later transmission of the game action signal 16 concerned to the game action signal receiving means 17 does not to lead to a player who has performed a game action earlier in time having his game action processed at an unfair (read: later) time by the game processing means 19.

This means that the sequence in which the game action signal receiving means 17 interrogate the various game interaction devices 11 for the transmission of the game action signals 16 can differ from the ultimate chronological

processing of the game action signals 16 by the game processing means 19.

In an embodiment such as that shown in figure 2 both the game action signal receiving means 17 and the game processing means 19 are accommodated in the same housing 12, while in another embodiment such as that shown in figure 3 both the game action signal receiving means 17 and the game processing means 19 are housed in different housings 12' and 19' respectively. Here too, the communication between the signal receiving means 17 and the game processing means 19 is wireless or by means of a cabled system.

Since the ultimate processing of the game action signals 16 is performed by the game processing means 19, in the embodiment in figure 3 the game processing means 19 are also provided with a system clock 21a. For the synchronisation of the system clock 15a with the system clock 21a of the game action signal receiving means 17, the latter are provided with synchronisation means 15b for synchronising the system clock 15a with the system clock 21a.

Figure 4 shows the configuration of a game action signal 16 in various information codes, in which a first code with a length of 8 bits relates to the unique registration information code 41 which is allocated by the game action signal receiving means 17 to each active game interaction device 11. Another information code from which a game action signal 16 is made up relates to the time at which the game action is performed by the player concerned, which time is measured as from the time of synchronisation between the various game devices with the system clock 15a of the game action signal receiving means or the system clock 21a of the game processing means 19 (see figure 3). In addition, 16 bits are reserved for another information code 43 which contains specific information concerning the game action which has been performed by the player concerned.

The game action can involve, for example, a player having pressed or not having pressed a game button or moved a joystick in a specific direction, or a combination of the above. The information code concerning the game action can therefore contain a number of status information codes relating to the various buttons of the game interaction device 11.

It will be apparent that with a device of the type described above various players can take part together in a certain recreational activity or can play the game together in a fair way.

CLAIMS

1. A device for practising a multi-player recreational activity, such as a game, comprising:

i) a plurality of game interaction devices, each operable by a player and each comprising game action input means arranged for receiving one or more game actions inputted by said player, and also game action signal generating means for generating and transmitting one or more game action signals in response to the game actions inputted by the player concerned;

ii) a game processing device comprising:

a) game action signal receiving means for receiving one or more game action signals transmitted by the game interaction devices operated by the players;

b) game processing means for processing the received game action signals and in response thereto for influencing the course of the game to be played together by the plurality of players; and also

c) display means for displaying the course of the game as a result of the game actions inputted by the plurality of players, characterised in that for the transmission and receiving of the game action signals the game interaction devices and the game processing device are provided with wirelessly functioning communication means.

2. A device according to claim 1, characterised in that the game processing device comprises communication channel setting means for setting a communication channel for wireless communication with the game interaction devices.

3. A device according to claim 2, characterised in that each game interaction device comprises communication channel detection means for detecting the communication channel set by the communication channel setting means for wireless communication with the game processing device.

4. A device according to one or more of the preceding claims, characterised in that the game action signal receiving means comprise a game action system clock and wherein the game interaction devices each comprise a game interaction system clock, and wherein each game interaction device comprises clock synchronisation means designed for synchronisation of the game

interaction system clock with the game action system clock.

5. A device according to one or more of the preceding claims, characterised in that the game action signal receiving means comprise register setting means, for setting a register, in which active game interaction devices which are in communication with the game action signal receiving means can be registered.

6. A device according to claim 5, characterised in that the register setting means are arranged to allocate a unique registration information code to each active game interaction device.

7. A device according to one or more of the preceding claims, characterised in that each game action signal generated by the game action signal generating means is made up of at least a game action information code and a game action time information code generated by the corresponding game interaction system clock.

8. A device according to claim 7, dependent upon claim 6, characterised in that each generated game action signal comprises the unique registration information code.

9. A device according to claim 7 or 8, characterised in that the game action signal receiving means are arranged for sequentially receiving game action signals generated and transmitted by each active game interaction device and, depending on the game action time information codes concerned, transmitting them chronologically to the game processing means.

10. A device according to claim 9, characterised in that for the purpose of receiving the game action signals transmitted the game action signal receiving means are arranged to generate and sequentially send a game action request signal to each active game interaction device.

11. A device according to claim 10, characterised in that if a game action signal is not received by the game action signal receiving means after it has sent a game action request signal, the register setting means are arranged to deactivate the game interaction device concerned.

12. A device according to one or more of claims 1 - 11, characterised in that the game action signal receiving means are accommodated in one housing.

13. A device according to one or more of claims 1 - 11, characterised in that the game action signal receiving means and the game processing means are

each accommodated in separate housings which are connected so as to be in communication with each other, the game processing means also comprising a game processing system clock, and the game action signal receiving means comprising clock synchronisation means for synchronising the game interaction system clock with the game processing system clock of the game processing means.

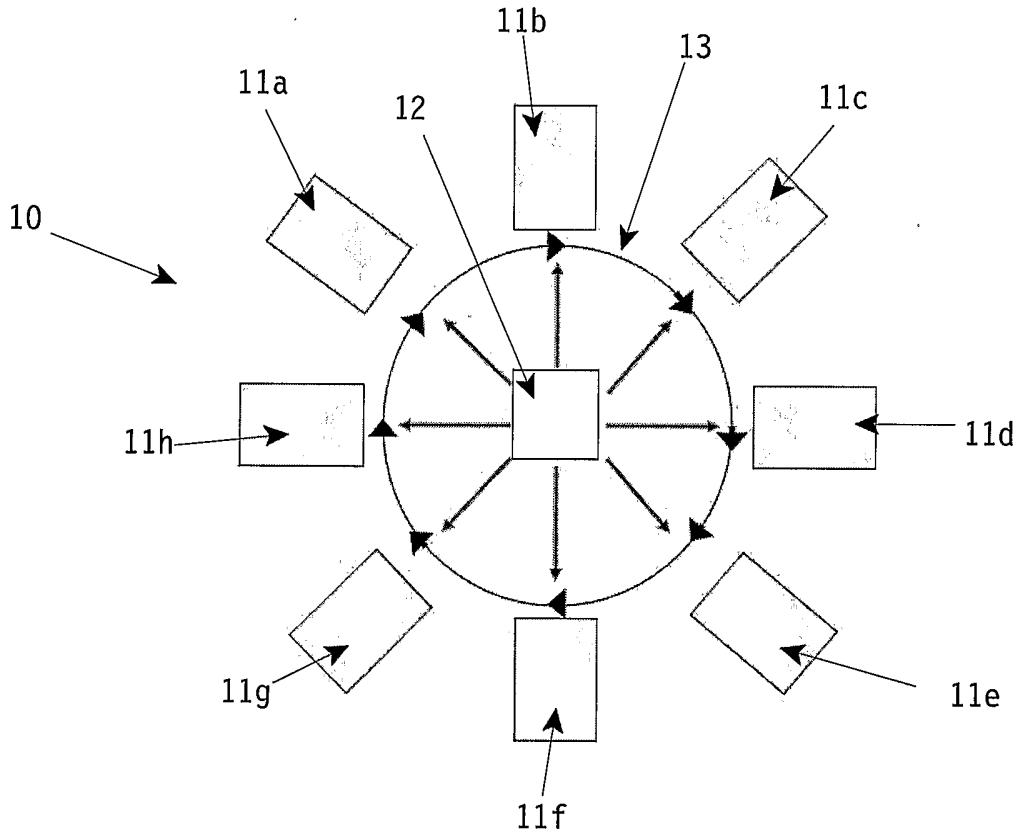

Fig. 1

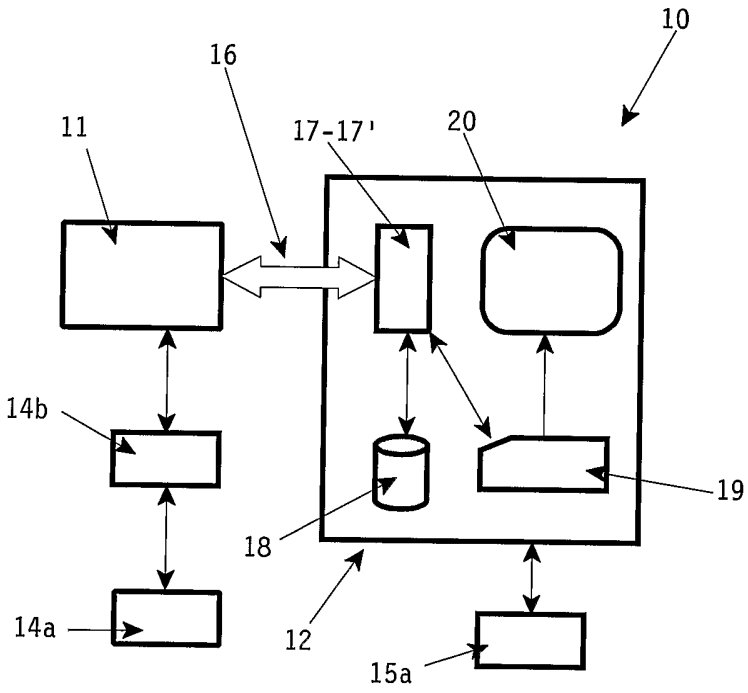

Fig. 2

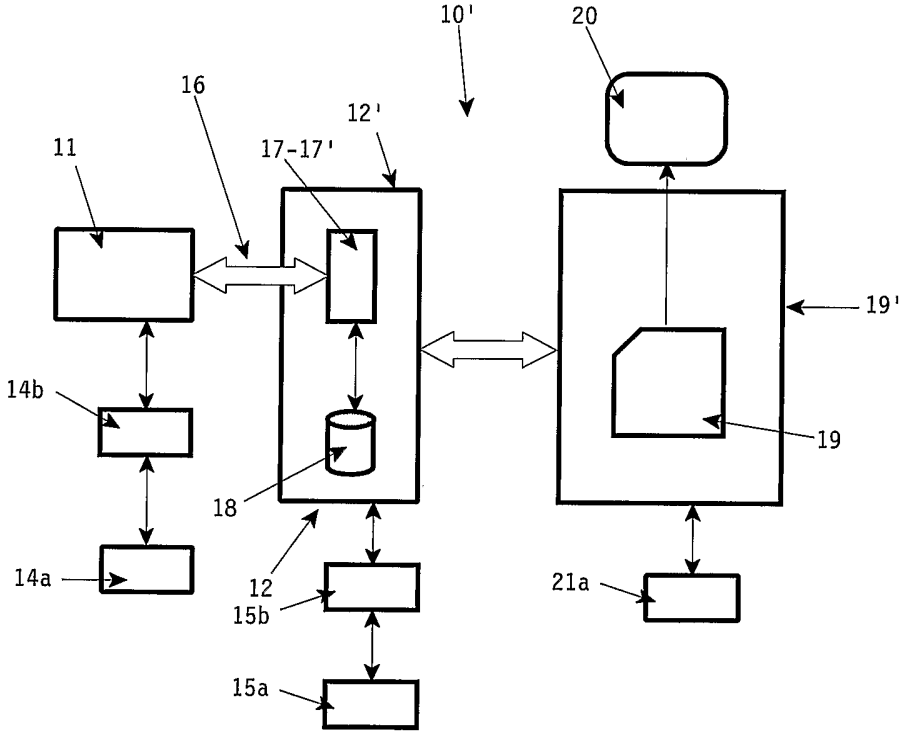

Fig. 3

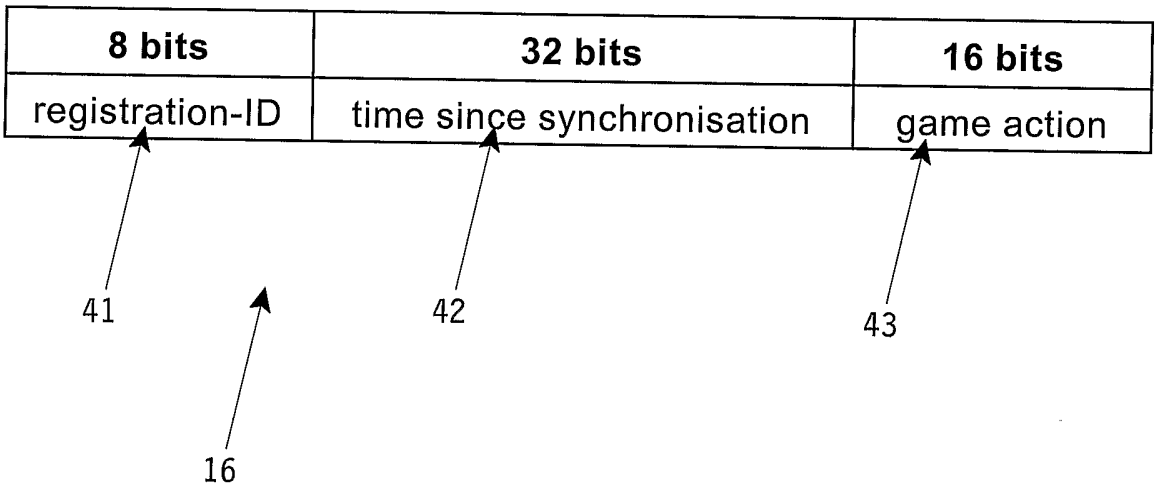
8 bits
32 bits
16 bits
registration-ID
time since synchronisation
game action
41
42
43
16

Fig. 4

INTERNATIONAL SEARCH REPORT

International application No
PCT/NL2006/000239

A. CLASSIFICATION OF SUBJECT MATTER
INV. A63F13/12

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
A63F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)
EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X Y	US 2002/061743 A1 (HUTCHESON DOUG ET AL) 23 May 2002 (2002-05-23) paragraph [0035] paragraph [0062] - paragraph [0064] paragraph [0085] paragraph [0105] paragraph [0109] -----	1-5,12, 13 7
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Y	US 5 618 045 A (KAGAN ET AL) 8 April 1997 (1997-04-08) column 6, line 1 - line 6 column 6, line 41 - line 53 -----	7
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[X] Further documents are listed in the continuation of Box C.

[X] See patent family annex.

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Date of the actual completion of the international search	Date of mailing of the international search report
25 July 2006	01/08/2006

Name and mailing address of the ISA/	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL – 2280 HV Rijswijk Tel. (+31–70) 340–2040, Tx. 31 651 epo nl, Fax: (+31–70) 340–3016	Tito Martins, J

Form PCT/ISA/210 (second sheet) (April 2005)

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No
PCT/NL2006/000239

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