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(54) Clock

Uhr

Horloge

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Description

Technical Field

[0001] The present invention is related to a clock.

[0002] A clock is an instrument used for indicating and maintaining the time and passage of time.

[0003] Especially the invention relates to a clock with changeable clock face elements. In particular, the present invention is related to a clock according to claim 1. The present invention is also related to a server and a system for replacing the clock face element of a clock.

Background of the invention

[0004] When today a clock is released on the market its clock face is a fixed component usually designed by a manufacturer and/or the network provider and programmed in the manufacturing environment of the clock.

[0005] A clock face is the part of an analog clock that displays the time through the use of a fixed numbered dial or dials and moving hands. A well known form, the dial is numbered 1-12 indicating the hours in a 12-hour cycle, and a short hour hand makes 2 revolutions in a day. A longer minute hand makes one revolution every hour. The face may also include a second hand which makes one revolution per minute, and other hands. The term is also used for the time display on digital clocks and watches.

[0006] However, it is of course possible, to use other cycles as 12-hour cycle, for e.g. a 24-hour analog dial, or even to utilize graphical representation of other timescales as a 10-hour clock as it is implemented in the time of the French revolution or to utilize an analog representation of the watch internet time.

[0007] US 2005/0278757 A1 describes a method for downloading watch faces to a mobile electronic device. Watch faces are broadcast to mobile electronic devices. The watch faces are automatically delivered and stored on a mobile electronic device for selection by a user. Using the device, users can quickly change the current watch face. The user may customize the watch faces they receive. For example, the user may select from a list of available watch faces.

[0008] US 6 449 219 B1 describes a timepiece with a computer based clock, in which time is represented on a display and additionally further information concerning the progress of time is displayed like playing a movie in slow motion. According to the actual season, an animation program develops various manifestations of a tree in the course of the year. The timepiece is adapted to connect with other devices, like a GPS receiver to detect the location of the device and additional sensors to measure environmental parameters such as humidity and temperature.

[0009] It remains a desire to provide a user the possibility to further adapt the clock face element of a clock according to his needs and preferences.

Brief description of the invention

[0010] The present invention suggests a clock with a changeable user interface. In particular, the present invention suggests a clock comprising an operating system for the clock, a radio interface for connecting to a wireless network, a display on which a clock face element is displayed to enable the user to operate the clock according to the operating system and a local storage where a data files associated with the clock face element are stored. The local storage permits the storage of a plurality of clock face elements and means for managing the clock face element such that the user can select one out of the plurality of stored clock face elements.

[0011] The clock comprises dynamic means for rendering the clock face element adapted to provide an automatic switch between clock face elements out of the plurality of the stored clock face elements as function of time and of context of daily life ascertained for the user at said time. The dynamic means for automatic rendering of the clock face element are arranged to monitor and store the user behavior, such that the clock face element offered to the user is based on clock face items predominately chosen in the past according to the user behavior ascertained.

[0012] Clock faces may differ very greatly in terms of their structure and the number of parameters displayed. The different desires, demands and capabilities of the users mean that there is generally not a single clock face which meets the demands of all potential users. In practice, by way of example, a particular clock face may be far too complicated and incomprehensible for a first, technically inexperienced user, yet may still be too simple for a second, technically experienced user, because the latter desires further refined setting options or would like to use further services offered.

[0013] Even for a single person the most frequently used functionalities may vary throughout a day and a week depending on the context of the daily life of the user. At work, usually calling numbers or caller lists as well as business e-mail functionalities are most important. At home, the same user may never access his business e-mail but rather use a camera and a photo gallery to show photos to visitors. At leisure times, for example on a festival the most important things to this user are latest updates about the festival and notifications when a favorite band starts playing. During holidays a personal blog may be the most frequently accessed service.

[0014] The clock face element of today's clocks can only be adapted to a very little extent to fit to the personal context of the user let alone to a varying context. At most the user has the possibility in some cases to make some accommodations. E.g. he may configure some aspects of the clock face element such as the language and the date format. He may also change the look and feel of the clock face element by selecting a template or by "skinning" the clock, i.e. changing the appearance of elements shown on the display. In some cases, the user may also

install additional applications on the telephone.

[0015] The current invention comprises a clock with additional functionality.

[0016] Whereas known watches may only display only a limited set information, as for e.g. moon phases or time information relating to different time zones, the current invention allows to display an increased amount of information on a clock face.

[0017] The current invention proposes to use a clock face as medium for representing a variety of information, wherein at least a part of the invention is symbolized in graphical representations.

[0018] In an embodiment, a certain clock face element may vary. The term "clock face element" relates to certain types of elements. In one embodiment of the invention the clock face may comprise a variety of singly clock face elements, which for e.g. represent certain information, for e.g. weather data or events or places.
In one example, the clock face contains information about at least one location.

[0019] In another example, the clock face displays information about an event, for e.g. a meeting.

[0020] The variable and flexible configuration of the clock according to the invention allows a user of the clock to adapt the clock to event, which selects.

[0021] A combination of functionality concerning a selection of clock face elements is combinable with a plurality of data files.

[0022] The data files may contain information in unambiguous formats and with various contents. For example it is possible to integrate pictures.

[0023] In the case, that the user for e.g. travels by train from Cologne to Paris and leaves Cologne at 8 o'clock, the clock face may show at the position of 8 o'clock a graphical representation of Cologne for e.g. the Cologne cathedral.

[0024] If at 12 o'clock a graphical representation of the at that time reached location, respectively reachable location, Paris may be represented, for e.g. by an photo of the Eiffel Tower.

[0025] In one embodiment of the invention, the clock face is designed as touchable screen.

[0026] The touchable structure of the clock face has a plurality of advantages.

[0027] For example it is possible to set an alarm by pressing at the touch screen platform.

[0028] In one example, it is possible to combine two different parameters to define conditions for an action.

[0029] For example it is possible, to combine weather information with time data in order to allow a smart alarm setting. Such smart alarms are configured contextually.

[0030] In one embodiment of the Invention the clock allows a contextual awareness of a system which integrates the clock.

[0031] According to one embodiment of the invention a plurality of clock face elements can be used.

[0032] Each of these clock face elements may be combined.

[0033] However, it is within the scope of the invention that several clock face elements can operate independent from other clock face elements. An example for this is the independence between clock face elements relating to weather data and clock face elements relating stock information.

[0034] According to an example, widgets are used.

[0035] Widgets are interactive virtual tools that provide single-purpose services such as showing the user the latest news, the current weather, the time, a calendar, a dictionary, a map programme, a calculator, desktop notes, photo viewers, or even a language translator, among other things. Examples of widget engines include: Dashboard widgets of Apple Macintosh, Microsoft gadgets in Windows Vista and in the Windows Live system, gDesklets, Adesklets, Screenlets of Linux systems, Portlets in Google Desktop, Yahoo! Widgets, Klips in Klipfolio, Mobile widgets webwag,Zumobi, Mywidz, Plusmo and WidSets are a few examples and Adobe AIR.

[0036] Mobile widgets can maximize clock face use and may be especially useful in placing live data-rich applications on the clock. Several J2ME-based mobile widget engines exist including Bling Software, BluePulse, Zumobi, Mywidz, Plusmo, WidSets, Webwag, WidX, Bicon.

[0037] Several AJAX-based native widget platforms are also available for mobile devices including Access' NetFront, Openwave's MIDAS and Opera's Opera Platform.

[0038] For those skilled in the art, it is obvious, that a plurality of widgets can be used to implement the current invention with multiple operating system and multiple types of clocks designed according to the current invention.

[0039] According to an embodiment of the inventive mobile communication the operating system of the clock interacts with the clock face element such that the user controls the clock through the selected clock face element.

[0040] According to another embodiment of the inventive clock means for rendering the clock face element are provided. The means for rendering can associate functionalities and/or services with elements of the clock face element. The means for rendering provide a considerable flexibility for the user to adapt the clock face element.

[0041] In another embodiment the dynamic means for rendering the clock face element can perform an automatic rendering of the clock face element. The dynamic means for rendering the clock face element can perform an automatic rendering of the clock face element as a function of day time.

[0042] In a further development the dynamic means for rendering the clock face element perform an automatic rendering of the clock face element as a function of the calendar day. The dynamic means for rendering of the clock face element is arranged to monitor and store the user behavior. It may be convenient if the automatic rendering of the clock face element is based on the mon-

itored user behavior. The dynamic means for rendering support the user in adapting the clock face element. It helps him to find the most efficient clock face element for his needs.

[0043] In yet another embodiment of the present invention the clock is provided with a manager means enabling a user to download a clock face element from a remote device. The manager means can control the storage of the downloaded clock face element in the local storage. In cases where the clock face elements stored in the local storage do not meet the needs of a specific user the manager means allow installing another clock face element from a remote device.

[0044] According to a further aspect the present invention suggests a system comprising a clock according to the invention and a server. The server provides a website on which a selection of clock face elements are displayed, wherein a user can select a specific clock face element for download out of a plurality of clock face elements. The server comprises a download manager which executes the download of the data files associated with a selected clock face element to a receiving device. The server is a remote device from which clock face elements can be downloaded if the clock face elements stored on the clock cannot satisfy the needs of a specific user. The website of the server can be provided with a gallery of clock face elements from which a specific clock face element is selectable by a user. Since the storage capacity of the server is much larger than the local storage of the clock it is possible to offer the user a very large variety of clock face elements for download.

[0045] Further advantages of the present invention will become apparent when reading the detailed description appended with drawings.

Brief description of the drawing

[0046] In the drawing embodiments of the present invention are illustrated. It shows:

Figure 1 a top view on a clock;
Figure 2 an illustration of a detailed view of the display of the clock of figure 1; and
Figure 3 an illustration of an implementation of an event depending setting of an alarm clock is set.
Figure 4 an architecture of a system embodying the present invention.

[0047] In the drawing identical or similar elements are labeled with the same reference numbers.

Detailed description

[0048] Figure 1 shows a schematical front view of clock which is labelled as a whole with the reference number 100. The clock 100 contains a display 102 on which a clock face element 101 is displayed. The display 102 is also utilized to display the text of SMS messages and the visual contents of MMS messages. The display 102 is also used to display icons 103 enabling the user to access in a quick and convenient way certain functionalities of the clock such as setting of places for displaying information; selecting information channels and/or types of information; or other functionalities of the clock as for example setting of alarm times to name only a few examples. This aspect will be described with reference to figure 2 showing the display 102 in greater detail.

[0049] In connection with the present invention the clock 100 is only a representative of different types of clocks. According to the invention any instrument used for indicating and/or maintaining the time and passage of time can be designed according to the invention. For the sake of simplicity, however, we refer only to a clock but other clocks may take the place of the clock in connection with the present invention. The present invention is not limited to clocks and Includes any other types of clocks having a clock face element.

[0050] The clock is wirelessly connected to a PLMN (Public Land Mobile Network) via a radio access network or another network capable of allowing an exchange of information.

[0051] The PLMN is a core network of the mobile communication system operated by a mobile network operator and may be configured according to the GSM standard or according to the UMTS standard, for example. The radio access network may be configured as a GERAN (GSM Edge Radio Access Network) according to the GSM standard or as an UTRAN (Universal Terrestrial Radio Access Network) according to the UMTS standard, for example. The UMTS standard permits the user to connect wirelessly to the internet at a comparable data rate as with DSL connections.

[0052] Fig. 1 contains two parts, fig. 1 a and fig. 1 b. They represent different times and states of the clock.

[0053] Examples of information displayable a clock face are shown in fig. 1.

[0054] The part fig. 1a shows a symbol 110 for an existence of one or more alarm times, a set by an user of the clock. The alarm times are in this figure noticed on the clock face ring at the position of 7 o'clock and 11 o'clock.

[0055] This fixed alarm times are marked with reference numbers 111 and 112.

[0056] Preferably, the clock is designed as a touch screen platform. This allows a very easy setting of alarms, for example by tapping at the positions 111 and 112.

[0057] However, it is also possible to define a type range in which an alarm could occur.

[0058] The setting and the graphical display of a flexible alarm time are displayed In fig. 1 b.

[0059] The reference symbol 130 shows the existence of a flexible alarm time.

[0060] The user of the clock may activate a flexible alarm time with different activation means. In one example the user may install a period for a flexible alarm time

by flicking around the clock face between two times 131 and 132.

[0061] The clock is equipped in a way, that it recognizes the occurrence of an interval for an alarm with a combination with another parameter.

[0062] Therefore, the clock is enabled to show the user of the clock at the clock face parameters for influencing a selection of time between the two time parameters.

[0063] Furthermore the clock comprises elements for displaying an occurrence at a certain location, for example the location of the clock.

[0064] To facilitate the visibility of time, a minute hand 115 and an hour hand 118 may be utilized.

[0065] According to embodiments of the invention, further information elements may be integrated.

[0066] The clock may comprise widgets 120, 121, 122, 123 which are used for displaying additional information.

[0067] For example the widget 120 displays a stock exchange price, respectively a change of the stock exchange price. The corresponding abbreviation of the stock is also integrated, in this case VOD for Vodafone. This display shows, that at a certain stock trade the shares of Vodafone have risen for 16 points.

[0068] The further widget 121 displays the development of an stock index; in this example the Dow Jones; abbreviated and displayed with DOW. The minus sign indicates, that the stock index has fallen.

[0069] A further widget 122 contains information about the number of tasks the user of the clock has to perform within a certain time interval. The number 3 stands for the count of tasks to be performed.

[0070] According to a further embodiment of the clock, a widget with additional functionalities are included. The widget 123 shows an existence of tasks. The widget 123 contains a hook, which graphically displays, that at least a part of tasks has been performed.

[0071] A further widget 125 displays information about an expected or current weather - preferably relating to the time segment - in this case 6 o'clock - where it is graphically located.

[0072] Fig. 1b shows an integration of two different alarm times: 7 am at sunny weather and 10 o'clock at rainy weather.

[0073] Fig. 1b shows an example, wherein a selection of the relevant parameter for activating the alarm times represented by the alarm hands 131 and 132 is related to at least one parameter - in this case weather conditions 133 and 134.

[0074] Fig. 2a illustrates a further example. The clock face according to figure 2a contains a minute hand 215, an hour hand 218 and a second hour hand 219 for a time at another place, for example at Tokyo (world time).

[0075] According to one example, the hands are realized by widgets.

[0076] The clock face contains furthermore additional graphical elements, which are according to one example at least partly created by widgets.

[0077] As in a conventional clock, a minute hand, an hour hand and/or additional hands for further times, for example at least one world time rotate around a central point 210 of the clock face.

[0078] According to one embodiment of the invention a graphical elements representing time dependant information and/or activity are located within segments corresponding to that time.

[0079] Events with a certain duration are represented as segments of a circle.

[0080] A first segment 221 of a circle (time interval) displays the time scheduled for a meeting with a team.

[0081] A further segment 222 of a circle (time interval) displays a period of time used for a further activity, for example football practice.

[0082] Further events are presented at locations corresponding to the time, at which they occur.

[0083] For example intended meetings or telephone calls with people - Grit, Alex, Lisa, Tom - are displayed with graphical elements 240, 241, 242, 243, 241, for example dots, which are located at time positions corresponding to a time, where it is scheduled to contact them, for example by telephone, with an electronic message or personally.

[0084] Further events are also displayed at an occurring time, for example a next bus scheduled for travelling the user of the clock home is displayed with the reference number 244.

[0085] According to one embodiment of the invention, a selection of elements to be displayed is variable and can be selected and/or modified by the user according to his demands.

[0086] An example of information elements which can be integrated into the clock face are described afterwards according to figure 2b. Figure 2b contains elements which are suitable for an integration into the clock face.

[0087] Around the central point 210 of the clock face, areas are oriented, wherein the areas display weather forecast information, for example temperature, humidity or a graphical symbol of the weather expected.

[0088] However, it is within the scope of the invention, that for the current time the current weather is displayed and for a time just finished the weather which occurred at that time is shown.

[0089] If the user utilizes the clock for example at 3 o'clock, the current weather is displayed in the segment 252, which corresponds to 3 o'clock.

[0090] For the following hours a graphical symbols 253, 254, 255, 257 and 250 are integrated.

[0091] The segment 251 may contain information about weather situation which occurred before the current time.

[0092] For the information which is stored in the clock and/or received from the clock - for example from a communication network - is used for defining further actions.

[0093] A utilization of externally obtained information for a defining conditions for actions is displayed according to figure 3.

[0094] Figure 3a shows a clock face with two different

alarm times, which are symbolized with alarm hands 331 and 332. The first alarm time - alarm hand - is set by a user 360 at 7 o'clock.

[0095] The second alarm time - alarm hand - 332 is set by the user 360 at 9.30.

[0096] The user may activate - for example by tapping - a parameter for a selection between the two alarm times.

[0097] According to one embodiment of the invention, a user of the clock may activate - for example by tapping on a alarm hand a selection menu which offers a selection of parameters concerning for an activation of this alarm hand.

[0098] The example described according to figures 3a, 3b and 3c shows a selection of the user, wherein he has defined a first alarm time 331 which should be activate if the weather is good (sunny).

[0099] In bad weather condition (see reference number 334), the user has chosen an activation of the second alarm time (9:30 am) - reference number 332.

[0100] Figure 3b and figure 3c explain the utilization of this effect.

[0101] Fig. 3b. shows the action which is performed by the clock, if the clock obtains the information, that at 7 o'clock the weather is sunny.

[0102] In this case the clock rings at 7 am.

[0103] Figure 3c illustrates the case, that the weather has not been good at 7 o'clock and has not been changed up to 9:30 am.

[0104] In this case the second alarm time: 9:30 am for bad weather condition is activated.

[0105] Figure 4 shows a high level architecture of a system which is capable to implement the present invention. The system comprises the clock 100 and a server 400. The clock 100 includes a clock face element manager 401 and a local storage 402. In the local storage 402 a plurality of different kinds of clock face elements are stored. The size of the local storage 402 is dimensioned to allow storing a plurality of clock face elements to make them easily and quickly accessible by simply selecting one of them through a menu. The clock face element manager 401 enables the user to select one of the clock face elements which are available on the local storage 402 such that the operating system of the clock 100 presents the selected clock face element to the user. The clock face element manager offers the user the possibility to replace the clock face element which is installed on his mobile phone with another one displaying different data and having a different flow of graphical elements, as for example information boxes 120, 121, 122, icons as 110, 133, 134, 233, 240, 241, 242, 243 menus i.e. the user may change the sequence of screens and how to navigate from one screen to another one. This is a considerable advantage over the prior art because designing and building a clock clock face elementis at present very difficult and complex such that it is reserved to specialized designers and engineers.

[0106] In an embodiment of the present invention each of the clock face elements stored in the local storage displays a clock face enabling a user to manually switch to another clock face element.

[0107] In another example the user can manually switch to another clock face elementusing a hardware switch or button provided on the clock.

[0108] The local storage 402 is a memory device inside the telephone, a memory included in the subscriber identity module of the clock or an additional memory card that can be inserted into the clock. In spite of the new flexibility that the invention offers there may still be a situation that the plurality of clock face element stored in the local storage 402 does still not meet all needs of a specific user. Therefore, the clock face element manager 401 also enables the user to browse a remote storage for new clock face elements to download and install on the clock 100.

[0109] The clock 100 includes a clock face element renderer for rendering the selected clock face element. The clock face element renderer 403 links data to display with native or remote data sources and links the user interactions with native or remote action such as a telephone call, send SMS messages, post message to a blog etc. The clock face element renderer 403 associates functionalities of the clock 100 or of remote services with icons 403 represented on the display 102. In this way the clock face element renderer 403 creates a large versatility of the clock 100.

[0110] The clock 100 includes a telephone operating system 404 which is controlled by the user through the clock face element currently selected by the clock face element manager 401. The telephone operating system 404 comprises all hard-and software to enable native telephone functionalities e.g. setting up and receiving telephone calls and email, SMS (short message service) and MMS (multimedia message service) communication to name only a few.

[0111] An embodiment of the clock 100 according to the present invention is provided with a dynamic clock face element renderer 405.

[0112] In an embodiment of the invention the dynamic clock face element renderer 405 provides for an automatic change of the clock face element as function of the day time, day of the week and whether the user is on vacation besides the manual selection of the user. During the day time of normal working days the clock presents a "business" clock face element putting functionalities to the foreground which are predominantly used during the working time of the user. After the normal working hours the clock switches to a "leisure" clock face element in which other functionalities are in the foreground which are mainly used by the user in his leisure time. Similar changes occur between normal working days on the one hand and weekends and vacation on the other hand. The changes are controlled by the mobile phone 100 and do not require any user interaction to occur.

[0113] In another embodiment the clock face element is replaced upon a user input and at the same time the clock face element is changed automatically as a function of daytime and calendar day.

[0114] The dynamic clock face element renderer 405 monitors the user behavior over a relatively long period of time and stores it. The ascertained result relating to the user behavior is used to offer to the user as preferences in the displayed clock face such clock face items the user has predominately chosen in the past according to the user behavior ascertained. The dynamic clock face element renderer 405 shows upon request an adapted clock face and waits for the confirmation of the adapted clock face by the user. If the user does so the clock face element renderer stores the adapted clock face in the local storage 402.

[0115] In order to access an even enhanced choice of clock face elements the user can connect to a website 406 on the remote server 400. A data communication link 407 between the clock 100 and the server 400 is established wirelessly via conventional data communication services offered by service providers. The website 406 enables the user to remotely configure the clock face element of his clock by browsing a gallery 408. The data files associated with each one of the clock face elements presented in the clock face element gallery 408 are stored in the local storage 409 of the server 400. Upon the selection of a specific clock face element the clock face element manager 401 of the clock 100 interfaces with a download manager 410. The download manager 410 is an application running on the server. The download manager 410 accesses the data file associated with the selected clock face element and transfers it via the data communication link 407 to the clock face element manager 401. As soon as the data file associated with the selected clock face element has been downloaded completely, it is stored in the local storage 402 of the clock 100. The server 400 and the clock 100 cooperate to form a system enabling a user to replace the clock face element of the clock 100.

[0116] The invention permits to have different types of clock face elements at hand e.g. a simplified clock face element when the clock is borrowed to a child or to another person who is not skilled in operating modern communication devices.

[0117] While the invention has been illustrated and described in detail in the drawings and foregoing description, such illustration and description are to be considered illustrative or exemplary and not restrictive; the invention is not limited to the disclosed embodiments. Particularly, the invention is not limited to a download of an application or program code to the local storage 402. A person skilled in the art recognises that other data can be downloaded to the local storage 402 in the same way as it has been described before in connection with the download of a program code of an application. Other variations to the disclosed embodiments can be understood and effected by those skilled in the art in practicing the claimed invention, from a study of the drawings, the disclosure, and the appended claims. The scope of the invention is limited only by the appended claims.

[0118] In the claims, the word "comprising" does not exclude other elements or steps, and the indefinite article "a" or "an" does not exclude a plurality. A single processor or other unit may fulfill the functions of several items recited in the claims. A computer program may be stored/distributed on a suitable medium, such as an optical storage medium or a soild-state medium supplied together with or as part of other hardware, but may also be distributed in other forms, such as via the Internet or other wired or wireless telecommunication systems. Any reference signs in the claims should not be construed as limiting the scope.

List of reference numerals

[0119]

100	clock
101	key pad
102	display
103	icon
110	indicator for an existence of one or more fixed alarm times
111	alarm time
112	alarm time
115	minute hand
118	hour hand
120	widget
121	widget
122	widget
123	widget
125	symbol for weather forecast
130	indicator for an existence of one or more flexible alarm times
131	first boundary of flexible alarm time interval
132	second boundary of flexible alarm time interval
133	a graphical symbol for illustrating an occurrence of a first weather condition (sunny weather)
134	a graphical symbol for illustrating an occurrence of a second weather condition (rainy weather)
210	central point of the clock face
215	minute hand
218	hour hand
219 221	time interval
222	time interval
233	time interval
240	graphical symbol (time)
241	graphical symbol (time)
242	graphical symbol (time)
243	graphical symbol (time)
244	graphical symbol (time)
250	graphical symbol (segment)
251	graphical symbol (segment)
252	graphical symbol (segment)
253	graphical symbol (segment)
254	graphical symbol (segment)

255 graphical symbol (segment)
256 graphical symbol (segment)
257 graphical symbol (segment)
300 clock
315 minute hand
318 hour hand
331 first alarm hand
332 second alarm hand
333 symbol for good weather condition
334 symbol for bad weather condition
360 400 server
401 clock face element manager
402 local storage
403 clock face element renderer
404 clock operating system
405 dynamic clock face element renderer
406 web site
407 data communication link
408 clock face element gallery
409 local storage
410 download manager

Claims

1. Clock comprising:an operating system (404) for the clock (100); a radio interface for connecting to a wireless network; a display on which a clock face element is displayed to enable a user to operate the clock according to the operating system; and a local storage (402) where the data files associated with the clock face element are stored, wherein the local storage (402) permits the storage of a plurality of clock face elements; and means for managing the clock face element such that the user can select one out of the plurality of stored clock face elements,
wherein the clock further comprises dynamic means (405) for rendering the clock face element adapted to provide an automatic switch between clock face elements out of the plurality of the stored clock face elements as function of time and of context of daily life ascertained for the user at said time, **characterized in that**
the dynamic means (405) for automatic rendering of the clock face element are arranged to monitor and store the user behavior, such that the clock face element offered to the user is based on clock face items predominately chosen in the past according to the user behavior ascertained.

2. Clock according to claim 1, wherein the operating system of the clock (100) interacts with the clock face element such that the user controls the clock (100) through the selected clock face element.

3. Clock according to claim 1 or 2, wherein the clock (100) further includes a clock face element manager enabling the user to select one of the clock face elements available on the local storage (402).

4. Clock according to any of the preceding claims, **characterized in, that** the clock face element contains information which has been transferred via a data communication link (407).

5. Clock according to claim 1 or 2, wherein the clock comprises a touch screen.

6. Clock according to any of the preceding claims, wherein the dynamic means (405) for rendering the clock face element perform an automatic rendering of the clock face element as a function of day time.

7. Clock according to any of the preceding claims, wherein the dynamic means (405) for rendering the clock face element perform an automatic rendering of the clock face element as a function of the calendar day.

8. Clock according to claim 1, wherein the automatic rendering of the clock face element by the dynamic means (405) for rendering is based on the monitored user behavior.

9. Clock according to claim 1 or 2, wherein a manager means (401) is provided enabling the user to download a clock face element from a remote device (400).

10. Clock according to claim 9, wherein the manager means (401) controls the storage of the downloaded clock face element in the local storage (402).

11. Clock according to one of the preceding claims, wherein weather information for a time is displayed in the clock face in a segment corresponding to the time.

12. Clock according to claim 11, wherein the weather information include forecast information and comprise a graphical symbol of expected weather.

13. System comprising a clock (100) according to one or several of the preceding claims and a server (400) providing a website (406) on which a selection of clock face elements are displayed, wherein a user can select a specific clock face element for download out of a plurality of clock face elements, wherein the server (400) comprises a download manager (410) which executes the download of the data files associated with a selected clock face element to a receiving device, wherein the website provides a gallery (408) of clock face elements from which a specific clock face element is selectable by a user.

Patentansprüche

1. Uhr, umfassend: ein Betriebssystem (404) für die Uhr (100); eine Funkschnittstelle zum Verbinden mit einem drahtlosen Netz; eine Anzeige, auf der ein Ziffernblattelement angezeigt wird, um zu ermöglichen, dass ein Nutzer die Uhr in Übereinstimmung mit dem Betriebssystem bedient; und einen lokalen Speicher (402), in dem die dem Ziffernblattelement zugeordneten Datendateien gespeichert sind, wobei der lokale Speicher (402) die Speicherung mehrerer Ziffernblattelemente zulässt; und Mittel zum Managen des Ziffernblattelements in der Weise, dass der Nutzer eines der mehreren gespeicherten Ziffernblattelemente auswählen kann,
wobei die Uhr ferner dynamische Mittel (405) zum Rendern des Ziffernblattelements umfasst, die dafür ausgelegt sind, einen automatischen Schalter zwischen Ziffernblattelementen der mehreren der gespeicherten Ziffernblattelemente in Abhängigkeit von der Zeit und von dem für den Nutzer zu dieser Zeit festgestellten Alltagskontext bereitzustellen,
dadurch gekennzeichnet, dass
die dynamischen Mittel (405) zum automatischen Rendern des Ziffernblattelements so ausgelegt sind, dass sie das Nutzerverhalten überwachen und speichern, sodass das dem Nutzer angebotene Ziffernblattelement auf Ziffernblattobjekten beruht, die in der Vergangenheit in Übereinstimmung mit dem festgestellten Nutzerverhalten vorrangig gewählt worden sind.

2. Uhr nach Anspruch 1, wobei das Betriebssystem der Uhr (100) mit dem Ziffernblattelement in der Weise in Wechselwirkung tritt, dass der Nutzer die Uhr (100) über das ausgewählte Ziffernblattelement bedient.

3. Uhr nach Anspruch 1 oder 2, wobei die Uhr (100) ferner einen Ziffernblattelementmanager enthält, der ermöglicht, dass der Nutzer eines der in dem lokalen Speicher (402) verfügbaren Ziffernblattelemente auswählt.

4. Uhr nach einem der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** das Ziffernblattelement Informationen enthält, die über eine Datenkommunikationsverbindung (407) übertragen worden sind.

5. Uhr nach Anspruch 1 oder 2, wobei die Uhr einen berührungsempfindlichen Bildschirm umfasst.

6. Uhr nach einem der vorhergehenden Ansprüche, wobei die dynamischen Mittel (405) zum Rendern des Ziffernblattelements ein automatisches Rendern des Ziffernblattelements in Abhängigkeit von der Tageszeit ausführen.

7. Uhr nach einem der vorhergehenden Ansprüche, wobei die dynamischen Mittel (405) zum Rendern des Ziffernblattelements ein automatisches Rendern des Ziffernblattelements in Abhängigkeit von dem Kalendertag ausführen.

8. Uhr nach Anspruch 1, wobei das automatische Rendern des Ziffernblattelements durch die dynamischen Mittel (405) zum Rendern auf dem überwachten Nutzerverhalten beruht.

9. Uhr nach Anspruch 1 oder 2, wobei ein Managermittel (401) vorgesehen ist, das ermöglicht, dass der Nutzer ein Ziffernblattelement von einer fernen Vorrichtung (400) herunterlädt.

10. Uhr nach Anspruch 9, wobei das Managermittel (401) die Speicherung des heruntergeladenen Ziffernblattelements in dem lokalen Speicher (402) steuert.

11. Uhr nach einem der vorhergehenden Ansprüche, wobei Wetterinformationen für eine Zeit in dem in einem Segment des Ziffernblatt angezeigt werden, das der Zeit zugeordnet ist.

12. Uhr nach Anspruch 11, wobei die Wetterinformationen Vorhersageinformationen enthalten und ein graphisches Symbol des erwarteten Wetters umfassen.

13. System, das eine Uhr (100) nach einem oder mehreren der vorhergehenden Ansprüche und einen Server (400), der eine Website (406) bereitstellt, auf der eine Auswahl von Ziffernblattelementen angezeigt werden, umfasst, wobei ein Nutzer aus mehreren Ziffernblattelementen ein spezifisches Ziffernblattelement zum Herunterladen auswählen kann, wobei der Server (400) einen Download-Manager (410) umfasst, der das Herunterladen der einem ausgewählten Ziffernblattelement auf eine empfangende Vorrichtung zugeordneten Datendateien ausführt, wobei die Website eine Galerie (408) von Ziffernblattelementen bereitstellt, von denen durch einen Nutzer ein spezifisches Ziffernblattelement ausgewählt werden kann.

Revendications

1. Horloge comprenant : un système d'exploitation (404) pour l'horloge (100) ; une interface radio pour se connecter à un réseau sans fil ; un affichage sur lequel un élément de face d'horloge est affiché pour permettre à un utilisateur de faire fonctionner l'horloge en fonction du système d'exploitation ; et un stockage local (402) où les fichiers de données associés à l'élément de face d'horloge sont stockés, dans laquelle le stockage local (402) permet le stoc-

kage d'une pluralité d'éléments de face d'horloge ; et des moyens de gérer l'élément de face d'horloge de sorte que l'utilisateur peut sélectionner un élément parmi la pluralité d'éléments de face d'horloge stockés,
dans laquelle l'horloge comprend en outre des moyens dynamiques (405) de rendre l'élément de face d'horloge adapté à fournir une commutation automatique entre des éléments de face d'horloge parmi la pluralité d'éléments de face d'horloge stockés en fonction de l'heure et du contexte de la vie quotidienne établi pour l'utilisateur à ladite heure,
caractérisée en ce que
les moyens dynamiques (405) de rendu automatique de l'élément de face d'horloge sont adaptés pour surveiller et stocker le comportement de l'utilisateur de sorte que l'élément de face d'horloge offert à l'utilisateur se base sur des objets de face d'horloge choisis principalement dans le passé en fonction du comportement établi de l'utilisateur.

2. Horloge selon la revendication 1, dans laquelle le système d'exploitation de l'horloge (100) interagit avec l'élément de face d'horloge de sorte que l'utilisateur commande l'horloge (100) par l'élément de face d'horloge sélectionné.

3. Horloge selon la revendication 1 ou 2, dans laquelle l'horloge (100) inclut en outre un gestionnaire d'éléments de face d'horloge permettant à l'utilisateur de sélectionner un des éléments de face d'horloge disponibles sur le stockage local (402).

4. Horloge selon l'une quelconque des revendications précédentes, **caractérisée en ce que** l'élément de face d'horloge contient des informations qui ont été transférées par le biais d'une liaison de communication de données (407).

5. Horloge selon la revendication 1 ou 2, dans laquelle l'horloge comprend un écran tactile.

6. Horloge selon l'une quelconque des revendications précédentes, dans laquelle les moyens dynamiques (405) de rendu de l'élément de face d'horloge réalisent un rendu automatique de l'élément de face d'horloge en fonction de la journée.

7. Horloge selon l'une quelconque des revendications précédentes, dans laquelle les moyens dynamiques (405) de rendu de l'élément de face d'horloge réalisent un rendu automatique de l'élément de face d'horloge en fonction du jour calendaire.

8. Horloge selon la revendication 1, dans laquelle le rendu automatique de l'élément de face d'horloge par les moyens dynamiques (405) de rendu se base sur le comportement surveillé de l'utilisateur.

9. Horloge selon la revendication 1 ou 2, dans laquelle un moyen de gérer (401) est prévu pour permettre à l'utilisateur de télécharger un élément de face d'horloge depuis un dispositif à distance (400).

10. Horloge selon la revendication 9, dans laquelle les moyens de gérer (401) commandent le stockage de l'élément de face d'horloge téléchargé dans le stockage local (402).

11. Horloge selon une des revendications précédentes, dans laquelle des informations météorologiques pour une heure sont affichées dans la face d'horloge dans un segment correspondant à l'heure.

12. Horloge selon la revendication 11, dans laquelle les informations météorologiques incluent des informations de prévision et comprennent un symbole graphique du temps attendu.

13. Système comprenant une horloge (100) selon une ou plusieurs des revendications précédentes et un serveur (400) fournissant un site Web (406) sur lequel une sélection d'éléments de face d'horloge est affichée, dans lequel un utilisateur peut sélectionner un élément de face d'horloge spécifique à télécharger parmi une pluralité d'éléments de face d'horloge, dans lequel le serveur (400) comprend un gestionnaire de téléchargement (410) qui exécute le téléchargement des fichiers de données associés à un élément de face d'horloge sélectionné vers un dispositif de réception, dans lequel le site Web fournit une galerie (408) d'éléments de face d'horloge depuis laquelle un élément de face d'horloge spécifique peut être sélectionné par un utilisateur.

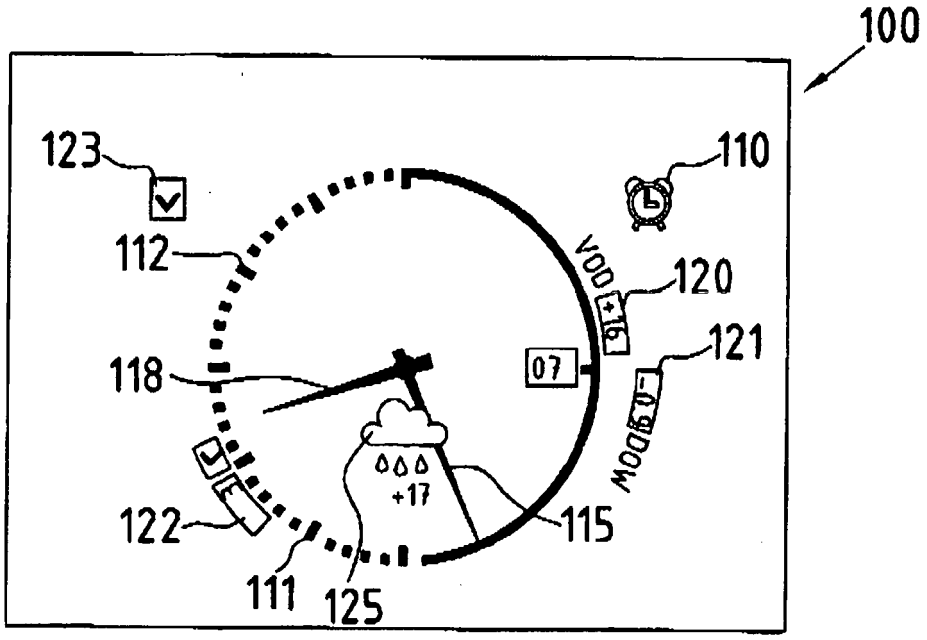

100
123
110
112
120
121
118
07
+17
115
122
111
125

Fig.1a

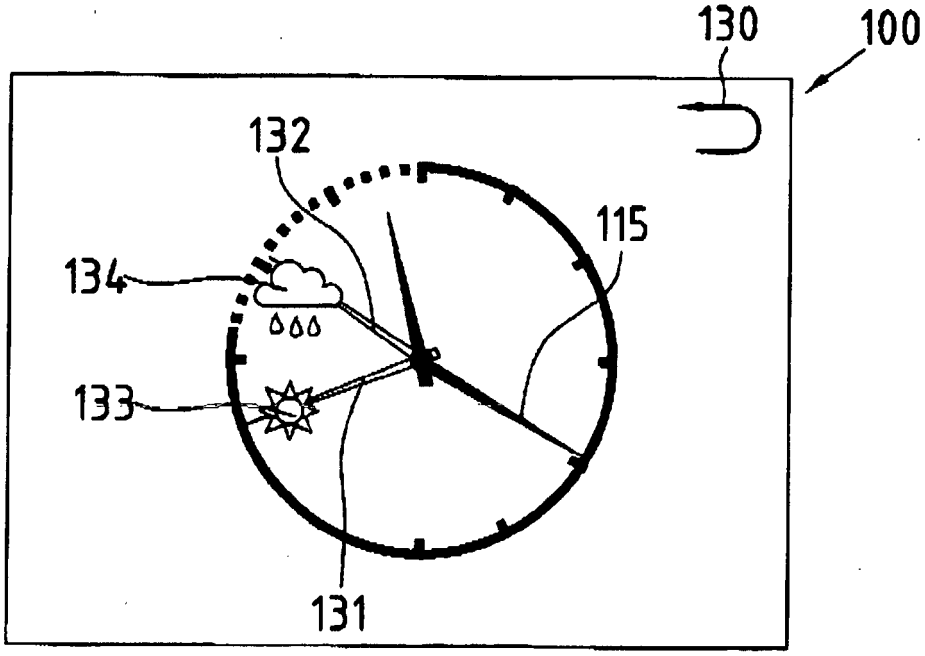

130
100
132
115
134
133
131

Fig.1b

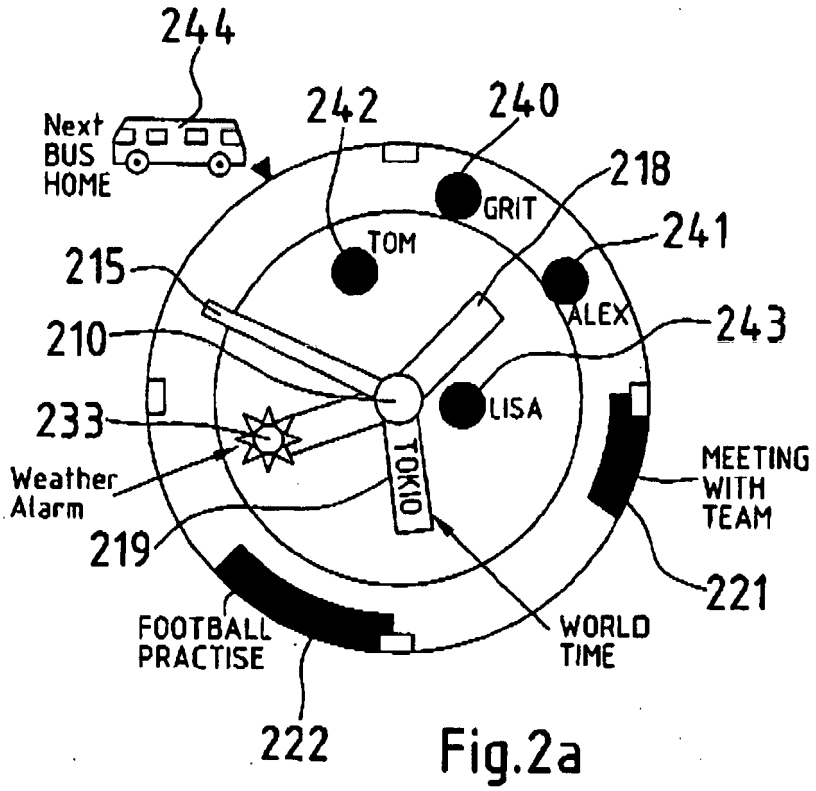

244
Next
BUS
HOME
242
240
218
GRIT
241
TOM
215
ALEX
243
210
LISA
233
TOKIO
MEETING
WITH
TEAM
Weather
Alarm
219
221
FOOTBALL
PRACTISE
WORLD
TIME
222

Fig.2a

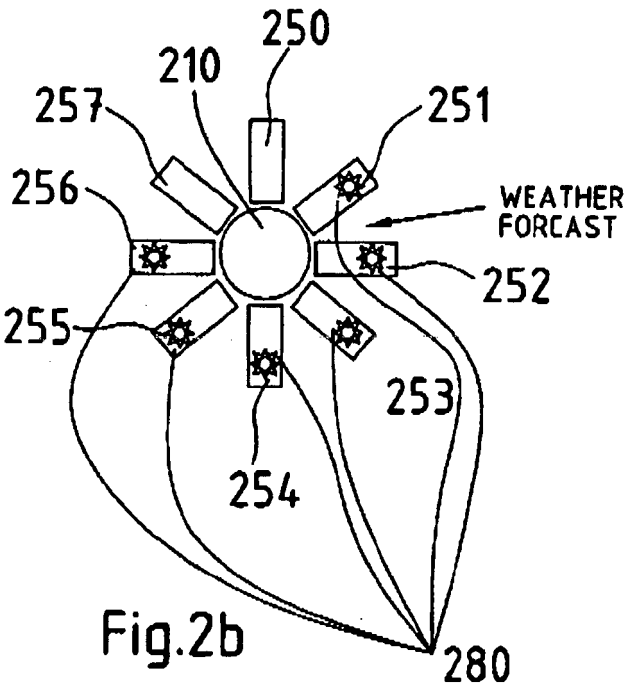

250
210
257
251
256
WEATHER
FORCAST
252
255
253
254
280

Fig.2b

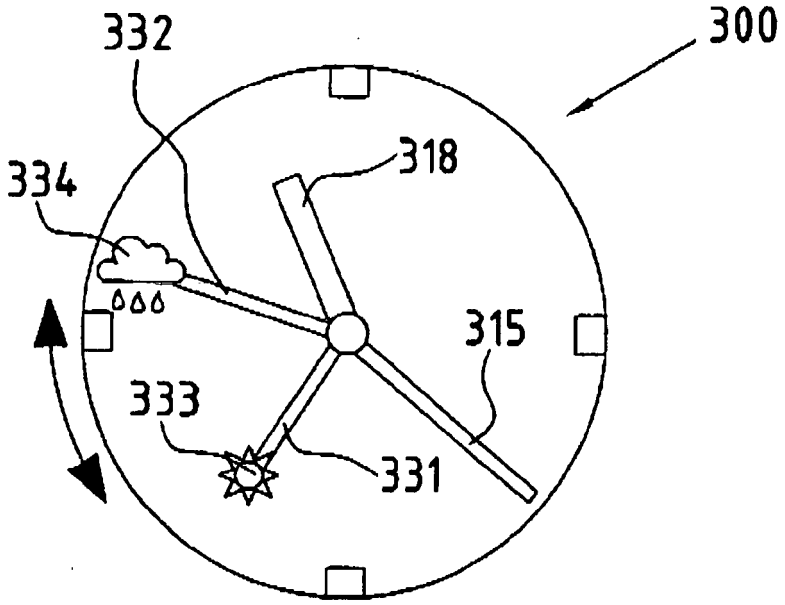


Fig.3a

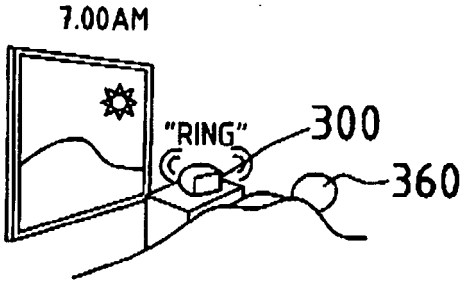


Fig.3b

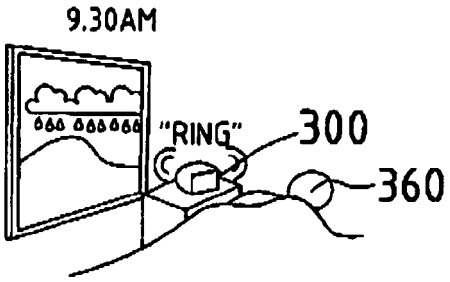


Fig.3c

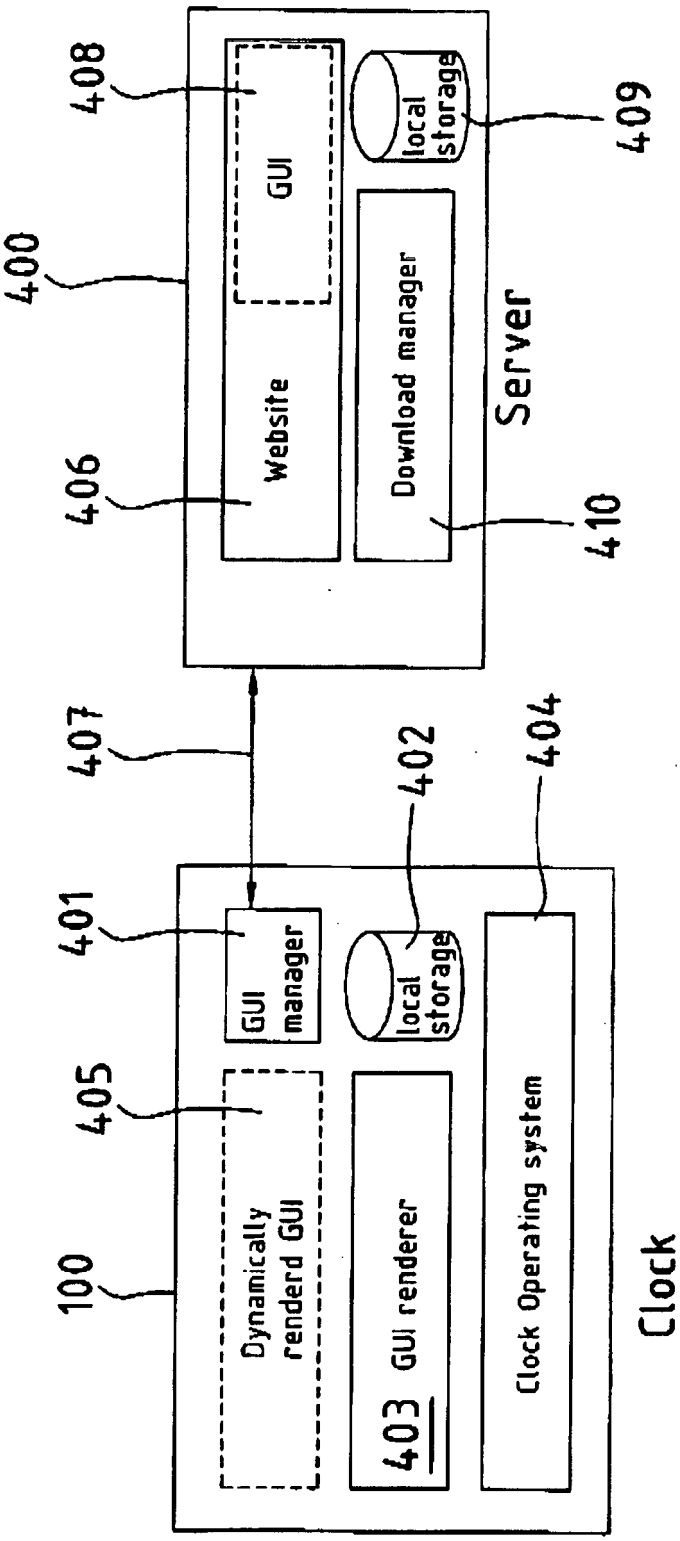

408
GUI
local storage
409
400
Server
Website
Download manager
406
410
407
402
404
401
GUI manager
local storage
405
Dynamically renderd GUI
403 GUI renderer
Clock Operating system
100
Clock

Fig.4

REFERENCES CITED IN THE DESCRIPTION

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