



(51) International Patent Classification:

G06F 9/451 (2018.01) H04L 12/28 (2006.01)

(21) International Application Number:

PCT/IB2020/000510

(22) International Filing Date:

28 May 2020 (28.05.2020)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

PCT/CN2019/089168

30 May 2019 (30.05.2019)

CN

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(81) Designated States (*unless otherwise indicated, for every kind of national protection available*): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DJ, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IR, IS, JO, JP, KE, KG, KH, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, WS, ZA, ZM, ZW.

(84) Designated States (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, ST, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK,

(54) Title: METHOD FOR SETTING A LANGUAGE OF AN ELECTRONIC DEVICE

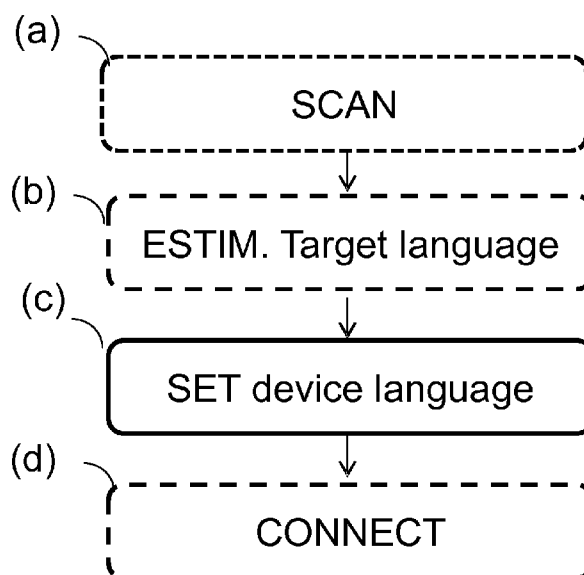


FIG. 2

(57) Abstract: The present invention relates to a method for setting a language of an electronic device (1), comprising performing by a processing unit (11) of the electronic device (1) the following steps: scanning (a) for neighboring wireless electronic devices (2a, 2b); determining (b) a target language as a function of at least one attribute of neighboring wireless electronic devices (2a, 2b) which are detected during the scanning; setting (c) said target language as the language of the electronic device (1).

EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV,
MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM,
TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW,
KM, ML, MR, NE, SN, TD, TG).

Published:

— *with international search report (Art. 21(3))*

METHOD FOR SETTING A LANGUAGE OF AN ELECTRONIC DEVICE

FIELD OF THE INVENTION

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The present invention relates to the field of electronic devices designed to be connected wirelessly with other electronic devices, such as smart speakers connectable to wireless access points. More particularly, the present invention relates to a method for setting a language for such electronic devices.

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BACKGROUND OF THE INVENTION

A smart speaker is a type of wireless speaker which can be voice controlled. It offers numerous functions beyond playing audio, such as sending internet queries, controlling home automation devices, etc., and is generally provided with a virtual assistant. For example, Amazon's speakers are provided with an assistant named Alexa.

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Smart speakers allow interactive actions and handsfree activation with the help of one "hot word", or "wake word" i.e. a predetermined keyword such as "Alexa" for Amazon's speakers.

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To this end, smart speakers have to connect to the user's local network (and from this to Internet) for accessing query servers, in particular through Wi-Fi.

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Smart speakers can actively talk to the users for instance for greeting them, acknowledging commands or responding to questions.

Thus, a suitable language has to be set, if a default language (factory setting) does not suit the user.

A lot of connected devices (for instance printers or other appliances) are provided with a physical interface (buttons or screens) that could be used to this end, but smart speakers are intended to be voice controlled and

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therefore nowadays do not comprise anymore such a physical interface. Consequently, the language to be used by a smart speaker is generally set following a voice command by the user or even automatically detected from the user's voice.

5 The problem is that both these techniques requires the network setup to be done before they could be used.

Consequently, during the connection phase, only the default language is available, which is a problem as the connection procedure could be complex, and guidance is appreciated.

10 It could be possible to preset different default languages, according to the country of the user, but that would be expensive and suboptimal as some countries have several official languages. Furthermore, people living abroad could prefer to use their native language instead of a local one.

15 These issues arising with setting up the language actually apply to all electronic devices nowadays, since most electronic devices are designed to be sold in various countries and thus are configured in factory to use various languages, among which one has to be selected at a time.

20 There is consequently a need for a simple and user-friendly method for setting up the language of an electronic device (such as a smart speaker or any other smart device) in particular before that such an electronic device is connected to another electronic device, for instance in order to obtain access to a network.

SUMMARY OF THE INVENTION

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For these purposes, the present invention provides a method for setting a language of an electronic device, comprising the following steps, performed by a processing unit of the electronic device:

30 scanning (a) for neighboring wireless electronic devices;
 determining (b) a target language as a function of at least one attribute of the neighboring wireless electronic devices which are detected during the scanning; and

setting (c) said target language as the language of the electronic device.

Preferred but non limiting features of the present invention are as follow:

- 5 • scanning step (a) comprises detecting messages emitted by said neighboring wireless electronic devices, said at least one attribute being inserted in said messages;
 - at least one of said neighboring wireless electronic device is a neighboring wireless access point;
- 10 • said at least one attribute of said neighboring wireless access points is in a format pursuant to the 802.11 standard;
 - said at least one attribute of said neighboring wireless access point comprises a language attribute, the target language being determined on the basis of said language attribute;
- 15 • said at least one attribute of said neighboring wireless access point comprises a country code and/or a service set identifier, the determining step (b) further comprising estimating the target language as a function of said country code and/or said service set identifier;
 - the estimating step (b) comprises identifying a list of potential local
 - 20 languages from the country code fields of the neighboring wireless access points, and if said list of potential local languages is empty or comprises a plurality of potential local languages, estimating the target language from service set identifiers;
 - at least one neighboring wireless electronic device is a neighboring
 - 25 wireless peripheral device, said at least one attribute of said neighboring wireless peripheral device comprising a device name, the determining step (b) further comprising estimating the target language as a function of said device name;
 - estimating the target language as a function of a service set identifier
 - 30 and/or a device name comprises analysing said service set identifier and/or device name as a text so as to detect language specific words;

- the setting step (c) further comprises submitting the target language to the user for approval before setting it as the language of the electronic device after detecting a user's approval;
- the scanning step (a) is automatically performed when the electronic device is powered on for the first time;
- one of the neighboring wireless electronic device is a wireless access point, the method further comprising a step of connecting (d) the electronic device to said wireless access point.

10 According to a second aspect, the invention proposes an electronic device comprising a processing unit, characterized in that the processing unit is configured to:

- scan for neighboring wireless electronic devices;
- determine a target language as a function of at least one attribute of the neighboring wireless electronic devices detected during the scanning;
- set said target language as the language of the electronic device.

20 Preferred but non limiting features of the present invention are as follow: the electronic device does not comprise any button for setting the language of the electronic device;

25 According to a third aspect, the invention proposes a computer program product comprising code instructions for executing a method according to the first aspect for setting a language of an electronic device.

BRIEF DESCRIPTION OF THE DRAWINGS

30 The above and other objects, features and advantages of this invention will be apparent in the following detailed description of an illustrative embodiment thereof, which is to be read in connection with the accompanying drawings wherein:

- figure 1 illustrates an example of architecture of a network in which is performed the method according to the invention;
- figure 2 illustrates an embodiment of the method according to the invention; and
- figure 3 represents an example of attributes of neighboring wireless electronic devices of the access point type.

10 DETAILED DESCRIPTION PREFERRED EMBODIMENTS

Architecture

The present invention relates to a method for setting a language of an electronic device 1. The electronic device 1 is supposed to be in range of at least one wireless electronic device 2a, 2b, as represented by **figure 1**.

Here, a “wireless electronic device” refers to an electronic device which is configured to emit and receive wireless signals carrying information, using a dedicated protocol such as WiFi (i.e. 802.11 IEEE standards), Bluetooth or Zigbee protocol, among others.

By “in range”, it is meant that said wireless electronic device 2a, 2b is a “neighboring” wireless electronic device which is reachable from the electronic device 1, in other words that the wireless signals emitted by the wireless electronic device 2a, 2b are detectable by the electronic device 1. Each wireless electronic device 2a, 2b may be of various nature, and there may be any combination thereof.

According to a first possibility, a wireless electronic device 2a, 2b is a wireless access point, i.e. the electronic device 1 is connectable to said one wireless access point 2a, 2b which generates a (local) wireless network and grants access to a further network such as internet. In other words, a wireless connection to this wireless access point 2a, 2b is possible (provided that the user knows credentials such as a password for connecting to this wireless access point 2a, 2b). Note that wireless access

points 2a, 2b could be any kind of device able to generate a wireless local network, including for instance a mobile terminal performing tethering. Here, the wireless technology involved is typically Wi-Fi, so that the corresponding local network is typically protected using a mechanism such as WPA-AES
5 (“Wi-Fi Protected Access” with “Advanced Encryption Standard”), but other wireless technologies such as Bluetooth are possible.

According to a second possibility, a wireless electronic device 2a, 2b is an electronic device able to connect wirelessly with the electronic device, in a one-to-one pairing fashion, without necessarily granting access to a
10 further network. A typical example is a wireless peripheral device such as a headset, a speaker, an appliance, etc. In such a case, the wireless electronic device 2a, 2b may connect to the electronic device 1, in particular by pairing, using a wireless technology which, this time, is typically Bluetooth or ZigBee, but may also be Wi-Fi or any other radio technology.

15 The present invention is not limited to any type of wireless electronic device 2a, 2b.

Generally, at least one of the neighboring electronic devices 2a, 2b is actually owned by the user of the electronic device 1 as his personal wireless electronic device. For instance, when considering the case of
20 wireless access points, a first neighboring wireless access point is an internet gateway or a router of the user (also called a “box”), while others are that of neighbors or nearby business places (in other words the user detects such wireless electronic devices 2a, 2b of the access point type but does not have the corresponding credentials for them). In the example of
25 figure 1, the wireless electronic device 2a is an access point belonging to the user, while wireless electronic device 2b is another access point belonging to a neighbor of the user.

The present method for setting a language is intended to be performed before any connection between the electronic device 1 and a
30 neighboring wireless electronic device 2a,2b is established, e.g. before a wireless access point is selected in the present example and a corresponding password is memorized.

Preferably, this method for setting a language is performed when the electronic device setup is initiated, as parts of the method could also be used for said connection setup (see below), and even at the first launch of the electronic device 1.

5 The electronic device 1 comprises a processing unit 11, i.e. a CPU (one or more processors), a memory 12 (for example flash memory), a communication unit for wireless communication with wireless electronic devices 2a, 2b (i.e. an antenna) and generally a microphone 13 for inputting sound and a speaker 14 for outputting sound, in particular when the
10 electronic device 1 is of the “smart speaker” type. In this later case, it preferably does not comprise any other input interface, and in particular no keyboard, and even no button at all in some cases.

 The memory 12 could be used possibly for storing applications, which can be of various types, and data. The electronic device 1 also
15 typically comprises a battery (not illustrated), in particular a rechargeable battery (for instance lithium polymer), for powering the processing unit 11 and other units, but alternatively, the electronic device 1 may be plugged to a power supply.

 The electronic device 1 is preferably a smart speaker as already
20 explained, which has no interface besides a microphone 13 and a speaker 14, but it could be another type of device such as a TV, a video game console, a household appliance such as a refrigerator, etc.

 The electronic device 1 is supposed to have a settable language, in particular chosen among a list of predetermined languages, and a default
25 language could be preset, such as English. Said default language is intended to be used as a “backup language” if no other language is further set. Note that the language actually set thanks to the present method could end up being the same as the default language. As explained, the present method aims at setting the language even before a connection to any other
30 wireless electronic device, such as wireless access point, is established, so that it is possible that the default language could not be used even once.

Method for setting a language

The processing unit 11 of the device 1 is configured to perform the present method for setting a language of the electronic device 1.

5 The present invention takes advantage of the information provided by the neighboring wireless electronic devices 2a, 2b.

In particular, as it can be seen in **figure 2**, the method starts with a step (a) of scanning for neighboring wireless electronic devices 2a, 2b, during which the electronic device 1 typically scans for signals emitted by neighboring wireless electronic devices 2a, 2b (for instance beacon frames or discoverable frames), in order to detect neighboring wireless electronic devices, which may be listed then. In other words, during this scanning step (a), neighboring wireless electronic devices (in particular the ones which are actively emitting wireless signals) are detected by the electronic device 1.

10 These neighboring electronic devices can in particular be neighboring wireless access points, neighboring Bluetooth-compatible peripheral devices or neighboring Bluetooth-compatible household appliances such as TV, refrigerator or other household appliances, for instance.

The scanning step (a) therefore preferably comprises detecting messages emitted wirelessly by neighboring wireless electronic devices 2a, 2b. In the case of a neighboring wireless electronic device 2a, 2b of the access point type for a Wi-Fi connection, the beacon frames to be detected could be in particular formatted pursuant to the 802.11 standard.

20 In the case of a neighboring wireless electronic device 2a, 2b of the Bluetooth-compatible peripheral device or household appliance, such a scanning step is also called “device discovery” step, where beacon frames (also named discoverable frames) are detected by the electronic device 1.

Note that even if, at the same time, wireless access points and wireless peripheral devices (or wireless household appliances) are detected as neighboring wireless electronic devices 2a, 2b (i.e. messages from several types of neighboring wireless electronic devices 2a, 2b may be detected), only some of them can be considered (for instance only the

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wireless access points), i.e. messages from other types of neighboring wireless electronic devices may be ignored by the electronic device 1 even if they are detectable.

As explained, scanning step (a) may be performed automatically when the device 1 is powered on for the first time, preferably as a part of the network connection procedure so as to be more efficiently set up for use. Indeed, the electronic device 1 has first to scan for neighboring wireless access points before connecting to one of them (the user may be requested to select it).

Alternatively, a voice command may be used for triggering language setting and/or connection, for instance a “universal” phrase such as “initialization” or “start”. In that case, the processing unit 11 can be pre-trained to recognize this specific voice command.

In another embodiment, this voice command can simply correspond to a default wake word (such as “Alexa” for Amazon’s speakers) for performing a “wake up command”, in order to wake up an electronic device being in sleep mode. Indeed, some electronic devices such as smart speakers are able to natively support a wake up command, i.e. without any network connection. In that case, the processing unit 11 is trained about how to detect the voice of the user and at least to recognize a wake word, and said wake word is internationally known.

In a known fashion, such a scanning step (a) may comprise broadcasting a probe request to which the neighboring wireless electronic devices 2a, 2b respond by sending a response message (typically beacon frames for a Wifi access point and/or discoverable frames for a Bluetooth-compatible peripheral device or household appliance) which may contain in particular at least one “attribute”. Therefore, scanning step (a) preferably comprises acquiring the attributes of said neighboring wireless electronic devices 2a, 2b.

By “attribute”, it is meant an information about the neighboring wireless electronic devices 2a, 2b, in particular in a format pursuant to the 802.11 standard if at least one neighboring wireless electronic device 2a, 2b

is a Wi-Fi access point, or in a format pursuant to the Bluetooth standard if at least one electronic device 2a, 2b is a Bluetooth-compatible peripheral device or house appliance.

Such attributes generally include for instance a signal strength
5 parameter, a channel width or a frequency band, which are generally used by electronic devices for identifying the most performant wireless access point.

Note that even if there is always a list of attributes, each of these attributes is not necessary provided or even known by the wireless
10 electronic device 2a, 2b, so that said acquisition is to be seen as an attempt to acquire if available the attributes of the neighboring wireless electronic devices 2a, 2b.

At the end of step (a), the processing unit 11 has typically obtained at least one matrix of attributes of neighboring wireless electronic devices such
15 as represented by **Figure 3** (note that there could be several matrices if these are different types of neighboring wireless electronic devices 2a, 2b with different attributes).

In this example (wherein the neighboring electronic devices are wireless access points), each line represents a neighboring wireless
20 electronic device while each column represents an attribute. Note that all attributes are not always provided by the wireless electronic devices (only a few such as the BSSID field in case of Wi-Fi access points are mandatory) and therefore some cells of the matrix may be empty.

The present method proposes to astutely use some of these
25 attributes to determine, in a further determining step (b), a target language. This determination can be implemented directly, from an attribute indicative of a language, or more indirectly through an estimating step which will be detailed below. By "target language", it is meant here the language to be set as the language of the electronic device 1, in a further language setting step
30 (c).

In other words, the target language can be assumed, with a relatively high degree of certainty, to be the language that the user would have

selected. To rephrase again, the target language determination is probabilistic, so that even if the result may not always be necessarily successful, it is still an improvement when compared to letting the user manually select the language (s)he prefers, or waiting for the establishment of a connection with a wireless access point using a default language.

Note that the language setting step (c) may comprise submitting the target language to the user for approval, before setting it as the language of the electronic device 1. For example, if English language has been determined as the target language, step (c) may comprise outputting (using the speaker 14) "Do you want to use the English language?". If the user does not agree (or even does not understand the sentence because it does not speak the target language), there will be no confirmation, and for example the default language, or another language, could be used instead.

In some cases, a plurality of target languages may be determined as different candidates for a target language at determining step (b), and for example sorted by probability.

For instance, French language could be determined as the first target language (i.e. the most probable one), and then Chinese as the second target language (i.e. the second most probable one). In such a case, if the first target language is not confirmed by the user, the second one is then submitted to the user, etc. In any case, there may be still the possibility of using the default language if the user rejects each proposed target language.

The confirmation/rejection could be done thanks to a vocal command if the electronic device 1 comprises a microphone 13.

Once the target language has been set for the electronic device 1, in an optional step (d), the electronic device 1 may connect to one of the neighboring wireless electronic devices 2a, 2b of the access point type, for instance selected by the user. Thus, the results of the scanning step (a) may be further used for the establishment of a network connection through this wireless access point. Note that the user may be guided through the

establishment of this connection by using the target language which has just been set in the language setting step (c).

When the network connection is established, there may be an automatic verification of the set language, using known techniques of voice analysis, in particular if the default language has been kept (i.e. if the user has rejected proposed target language(s)).

It is underlined that the present method can be performed without necessarily carrying out this connecting step (d). In other words, thanks to the present invention, the language to be used by an electronic device can be determined just by scanning for surrounding wireless electronic devices, without having to establish a wireless connection with one of them.

Determination of the target language

As previously explained, determining step (b) comprises determining a target language as a function of at least one attribute of neighboring wireless electronic devices 2a, 2b which are detected during the scanning step (a). More precisely, determining step (b) comprises analyzing some or all of the attributes of some or all of neighboring wireless electronic devices 2a, 2b, obtained during the scanning step (a), so as to determine the most probable language of the user of the device 1 and use this language as target language.

Note here that only one neighboring wireless electronic device may be detected during the scanning, in such a way that only some or all of the attributes of this neighboring wireless electronic device may be considered when determining the target language. In particular, only one of attributes described later of this neighboring wireless electronic device may be considered, which leads to a very straight-forward way of determining the target language, at the cost of an increased risk of error if this neighboring wireless device is improperly configured.

On the contrary, when several neighboring wireless electronic devices are detected during the scanning step (a), one or more attribute(s)

of all of these neighboring wireless electronic devices can be used to determine the target language. It is also possible to use the attribute(s) of only some of these detected neighboring wireless electronic devices, if for instance some neighboring wireless electronic devices are determined as
5 being the most relevant for the present method (in which case their attribute(s) is used) or on the contrary if some neighboring wireless electronic devices are determined as being irrelevant for the present method (in which case their attribute(s) is not used).

In a first embodiment, an attribute of the neighboring wireless
10 electronic devices 2a, 2b is a “language” attribute, which may be specified for each of the wireless electronic devices and can be inserted in signals emitted by said wireless electronic devices, for example in beacon frames when using WiFi, or in similar signals emitted periodically when using Bluetooth and/or ZigBee technologies.

15 Such a language attribute can indicate the language used by the wireless electronic device which emits the signals containing this attribute, for instance as set by default or modified later by a user of this wireless electronic device.

In such a case, when choosing the target language, it is assumed
20 that the language to be used by the electronic device 1 should be determined based on the language used by the neighboring wireless electronic device(s). In other words, the electronic device 1 astutely re-uses language attributes not initially foreseen for such purpose, in order to infer its own language from the language(s) used by other electronic device(s)
25 nearby, for instance the most used language if several distinct language attributes are detected around. And the more there are neighboring electronic device(s) which are properly installed and set to use a common language, the more reliable is the result of the target language chosen when using this language attribute in the present method.

30 In this case, the language attribute inserted in the beacon/discoverable frames emitted by one of the neighboring wireless electronic devices 2a, 2b corresponds to the language used by this

neighboring wireless electronic device. This language attribute may be pre-set by the manufacturer of this electronic device, set manually by a user (for example through a configuration in the settings of a configuration portal for this electronic device) or determined as corresponding to the language used the most by other electronic devices detected around, in a similar way as in the present method (i.e. by analyzing received beacon/discoverable frames), so that the used language may propagate from one electronic device to the other electronic device, every time a new electronic device is installed at proximity of an already installed electronic device.

10 In this first embodiment, when scanning for neighboring wireless electronic devices, the electronic device 1 receives messages (e.g. beacon/discovery frames) from the neighboring wireless electronic devices, detects the language attributes inserted in these messages and determine the target language from these detected language attributes (for instance, the language attribute having the highest number of occurrences among all detected language attributes).

In another embodiment, as depicted by Figure 3, the attribute(s) of neighboring wireless electronic devices 2a, 2b of the access point type comprises a country code field and/or a service set identifier (SSID). In the case of neighboring wireless electronic devices 2a, 2b of the peripheral device type, the attribute(s) generally comprises a device name. While not indicating directly a language to be used, all these attributes are meaningful with respect to a language. Therefore, in the present case, determining step (b) advantageously comprises estimating the target language as a function of the available country code fields and/or SSIDs and/or device names of said neighboring wireless electronic devices 2a, 2b.

According to various possible embodiments, either one of country codes and SSIDs is used, or both simultaneously, or one after the other as a backup (advantageously firstly country code fields then SSIDs, but the other way around is possible). Preferably, step (b) comprises identifying a list of potential local languages from the country code fields of the neighboring wireless access points 2a, 2b, and if said list of potential local

languages is empty or comprises a plurality of potential local languages, then estimating the target from language service set identifiers.

The country code field is an attribute for regulatory purposes. Indeed, access points are designed for use in many countries with varying regulatory requirements. The radio bands used by wireless access points are assigned according to a specific regulatory domain at the factory and the country code enables to specify a particular country of operation so as to ensure that each broadcasted frequency bands, interfaces, channels, and transmit power levels are compliant with country-specific regulations.

From each country code, a set of at least one potential language can be deduced. Indeed, some countries have a single official language while others have a plurality of official languages. For instance, if the country code is "CN" (for China), the only corresponding official language is Chinese Mandarin. If the country code is "CA" (for Canada), there are two corresponding official languages: French and English languages. A table of potential language corresponding to each existing country code could be stored by the electronic device 1 for performing step (b).

Thus, when analyzing country codes fields, the list of potential languages may be the union of all sets of potential languages associated to each available country code. Note that if there is not a single country code available, the list is empty then.

A score representative of the probability of being the right language, when defined as the target language, can be associated to each potential language using the following principles:

- the more a country code is present, the higher the score is; and/or
- the more a country code has potential languages associated with, the lower the score is.

For example, in the figure 3, the country code "CN" is present four times out of nine (with each time a single language for each country code), so that Chinese language may be associated with a probability of 56%.

French language may be associated with a probability of 11% and English language may be associated with a probability of 22%.

At this point, the list of potential languages may comprise more than one language, so that SSID could be considered to refine further the estimation of the target language. Note that a probability threshold could be used, for example 50% (which is exceeded in the previous example so that Chinese could be selected as the target language without considering the SSIDs in this example).

A Service Set Identifier (SSID) is the name given (either automatically or manually by a user) to a wireless network generated by a wireless access point. Similarly, a device name is the name given (again either automatically or manually by a user) to a wireless peripheral device. Estimating a target language as a function of a service Set identifier or a device name advantageously comprises analysing said service set identifier/device name as a text, so as to detect language specific words which enable to identify a language.

In particular, typical words, names or operators could be language specific. In the example of Figure 3, the name "Livebox" is representative of a French gateway, and the name "Beijing" or Chinese ideograms are representative of a Chinese gateway. Note that known tools such as Compact Language Detector are able to detect a language from a couple of strings, and one of these tools could be preinstalled on the device 1 (in factory).

Similarly to country code fields, from each SSID or device name attribute, a set of at least one potential language is attempted to be deduced (note that the name could be totally meaningless, like "BBMG" in Figure 3, and no potential language be deduced, so that the set is empty). And finally, the list of potential languages is the union of all sets of potential languages deduced from each SSID/device name.

If there is a first list of potential languages deduced from the country codes and a second list of potential languages deduced from SSIDs, the

intersection of these lists could be taken, and the probability of the candidates in the intersection be considered then.

For example, in the SSIDs of Figure 3, five of them contains the words “orange” or “Livebox” which are both French language related, and
5 three of them contains words or ideograms which are Chinese language related. Therefore, from the first list {“CN”, “FR”, “GB”}, French language may be selected as the target language even if “CN” was the most probable one after considering only the country codes.

Alternatively, pre-selecting first potential language using country
10 codes, and then refining this pre-selection using the SSIDs can be performed.

Device, computer product program, and computer-readable medium

15 The present invention also concerns the electronic device 1 for performing the method as previously defined. As explained, the electronic device 1 may be typically a smart speaker adapted for connecting to a wireless network through a neighbouring wireless electronic device 2a, 2b of the access point type, and comprises at least a processing unit 11. It
20 typically also comprises a memory 12, a microphone 13, a speaker 14 and/or a battery.

In a preferred embodiment, the electronic device 1 does not comprise any button for setting the language of the electronic device 1. In that case, the electronic device 1 may comprise a single physical button, i.e. the
25 ON/OFF button for powering on and off the electronic device 1, or even no physical button at all in a cost-optimized embodiment.

The processing unit 11 is configured to implement:

- scanning for neighboring wireless electronic devices 2a, 2b;
- determining a target language as a function of at least one
30 attribute of neighboring wireless electronic device 2a, 2b which are detected during the scanning;

- setting said target language as the language of the electronic device 1.

5 The invention further proposes a computer program product, comprising code instructions for executing (in particular with a processing unit 11 of the mobile terminal 1) the previously described method, as well as a computer-readable medium (in particular a memory 12 of the device 1), on which is stored a computer program product comprising code instructions for executing said method.

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CLAIMS

1. A method for setting a language of an electronic device
5 (1), comprising the following steps, performed by a processing unit (11) of the electronic device (1):
scanning (a) for neighboring wireless electronic devices (2a, 2b);
determining (b) a target language as a function of at least one
10 attribute of neighboring wireless electronic devices (2a, 2b) which are detected during the scanning; and
setting (c) said target language as the language of the electronic device (1).
- 15 2. A method according to claim 1, wherein scanning step (a) comprises detecting messages emitted by said neighboring wireless electronic devices (2a, 2b), said at least one attribute being inserted in said messages.
- 20 3. A method according to any one of claims 1 and 2, wherein at least one of said neighboring wireless electronic device (2a, 2b) is a neighboring wireless access point.
4. A method according to claim 3, wherein said at least
25 one attribute of said neighboring wireless access points (2a, 2b) is in a format pursuant to the 802.11 standard.
5. A method according to any one of claims 3 to 4, wherein
30 said at least one attribute of said neighboring wireless access point (2a, 2b) comprises a language attribute, the target language being determined on the basis of said language attribute.

6. A method according to any one of claims 3 to 5, wherein said at least one attribute of said neighboring wireless access point (2a, 2b) comprises a country code and/or a service set identifier, the determining step (b) further comprising estimating the target language as a function of said country code and/or said service set identifier.

7. A method according to claim 6, wherein the estimating step (b) comprises identifying a list of potential local languages from the country code fields of the neighboring wireless access points (2a, 2b), and if said list of potential local languages is empty or comprises a plurality of potential local languages, estimating the target language from service set identifiers.

8. A method according to any one of claims 1 to 7, wherein at least one neighboring wireless electronic device (2a, 2b) is a neighboring wireless peripheral device, said at least one attribute of said neighboring wireless peripheral device (2a, 2b) comprising a device name, the determining step (b) further comprising estimating the target language as a function of said device name.

20

9. A method according to one of claims 6 to 8, wherein estimating the target language as a function of a service set identifier and/or a device name comprises analysing said service set identifier and/or device name as a text so as to detect language specific words.

25

10. A method according to any one of claims 1 to 9, wherein the setting step (c) further comprises submitting the target language to the user for approval before setting it as the language of the electronic device (1) after detecting a user's approval.

30

11. A method according to any one of claims 1 to 10, wherein the scanning step (a) is automatically performed when the electronic device (1) is powered on for the first time.

5 **12.** A method according to any one of claims 1 to 11, wherein one of the neighboring wireless electronic device (2a,2b) is a wireless access point, the method further comprising a step of connecting (d) the electronic device (1) to said wireless access point.

10 **13.** An electronic device (1) comprising a processing unit (11), characterized in that the processing unit (11) is configured to:

- scan for neighboring wireless electronic devices (2a, 2b);
- determine a target language as a function of at least one attribute of neighboring wireless electronic devices (2a, 2b) which are
15 detected during the scanning;
- set said target language as the language of the electronic device (1).

14. An electronic device according to claim 13, wherein the
20 electronic device does not comprise any button for setting the language of the electronic device (1).

15. A computer program product comprising code instructions for executing a method according to any one of claims 1 to 14
25 for setting a language of an electronic device.

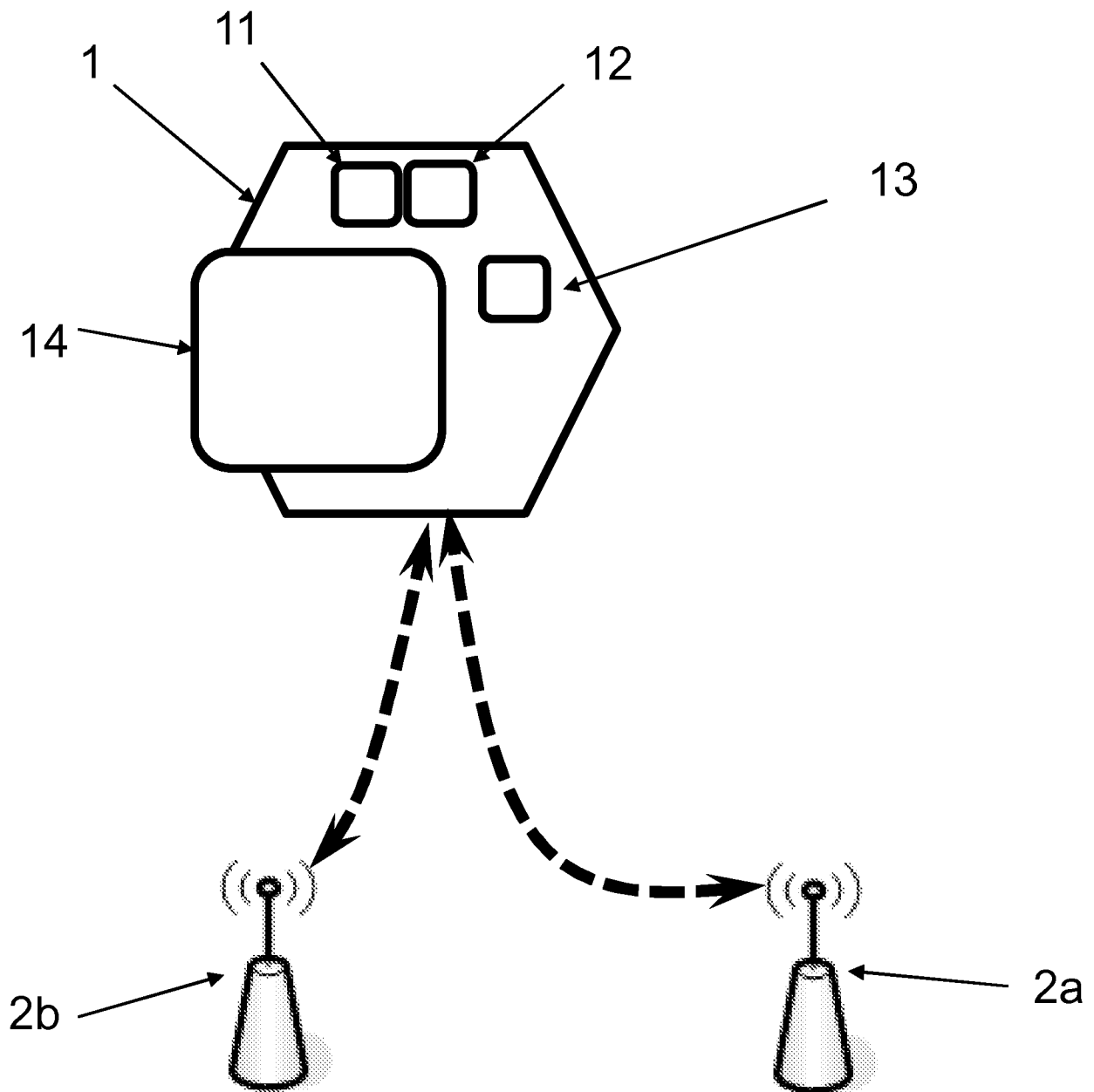


FIG. 1

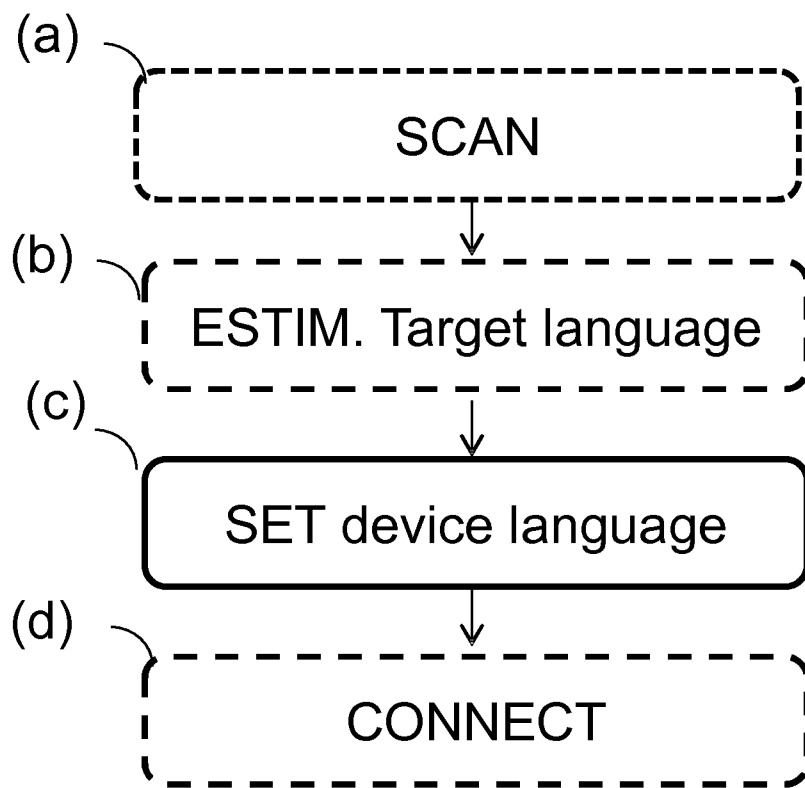


FIG. 2

[illegible]

FIG. 3

INTERNATIONAL SEARCH REPORT

International application No

PCT/IB2020/000510

A. CLASSIFICATION OF SUBJECT MATTER

INV. G06F9/451 H04L12/28
ADD.

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)

G06F H04L

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 practicable, search terms used)

EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 9 998 334 B1 (YU CHENGFU [US]) 12 June 2018 (2018-06-12) column 3, line 16 - column 12, line 9 -----	1-15
A	US 2015/248399 A1 (PATIL NAGANAGOUDA B [US]) 3 September 2015 (2015-09-03) paragraph [0004] - paragraph [0007] paragraph [0013] - paragraph [0021] -----	1-15
A	US 2013/272164 A1 (LEONARDOS DIMITRIOS [GR] ET AL) 17 October 2013 (2013-10-17) paragraph [0044] - paragraph [0073] -----	1-15



Further documents are listed in the continuation of Box C.



See patent family annex.

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"&" document member of the same patent family

Date of the actual completion of the international search

3 September 2020

Date of mailing of the international search report

17/09/2020

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INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/IB2020/000510

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