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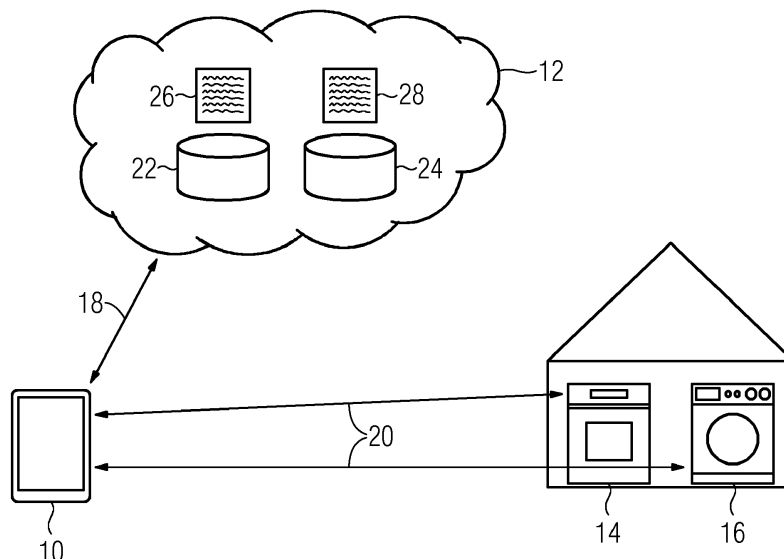
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(54) **REMOTE CONTROL SYSTEM FOR CONTROLLING A DOMESTIC APPLIANCE**

(57) The present invention relates to a remote control system for controlling at least one domestic appliance (14, 16). The remote control system comprises at least one remote control device (10), at least one data cloud (12) and at least one domestic appliance (14, 16). The remote control device (10) is connectable or connected to the data cloud (12) via a first wireless connection (18). The remote control device (10) is connectable or connected to the domestic appliance (14, 16) via a second wireless connection (20). The remote control device (10)

includes at least one application software for communicating with the data cloud (12) and the domestic appliance (14, 16). The data cloud (12) comprises a plurality of apparatus files. Each apparatus file includes characteristics of a corresponding domestic appliance (14, 16). The data cloud (12) comprises a plurality of recipe files. The present invention relates to a remote control system for controlling a domestic appliance. Each recipe file includes instructions for a working process of the domestic appliance (14, 16).

FIG 1



Description

[0001] The present invention relates to a remote control system for controlling at least one domestic appliance. In particular, the present invention relates to a remote control system for controlling at least one cooking appliance. Further, the present invention relates to a method for controlling at least one domestic appliance.

[0002] Recipe files for domestic appliances may be downloaded from the internet. For example, the recipe file includes a cooking recipe for a cooking appliance. In general, the recipe file may include instructions for a working process of an arbitrary domestic appliance. However, the downloadable recipe files are not very precise. Further, such recipe files do not consider specific properties of the individual domestic appliance.

[0003] It is an object of the present invention to provide a remote control system for controlling at least one domestic appliance, which considers specific properties of the individual domestic appliance when using a recipe file.

[0004] The object is achieved by the remote control system for controlling at least one domestic appliance according to claim 1.

[0005] According to the present invention a remote control system for controlling at least one domestic appliance is provided, wherein:

- the remote control system comprises at least one remote control device, at least one data cloud and at least one domestic appliance,
- the remote control device is connectable or connected to the data cloud via a first wireless connection,
- the remote control device is connectable or connected to the domestic appliance via a second wireless connection,
- the remote control device includes at least one application software for communicating with the data cloud and the domestic appliance,
- the data cloud comprises a plurality of apparatus files,
- each apparatus file includes characteristics of a corresponding domestic appliance,
- the data cloud comprises a plurality of recipe files, and
- each recipe file includes instructions for a working process of the domestic appliance.

[0006] The main idea of the present invention is that the data cloud comprises the apparatus files on the one hand and the recipe files on the other hand. A working process defined by the recipe file may be adapted by information from the corresponding apparatus file to the actual domestic appliance.

[0007] Preferably, the recipe file is transmissible from the data cloud to the domestic appliance via the application software, if said recipe file is verified for said domestic appliance. The verified recipe file means that the recipe

has been tested with the same domestic appliance.

[0008] Further, the data cloud may comprise at least one recipe list indicating the recipe files available on said data cloud. Preferably, the recipe list is always indicated on a menu of the application software.

[0009] Similarly, the data cloud may comprise at least one apparatus list indicating the apparatus files available on said data cloud.

[0010] Moreover, the remote control system may comprise at least one mapping database, wherein allowable combinations of recipe files and apparatus files are stored in said mapping database. In particular, all allowable combinations of recipe files and apparatus files are stored in said mapping database. Preferably, the mapping database is stored on the application software, in particular on a back end of said application software. At the moment, when the domestic appliance is registered by the user, then the mapping database or the application software, respectively, gather links of the recipe files available for said domestic appliance, so that the recipe list can be indicated on the menu of the application software.

[0011] Since the mapping database with the links of the recipe files for the registered domestic appliance is stored on the application software of the remote control device, it is excluded that any recipe file or apparatus file from a strange data cloud can be selected by mistake.

[0012] The verification of the recipe file for the corresponding domestic appliance bases on information stored in the mapping database. Further, additional information relating to said recipe files and/or apparatus files may be stored in said mapping database.

[0013] For example, the recipe file is a cooking recipe file including an ingredient list, a list of cooking steps and/or a picture of the dish.

[0014] Further, the present invention relates to a method for controlling at least one domestic appliance by using the remote control system mentioned above, wherein said method comprises the steps of:

- connecting the application software on the remote control device to the data cloud,
- searching for an apparatus file corresponding with the domestic appliance,
- selecting the apparatus file corresponding with the domestic appliance,
- searching for a recipe file, and
- selecting the recipe file, and
- activating the working process on domestic appliance according to the information of the recipe file and the apparatus file.

[0015] Preferably, the recipe file is selectable only, if said recipe file has been verified for the domestic appliance corresponding with the selected the apparatus file.

[0016] In particular, the recipe file may be transferred from the data cloud to the domestic appliance via the application software.

[0017] Moreover, the recipe file may be processed by a processor of the domestic appliance.

[0018] Furthermore, the working process on the domestic appliance is started remotely by the application software.

[0019] For example, the user is informed by the application software, when the working process has been finished.

[0020] Alternatively or additionally, the user may be informed by a user interface of the domestic appliance, when the working process has been finished.

[0021] Preferably, the method is provided for controlling at least one cooking appliance.

[0022] In this case, the recipe file may be a cooking recipe file, wherein on the menu of the application software the following item are available:

- ingredient list,
- list of cooking steps and
- start of the cooking recipe.

[0023] Novel and inventive features of the present invention are set forth in the appended claims.

[0024] The present invention will be described in further detail with reference to the drawing, in which

FIG 1 illustrates a schematic representation of a remote control system for at least one domestic appliance according to a preferred embodiment of the present invention.

[0025] FIG 1 illustrates a schematic representation of a remote control system for at least one domestic appliance 14, 16 according to a preferred embodiment of the present invention.

[0026] The remote control system comprises a remote control device 10, a data cloud 12, a first domestic appliance 14 and a second domestic appliance 16. In general, the remote control system may comprise an arbitrary number of domestic appliances 14 and 16. In this example, the first domestic appliance 14 is a cooking oven, while the second domestic appliance 16 is a washing machine. The remote control device 10 is connected or connectable to the data cloud 12 via a first wireless connection 18. Further, the remote control device 10 is connected or connectable to the domestic appliances 14 and 16 via second wireless connections 20. For example, the domestic appliances 14 and 16 send their identifying flags anytime.

[0027] In particular, the identifying flag includes a product code number (PNC). The product code number (PNC) indicates uniquely the model of the domestic appliance 14 or 16. Usually, the product code number (PNC) includes about nine digits. Further, the identifying flag may include a level code (LC). Said level code (LC) indicates the number of times the model has been irreversibly modified with impact on service. Different types of intervention are defined by different level codes (LC).

Usually, the level code (LC) includes about two digits.

[0028] Preferably, the remote control device 10 is a mobile remote control device, for example a mobile phone, a smart phone, a tablet or a notebook. However, the remote control device 10 may be also a stationary remote control device 10, for example a personal computer. The remote control device 10 includes an application software (APP) for controlling the connections 18 and 20 to the data cloud 12 and the domestic appliances 14 and 16, respectively.

[0029] The data cloud 12 is a remote server. A plurality of recipe files 22 is stored in said data cloud 12. For example, the recipe file 22 includes a cooking recipe. In general, the recipe file 22 includes an instruction for a working process of an arbitrary domestic appliance, e.g. a cooking program for a cooking oven, a washing program for a dishwasher or washing machine or a drying program for a laundry dryer. Moreover, a plurality of apparatus files 24 is stored in the data cloud 12. Each apparatus file 24 includes the characteristics of a corresponding domestic appliance 14 or 16. The apparatus files 24 for the domestic appliances 14 and 16 are stored in the data cloud 12. Additionally, the apparatus files 24 for further domestic appliances may be stored in the data cloud 12. For example, the apparatus files 24 for current domestic appliances of a producer are stored in the data cloud 12, wherein said data cloud 12 is provided by said producer. The characteristics of the domestic appliance is stored in an apparatus file. For example, said apparatus file is a CFG file. A plurality of apparatus files is stored in the data cloud 12.

[0030] The data cloud 12 includes a recipe list 26, in which the available recipe files 22 are itemised. Further, the data cloud 12 includes an apparatus list 28, in which the available apparatus files 24 are itemised, wherein each apparatus file 24 corresponds with a domestic appliance 14 or 16 or another domestic appliance.

[0031] Further, the remote control system may comprise at least one mapping database. The allowable combinations of recipe files 22 and apparatus files 24 are stored in said mapping database. In particular, all allowable combinations of recipe files 22 and apparatus files 24 are stored in said mapping database. Preferably, the mapping database is stored on the application software, in particular on a back end of said application software. At the moment, when the domestic appliance 14 or 16 is registered by the user, then the mapping database or the application software, respectively, gather links of the recipe files 22 available for said domestic appliance 14 or 16, so that the recipe list 26 can be indicated on the menu of the application software.

[0032] Since the mapping database with the links of the recipe files 22 for the registered domestic appliance 14 or 16 is stored on the application software of the remote control device 10, it is excluded that any recipe file 22 or apparatus file 24 from a strange data cloud 12 can be selected by mistake.

[0033] The verification of the recipe file 22 for the cor-

responding domestic appliance 14 or 16 bases on information stored in the mapping database. Moreover, additional information relating to said recipe files 22 and/or apparatus files 24 may be stored in said mapping database.

[0034] When the application software on the remote control device 10 is connected to the data cloud 12 via the first wireless connection 18, then the apparatus file corresponding with the domestic appliance 14 or 16 is searched and selected. After that, the desired recipe file 22 is searched and selected. However, the recipe file is selectable only, if said recipe file has been verified for the domestic appliance corresponding with the selected the apparatus file. The recipe file 22 may be transferred from the data cloud 12 to the domestic appliance 14 or 16 via the application software. At last, the working process on the domestic appliance is performed according to the information of the recipe file and the apparatus file, wherein the recipe file 22 may be processed by a processor of the domestic appliance.

[0035] The working process on the domestic appliance 14 or 16 may be started remotely by the application software. For example, the user is informed by the application software, when the working process has been finished. Alternatively or additionally, the user may be informed by a user interface of the domestic appliance, when the working process has been finished.

[0036] According to a preferred embodiment of the present invention, the system and the method are provided for controlling at least one cooking appliance. In this case, the recipe file may be a cooking recipe file, wherein on the menu of the application software the following item are available:

- ingredient list,
- list of cooking steps and
- start of the cooking recipe.

[0037] Although an illustrative embodiment of the present invention has been described herein with reference to the accompanying drawings, it is to be understood that the present invention is not limited to that precise embodiment, and that various other changes and modifications may be affected therein by one skilled in the art without departing from the scope or spirit of the invention. All such changes and modifications are intended to be included within the scope of the invention as defined by the appended claims.

List of reference numerals

[0038]

- | | |
|----|--|
| 10 | remote control device |
| 12 | data cloud |
| 14 | first domestic appliance, cooking oven |
| 16 | second domestic appliance, washing machine |
| 18 | first wireless connection |

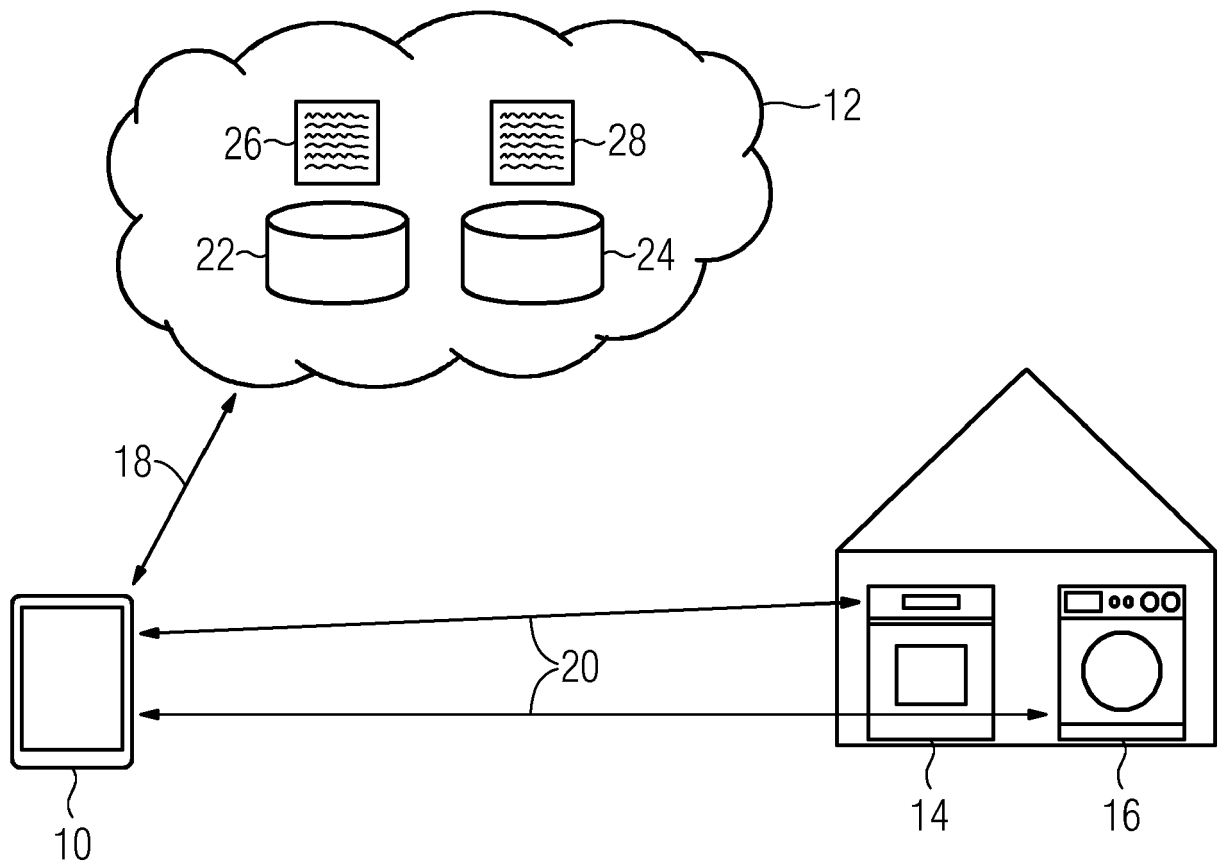
- | | |
|----|----------------------------|
| 20 | second wireless connection |
| 22 | recipe file |
| 24 | apparatus file |
| 26 | recipe list |
| 28 | apparatus list |

Claims

- | | |
|----|--|
| 10 | 1. A remote control system for controlling at least one domestic appliance (14, 16), wherein: |
| 15 | - the remote control system comprises at least one remote control device (10), at least one data cloud (12) and at least one domestic appliance (14, 16), |
| 20 | - the remote control device (10) is connectable or connected to the data cloud (12) via a first wireless connection (18), |
| 25 | - the remote control device (10) is connectable or connected to the domestic appliance (14, 16) via a second wireless connection (20), |
| 30 | - the remote control device (10) includes at least one application software for communicating with the data cloud (12) and the domestic appliance (14, 16), |
| 35 | - the data cloud (12) comprises a plurality of apparatus files (24), |
| | - each apparatus file (24) includes characteristics of a corresponding domestic appliance (14, 16), |
| | - the data cloud (12) comprises a plurality of recipe files (22), and |
| | - each recipe file (22) includes instructions for a working process of the domestic appliance (14, 16). |
| 40 | 2. The remote control system according to claim 1, characterised in that the recipe file (22) is transmissible from the data cloud (12) to the domestic appliance (14, 16) via the application software, if said recipe file (22) is verified for said domestic appliance (14, 16). |
| 45 | 3. The remote control system according to claim 1 or 2, characterised in that the data cloud (12) comprises at least one recipe list (26) indicating the recipe files (22) available on said data cloud (12), wherein preferably said recipe list (26) is always indicated on a menu of the application software. |
| 50 | 4. The remote control system according to any one of the preceding claims, characterised in that the data cloud (12) comprises at least one apparatus list (28) indicating the apparatus files (24) available on said data cloud (12). |
| 55 | |

5. The remote control system according to any one of the preceding claims,
characterised in that
the remote control system comprises at least one mapping database, wherein allowable combinations of recipe files (22) and apparatus files (24) are stored in said mapping database, and wherein preferably the mapping database is stored on the application software, in particular on a back end of said application software.
6. The remote control system according to any one of the preceding claims,
characterised in that
the recipe file (22) is a cooking recipe file (22) including an ingredient list, a list of cooking steps and/or a picture of the dish.
7. A method for controlling at least one domestic appliance (14, 16) by using the remote control system according to any one of the preceding claims, wherein said method comprises the steps of:
- connecting the application software on the remote control device (10) to the data cloud (12),
 - searching for an apparatus file (24) corresponding with the domestic appliance (14, 16),
 - selecting the apparatus file (24) corresponding with the domestic appliance (14, 16),
 - searching for a recipe file (22), and
 - selecting the recipe file (22), and
 - activating the working process on domestic appliance (14, 16) according to the information of the recipe file (22) and the apparatus file (24).
8. The method according to claim 7,
characterised in that
the recipe file (22) is selectable only, if said recipe file (22) has been verified for the domestic appliance (14, 16) corresponding with the selected the apparatus file (24).
9. The method according to claim 7 or 8,
characterised in that
the recipe file (22) is transferred from the data cloud (12) to the domestic appliance (14, 16) via the application software.
10. The method according to any one of the claims 7 to 9,
characterised in that
the recipe file (22) is processed by a processor of the domestic appliance (14, 16).
11. The method according to any one of the claims 7 to 10,
characterised in that
the working process on the domestic appliance (14, 16) is started remotely by the application software.
12. The method according to any one of the claims 7 to 11,
characterised in that
the user is informed by the application software, when the working process has been finished.
13. The method according to any one of the claims 7 to 11,
characterised in that
the user is informed by a user interface of the domestic appliance (14, 16), when the working process has been finished.
14. The method according to any one of the claims 7 to 13,
characterised in that
the method is provided for controlling at least one cooking appliance (14).
15. The method according to claim 14,
characterised in that
the recipe file (22) is a cooking recipe file (22), wherein on the menu of the application software the following item are available:
- ingredient list,
 - list of cooking steps and
 - start of the cooking recipe.

FIG 1





EUROPEAN SEARCH REPORT

Application Number
EP 19 18 4034

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EPO FORM 1503 03.82 (P04C01)

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Place of search The Hague		Date of completion of the search 19 November 2019	Examiner Baas, Gert-Jan
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**ANNEX TO THE EUROPEAN SEARCH REPORT
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This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
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