CLAIMS

1. An instantaneous messaging system (2) characterized in that it comprises at least one sender device (4) and at least one receiver device (6) configured to send and/or receive text messages (60) by means of at least one central unit (8) with which both devices communicate, and in that:

- said at least one central unit (8) comprises a database (12), in which a user dataset (14), which contains at least one univocal identification code (ID) for each user of the messaging system (2), is in relationship (18) with at least one element dataset (16), which contains at least the univocal identification codes (30) of all graphic and/or audio elements manageable by the messaging system (2), to thereby define the graphic and/or audio elements which can be accessed/managed by each user of the user dataset (14), wherein each graphic and/or audio element manageable in the messaging system (2) is associated with said univocal identification code (30) in said messaging system (2),

- a first software module is loaded and run in said sender device (4) and receiver device (6),

- said first software module loaded and run in said sender device (4) is configured to send a data structure (20) to the central unit (8) generated on the basis of a message to be sent (60) which has at least one graphic and/or audio element (31, 33, 35, 37), said data structure (20) comprises a first field (26), which contains the corresponding univocal identification code (23, 30, 32, 34) of said at least one graphic and/or audio element of the message (60),

- a second software module is loaded and run in said at least one central unit (8), which module, on the basis of the received data structure (20), creates a structured data package (40) comprising a second field (48) which is filled in at least in part with the first field (26) of said data structure (20),

- said first software module is configured so that, when said first software module is run in said sender device (4) by a given user of the user dataset (14) only the graphic elements (31) which have the respective identification codes (30) in relationship (18) with the univocal identification code ID of said user in said database (12) can be inserted in said message to be sent (60),

- said first software module, loaded and run in said receiver device (6), is also configured to perform the following operations:

- obtaining the structured data package (40) from said central unit (8), and detecting, inside said second field (48) of said structured data package (40), the univocal identification code (23, 30, 32, 34) of said at least one graphic and/or audio element (31, 33, 35, 37),

- if the graphic and/or audio element associated with said univocal code (23, 30, 32, 34) which was identified in said second field (48) of said structured data package (40) is not already present in the local memory of the device in which said first software module is running, requesting such graphic and/or audio element (31, 33, 35, 37) associated with the identified univocal code (23, 30, 32, 34) from the central unit (8) and downloading it locally to said device,

- on the basis of the contents of the structured data package (40) and of the graphic and/or audio element associated with said univocal code thus identified (23, 30, 32, 34), showing the sent message (60) also implementing said graphic and/or audio element (31, 33, 35, 37) on the display of the device (6) in which the first software module is running.

- the first software module, that is loaded and run in said sender device (4), is configured to send an enabling/authorization request to the central unit (8), preferably after paying a fee, to use a certain graphic and/or audio element (31), and after accepting the request, the second software module is configured to define a relationship (18) between the univocal identification code of the user who sent said request to the central unit (8) and the univocal identification code (30) of the graphic and/or audio element (31) for which the request was made.

2. A messaging system according to claim 1, characterized in that the element dataset (16) also contains the data which define the corresponding graphic and/or audio elements (31).

3. A messaging system according to one or more of the preceding claims, characterized in that the element dataset (16) also contains the data of an

address/location of a further database (47) in which the data which define the corresponding graphic and/or audio elements (31) are stored.

4. A messaging system according to one or more of the preceding claims, characterized in that the database (12) is configured and structured so that the user dataset (14) and the element dataset (16) are mutually associated by means of a relationship (18) which substantially constitutes another dataset and which contains the list of the elements of the dataset (16) which are available/usable/manageable by each user of the dataset (14).

5. A messaging system according to one or more of the preceding claims, characterized in that the database (12) is configured and structured so that the user dataset (14) and the element dataset (16) are mutually associated by means of a relationship (18) which defines another dataset and which associates the univocal identification code (30) of each graphic and/or audio element (31), as provided in the element dataset (16), with the univocal identification code (ID) of each user, as provided in the user dataset (14).

6. A messaging system according to one or more of the preceding claims, characterized in that the database (12) is configured and structured so that the user dataset (14) and the element dataset (16) are mutually associated by means of two types of relationships (18):

- a first type of relationship, which associates the elements of the dataset (16) which were created by said user and/or which were uploaded by said user in the messaging system (2) with each user,

- a second type of relationship, which contains the elements of the dataset (16) for which such user was authorized/enabled for each user.

7. A messaging system according to one or more of the preceding claims, characterized in that the sender device (4) and/or receiver device (6) is a portable device,

preferably a smartphone or tablet, and in that said first software module is a mobile software application (APP).

8. A messaging system according to one or more of the preceding claims, characterized in that the first software module is also configured to upload a graphic and/or audio element generated by a user to the database (12) of the central unit (8) in order to make it available also for other users of the messaging system (2).

9. A messaging system according to one or more of the preceding claims, characterized in that:

- said first software module is also configured to send a graphic and/or audio element which is not yet present in said database (12) to the central unit (8) in order to register it in said system (2),

- the second software module loaded and run in the central unit (8) is configured to store the graphic and/or audio element in the database (12) thus received by assigning a corresponding univocal identification code (30) to it.

10. A messaging system according to one or more of the preceding claims, characterized in that it is configured so that:

- the first software module sends a graphic and/or audio element (31) to the central unit (8), and

- the central unit stores it in the database (12) associating a univocal identification code (30) with it,

- the second software module defines a new relationship (18) between the univocal identification code of the user who sent said graphic and/or audio element to the central unit (8) and the univocal identification code (30) of the graphic and/or audio element (31) thus sent.

11. A messaging system according to one or more of the preceding claims, characterized in that the first software module is configured so that a data entry keyboard is shown on the display of the sender device (4) of a given user containing

only the graphic and/or audio elements (31) which have the respective identification codes (30) in the relationship (18) with the univocal identification code ID of said user in said database (12).

12. A messaging system according to one or more of the preceding claims, characterized in that the first software module is also configured to send text messages (60) making a request, preferably by means of the POST method, to the central unit (8) on the basis of a communication protocol, preferably HTTPS.

13. A messaging system according to one or more of the preceding claims, characterized in that the data structure (20) contains an identification code field of the sender user.

14. A messaging system according to one or more of the preceding claims, characterized in that the first software module loaded in the sender device (4) and the second software module loaded into the central unit (8) are also configured to implement an authentication check and procedure of the sender user who is using the messaging system (2).

15. A messaging system according to one or more of the preceding claims, characterized in that the first and the second software module are configured to perform the following operations:

- the first software module of the sender device (4) sends the login data that the users enter, by acting on their sender device (4), when they log into the messaging system (2) to the second software module of the central unit (8),

- the second software module of the central unit (8) checks the received login data, extracts the univocal identification code (ID) of the corresponding user from the user dataset (14) and generates a corresponding computer object containing the univocal identification code (ID) of such user,

- the second software module of the central unit (8) encrypts the computer object (X) thus created with a private key, thus generating the encrypted computer object (Y),

- the second software module of the central unit (8) sends the encrypted computer object (Y) to the first software module of the sender device (4), which stores it locally,

and in that, when a user sends a text message (60) by means of the sender device (4), the first and the second software module are configured to perform the following actions:

- the first software module sends both the data structure (20) and the previously received and locally stored encrypted computer object (Y) to the central unit (8),

- the second software module of the central unit (8), before processing the data structure (20), decrypts the encrypted computer object (Y) and so extracts the computer object (X) containing the user ID,

- the second software module of the central unit (8) processes the data structure (20) also availing of the user's identification code ID.

16. A messaging system according to one or more of the preceding claims, characterized in that the second software module loaded and running in the central unit (8) is configured to:

- extract the univocal identification code (30) of a graphic and/or audio element (31) contained in said data structure (20) from the data structure (20), which was sent to said unit (8) by the sender device (4),

- check whether the univocal identification code of the user (ID) who has sent the data structure (20) is associated with the previously extracted univocal identification code (30) of the graphic and/or audio element (31) in the database (12),

- if the check result is positive, continue by generating said structured data package (40) on the basis of the received structure data (20),

- if the check result is negative, interrupt/block the processing of the data structure (20) sent by the sender device (4).

17. A messaging system according to one or more of the preceding claims, characterized in that the first software module loaded and running in the receiver device (6) is configured to download said structured data package (40) prepared by said unit

and addressed to said device from the central unit (8), preferably by means of a REST architecture.

18. A messaging system according to one or more of the preceding claims, characterized in that the first software module loaded and run in the receiver device (6) is configured to periodically access the central unit (8), at a predetermined frequency, to query it whether one or more structured data packages (40) addressed for it are present/available, and in the positive case, download such structured data package (40) from the central unit (8).

19. A messaging system according to one or more of the preceding claims, characterized in that it comprises a notifying platform (50), which acts as a mediator between the devices (4, 6) and the central unit (8) and which is configured to alert said devices, asynchronously, when new data are available for them in the central unit (8).

20. A messaging system according to one or more of the preceding claims, characterized in that the second software module is also configured so that, after having processed and prepared the structured data package (40) on the basis of the data structure (20) sent by the sender device (4), it sends an alert (52) on notifying platform (50), which is then configured to forward such alert to the corresponding receiver device (6).

21. A messaging system according to one or more of the preceding claims, characterized in that the first software module loaded in the sender device (4) and/or receiver device (6) is configured to have a first active state, in which a bidirectional connection with the central unit (8) is established and maintained, and a second resting state, in which the sender device (4) and/or the receiver device (6) are not connected to the central unit (8), said first software module also being further configured so that, when it is in said first active state, the receiver device (6) queries the central unit (8) only when it receives an alert (52) stating that there is a data package structured (40) addressed to it.

22. A messaging system according to one or more of the preceding claims, characterized in that the sender device (4) and/or the receiver device (6) comprises:

- a first local memory (90), in which to download and store the identification codes (30') of all graphic and/or audio elements (31') which are associated with the univocal identification code (ID) of the given user who has logged into the messaging system (2) using said sender device (4) and/or said receiver device (6) in said database (12) of the central unit (8),

- a second local memory (91), in which to download and store all the graphic and/or audio elements (31') corresponding to the univocal identification codes (30') downloaded and stored in the first memory (90).

23. A messaging system according to one or more of the preceding claims, characterized in that said first local memory (90) comprises a mass memory or primary memory or RAM memory.

24. A messaging system according to one or more of the preceding claims, characterized in that said second local memory (91) comprises a mass memory or primary memory or RAM memory.

25. A messaging system according to one or more of the preceding claims, characterized in that said second local memory (91) is of type cache.

26. A messaging system according to one or more of the preceding claims, characterized in that the first software module loaded and running in the sender device (4) and/or the receiver device (6) and the second software module loaded onto the central unit (8) are also configured so that:

- login data entered by the user, by interacting with its sender device (4), when logging into the messaging system (2) is sent to the second software module of the central unit (8),

- in the central unit (8), the received login data are verified, the univocal identification code (ID) is extracted from the user dataset (14) and the univocal identification codes (30) of all graphic and/or audio elements (31) which are associated with the univocal identification code (ID) of such user are identified using the code thus extracted,

- the univocal identification codes (30) of all graphic and/or audio elements (31) thus identified are downloaded to the first local memory (90) of the device (4) and/or (6),

- the graphic and/or audio elements (31) thus identified are downloaded to the second local memory (91) of the device (4) and/or (6).

27. A messaging system according to one or more of the preceding claims, characterized in that the first software module of the sender device (4) and/or the receiver device (6) is configured so as to show a data entry keyboard on the display of the device itself, in order to create a message to be sent, which has access, and such shows on said display, only the graphic and/or audio elements (31) the univocal identification codes (30) of which are stored in the first memory of the device itself.

28. A messaging system according to one or more of the preceding claims, characterized in that the first software module of the sender device (4) is also configured to perform such operations:

- retrieving a list of the univocal identification codes (30') present in the first local memory (90) of the sender device (4),

- using such codes (30'), retrieving the corresponding graphic and/or audio elements (31') univocally identified by said codes (30') from the second local memory (91) of the sender device (4),

- showing only the graphic and/or audio elements (31') thus retrieved on the data entry keyboard of the sender device (4).

29. A messaging system according to one or more of the preceding claims, characterized in that said first software module loaded and running in the receiver device (6) is configured to:

- verify whether said univocal code (23, 30, 32, 34), which was identified n said second field (48) of said downloaded structured data package (40), is not already present in the first local memory (90) of the device in which said first software module is running,

- if the result of the check is negative, request such graphic and/or audio element (31, 33, 35, 37) associated with the identified univocal code (23, 30, 32, 34) from the central unit (8) and download said graphic and/or audio element (31, 33, 35, 37) to the second local memory (91) of said device.

30. A messaging system according to one or more of the preceding claims, characterized in that the following are stored/kept in the second local memory (91) of said sender device (4) and/or receiver device (6):

- a first set of graphic and/or audio elements (31') the corresponding univocal codes (30') of which are stored/present in the first local memory (90);

- a second set of graphic and/or audio elements (31') the corresponding univocal codes (30') of which are not stored/present in the first local memory (90) instead.

31. A messaging system according to one or more of the preceding claims, characterized in that the first software module of the sender device (4) is also configured so as to show a data entry keyboard on the display on the display of the device itself, in order to create a message to be sent, which has access, and such shows on said display, only said first set of graphic and/or audio elements (31') present in the second local memory (91) of the device.

32. A messaging system according to one or more of the preceding claims, characterized in that said first field (26) is a text field which contains, along with the possible text (39) of the message, also the corresponding univocal identification code (23, 30, 32, 34) of said at least one graphic and/or audio element of the message (60).

33. A messaging system according to one or more of the preceding claims, characterized in that said graphic element (31) is an image (33) to be shown, together with possible text (39) of message (60), in the balloon of the message itself.

34. A messaging system according to one or more of the preceding claims, characterized in that wherein said graphic element (31) is:

- an image to be used as avatar of the user (35) for a given message (60) and/or in the messaging system itself, and/or
- a balloon (37) in which the text (39) of message (60) and/or a graphic and/or audio element (33) is shown.

35. A messaging system according to one or more of the preceding claims, characterized in that:

- said data structure (20) comprises at least one dedicated field (32, 34) which is filled in with the univocal identification code (30) of at least one graphic and/or audio element (35, 37) provided in the message to be sent (60),
- said second field (48) of said structured data package (40) also contains the univocal identification code (30) which was fill into said dedicated field (32, 34).

36. A messaging system according to one or more of the preceding claims, characterized in that said field (48) of said structured data package (40) contains both the value and the identification label of said first field (26) and/or said dedicated field (32, 34).

37. A method for sending graphic and/or audio elements in a message (60) by using a messaging system (2) according to one or more of the preceding claims.