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(54) **INCLUSIVE PERSONAL WAYFINDING ASSISTIVE METHOD AND SYSTEM FOR ELECTRONIC DEVICES FOR ALL, IN PARTICULAR FOR VISUALLY IMPAIRED, DYSLECTICS, THE COLOR BLIND, ELDERLY AND CHILDREN.**

(57) The present invention is an inclusive personal wayfinding assistive methodology and system (The System) for electronic devices such as handheld or in-vehicle devices (The Device). The System is inclusively designed making independent wayfinding more intuitive and hereby accessible to a larger audience in general and in particular to visually impaired persons, dyslectics, color blind, elderly and children (The User). The concept transforms all current navigation guidance complexity into an intuitive, personal user experience that steps away from commonly used complex user interfaces that utilize a traditional digital map on top of which arrows and routes are displayed to in indicate the user's position, direction and route information in combination with navigation voice instructions to guide the user such as described in these following examples US2013325322A1[1] and US2019212151A1 [2].

The disclosed is different to these traditional digital map and arrow interfaces by using well distinguishable, high contrast circular visual objects instead of maps and arrows and the likes to make the interface accessible to a much larger audience.

Moreover, the disclosed uses a unique combination of multi-sensory interfaces; visual, haptic, voice and sound in a game like dynamic interface to guide The User.

The System offers flexible wayfinding assistance allowing The User to deviate from the selected route to avoid obstacles. The flexible wayfinding assistance wilt in this case recognize the deviation and alter its navigation guidance automatically without the need for route-recalculations.

INCLUSIVE PERSONAL WAYFINDING ASSISTIVE METHOD AND SYSTEM FOR ELECTRONIC DEVICES FOR ALL, IN PARTICULAR FOR VISUALLY IMPAIRED, DYSLECTICS, THE COLOR BLIND, ELDERLY AND CHILDREN.

Embodiments

1. The present invention introduces an intuitive personalized game-like multi-sensory interface for personal wayfinding (The System) for electronic devices. The disclosed will make real personal assistive wayfinding for electronic personal and in-vehicle devices accessible to a larger and, more diverse audience. Like visually impaired persons (VIP), dyslectics, illiterates, color blind, elderly and children (The User) that require additional assistance to navigate their environment independently and to create location awareness. This is accomplished by transforming the complexity of currently used digital navigation systems that utilize a traditional digital map on top of which arrows and routes are displayed to guide the user as described in examples US2013325322A1[1] and US2019212151A1 [2] into an intuitive, everyone-can-understand personal navigation tool that uses a new dynamic visual interface supported by haptic, sound and voice interfaces.
2. The Systems visual user interface provides personal wayfinding assistance to The User towards a desired destination associated with a facility by introducing large, easy distinguishable high contrast circular objects that objectifies in a dynamic manner The Users relative position and movement towards the desired direction The Users position relative to the desired route, destination and waypoints which represents a point on the desired route that requires The Users action, like a change of direction or interaction with an object such as a crossing or door. The System also allows for haptic, voice and sound guidance.
3. The System introduces a 2D/3D guidance switch simplifying the user experience by offering The User to choose between a 2D or 3D representation of the circular object representing The Users position relative to the desired route in the visual user interface described in 1.
4. The System offers flexible wayfinding when The User to deviates from the desired route to avoid (temporary) obstacles. The flexible wayfinding will in this case

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[1] US2013325322A1 SYSTEM AND METHOD FOR NAVIGATION WITH INERTIAL CHARACTERISTICS.
[2] US2019212151A1 FACILITY NAVIGATION

recognize The User's deviation and alter the navigation guidance by rearranging the circular objects to the new deviated situation.

5. The System offers location awareness in an easy to understand intuitive way by its visual interface and by introducing the explore function that uses comparable multi-sensory interface elements as described in 1 to indicate objects in The Users direct surroundings. More specifically the explore-function presents objects in the direction The User's device is pointing, which in this document will be referred to as The Heading.
6. The System offers presets to make the visual interface suitable for people with various visual disabilities.
7. The present invention introduces an intuitive personalized game-like multi-sensory interface for personal wayfinding (The System) for electronic devices. The disclosed will make real personal assistive wayfinding for electronic personal and in-vehicle devices accessible to a larger and, more diverse audience. Like visually impaired persons (VIP), dyslectics, illiterates, color blind, elderly and children (The User) that require additional assistance to navigate their environment independently and to create location awareness. This is accomplished by transforming the complexity of currently used digital navigation systems that utilize a traditional digital map on top of which arrows and routes are displayed to guide the user as described in examples US2013325322A1[3] and US2019212151A1 [4] into an intuitive, everyone-can-understand personal navigation tool that uses a new dynamic visual interface supported by haptic, sound and voice interfaces.
8. The Systems visual user interface provides personal wayfinding assistance to The User towards a desired destination associated with a facility by introducing large, easy distinguishable high contrast circular objects that objectifies in a dynamic manner The Users relative position and movement towards the desired direction The Users position relative to the desired route, destination and waypoints which represents a point on the desired route that requires The Users action, like a change of direction or interaction with an object such as a crossing or door. The System also allows for haptic, voice and sound guidance.

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[3] US2013325322A1 SYSTEM AND METHOD FOR NAVIGATION WITH INERTIAL CHARACTERISTICS.
[4] US20192121S1A1 FACILITY NAVIGATION

9. The System introduces a 2D/3D guidance switch simplifying the user experience by offering The User to choose between a 2D or 3D representation of the circular object representing The Users position relative to the desired route in the visual user interface described in 1.
10. The System offers flexible wayfinding when The User to deviates from the desired route to avoid (temporary) obstacles. The flexible wayfinding will in this case recognize The User's deviation and alter the navigation guidance by rearranging the circular objects to the new deviated situation.
11. The System offers location awareness in an easy to understand intuitive way by its visual interface and by introducing the explore function that uses comparable multi-sensory interface elements as described in 1 to indicate objects in The Users direct surroundings. More specifically the explore-function presents objects in the direction The User's device is pointing, which in this document will be referred to as The Heading.
12. The System offers presets to make the visual interface suitable for people with various visual disabilities.

Description

Field

[1] Embodiments described here represent a wayfinding guidance methodology and application that introduces a novel concept of navigation to users of an electronic device. Inclusively designed, The System is in particular designed for individuals with a cognitive or visual impairment such as the visually impaired, dyslectics, elderly and children but also improve the user experience to the general public increasing the use of personal wayfinding for personal and in-vehicle electronic devices.

Background

[2] Individuals with a visual or cognitive disability such as visually impaired, dyslectics, color blind, illiterates, elderly and children have many difficulties navigating in a given environment. For example, walking from a given location to a destination may be a difficult task for such individuals, particularly in city and indoor environments. In case of a visual disability walking canes and seeing-eye dogs are helpful for avoiding some obstacles but may not address the broader issue of providing personal wayfinding assistance and location awareness. For this the visually impaired have depended on walking sticks, audible traffic signals, and Braille signs to navigate. Without Orientation and Mobility training, blind people cannot navigate new places on their own. Moreover, information needed by these individuals for navigating certain environments (e.g., streets, subways, train stations, museums, office buildings and the like) may not be readily available in any accessible form that is of use to them. Further, orientation and navigation information may take on diverse forms which is already complex to the general public and therefore in particular to the individuals described here. The disclosed offers real personal assistive wayfinding and creates for electronic personal and in-vehicle devices accessible to a larger and more diverse audience.

[3] Most currently used navigation systems utilize a user interface existing of a traditional digital map on top of which arrows and routes are displayed to guide people as described in examples US2013325322A1 and US2019212151A1. These systems are complex for the general public to understand and a burden for users belonging to the following groups: visually impaired (VIP), dyslectics,

illiterates, color blind, elderly and children (The User). These individuals require other assistive methods to empower them to independently create location awareness and navigate to a desired location.

[4] Commonly used solutions on the market today trying to address these issues focus on audio systems to guide visually impaired that are built on top of these digital map interfaces and often use additional technology like Bluetooth or RFID beacons such as described in US2016259027A1[5]

[5] Other previous attempt to address these issues with infrared audible signs. This approach requires hand held devices that have to be pointed to the right direction to hear the sign. Additionally, infrared audible signs are expensive, have high installation maintenance cost and cannot be used by just any electronic device (smartphones or in-vehicle devices).

Definitions used in this document

[6] Navigation guidance information consists of information about the users position relative to The User's desired route, information about The User's next waypoint-heading towards the next waypoint, The User's destination-heading and The User's deviation from the desired route which are all relative to The User's position.

[7] A heading or view angle in this document is equal to the direction in which the top represented by **N** (Figure 1 introduces the high contrast circular objects of The System.) when the electronic device is pointing in vertical position a.k.a. portrait mode or **Q** when the device is in horizontal position a.k.a. landscape mode.

[8] The Users start position is the position from which the user starts navigating. It is determined by sources such as GPS, triangulation methods and/or beacons or the like from outside the present invention.

[9] The User's desired route (Route) is a set of waypoints and points of interest calculated from The User's start position and destination. The route is generated by calling a route generation Application Programming Interface (API) such as the one provided by Google Maps or other route provisioning method external to the present invention.

[5] US2016259027A1 AUDIO NAVIGATION SYSTEM FOR THE VISUALLY IMPAIRED

[10] A Point of Interest (POI) is a location that someone may find useful or interesting. In our case a POI is a location which The User can navigate to or pass by on the desired route. POI's are imported into the present invention using API's from available external sources.

[11] A waypoint is described a POI on The User's desired route where the route direction changes or an interaction with the environment is required by The User. Waypoints where an interaction is required is called an interaction point. Examples of interaction point are a door which has to be opened by the user, pushing an elevator button, going up or down stairs or escalator or other actions alike. Waypoints are imported into the present invention using API's from available external sources. The Destination is the POI representing The User's destination.

Brief description of drawings

[12] The invention will be further elucidated below on the basis of drawings. In the drawings, which are not necessarily drawn to scale, like numerals may describe similar components in different views. Like numerals having different letter suffixes may represent different instances of similar components. The drawings illustrate generally, by way of example, but not by way of limitation, various embodiments discussed in the present document.

[13] Figure 1 introduces the high contrast circular objects of The System.

[14] Figure 2 depicts how The System guides The User over a desired route.

[15] Figure 3 depicts the behavior of waypoint and destination circles when navigating a desired route.

[16] Figure 4 depicts reaching a waypoint or destination.

[17] Figure 5 depicts the 2D/3D switch.

[18] Figure 6 depicts the flexible wayfinding assistance

[19] Figure 7 depicts the explore function for location awareness

[20] Figure 8 depicts custom color options for various visual conditions.

Detailed description of the drawings

[21] The visually impaired have depended on walking sticks, audible traffic signals, and Braille signs to navigate. Without Orientation and Mobility training, blind people cannot navigate new places on their own. They are confined to routes and places they are familiar with and they must be constantly alert to sense cues and counting steps to recall routes memorized through training and practice.

[22] To address these non-intuitive user interface issues a visual user interface for electronic devices is herein described that provide more context and awareness to all users in general and in particular to users belonging to the groups described in [21].

[23] The present invention relates generally to methods and systems for receiving navigation routing information from various soft- and hardware resources and objectifies the information into a novel navigational user experience that can be used both in- and outdoor environment for portable and in-vehicle electronic devices, such as, smartphones, smart wearable devices, laptops, personal digital assistants, tablets, in-vehicle navigation devices and the like. More specifically, the present invention relates to a system and method for interpreting navigation instructions to a desired destination and creating location awareness into a novel intuitive user experience to users belonging to the groups described in [21].

[24] FIG. 1 introduces the high contrast objects of the visual navigation user interface which objectifies in a dynamic manner the user's relative position and movement towards a destination along a desired route where the center of circle **3** represents the user's optimal position at the desired route. **1** represents the user's destination by a pulsating circle. **2** represents the users next waypoint by another circle. **P** represents the relative position of the user to the desired route. **4** represents the 2D/3D switch for **P**. 5 is a button which stops the wayfinding process when pressed. The right screen represents a detailed enlargement of the smartphone screen at the left. The dotted line **6** represents an imaginary radius on which **1** (the user's destination), is presented. Dotted line **7** represents an imaginary circle on which **2** (the users next waypoint), is depicted. When navigating the positions of **1** and **2** on their radii is determined by their relative position from the user's perspective as will be explained in FIG. 2 – 5. **8** is a

distance to destination indicator which displays the remaining distance to The Destination, described in [11] , in meters as part of the total distance from navigation start point to destination point. Whenever the User reaches a waypoint a voice message is triggered communicating the remaining distance to the destination in meters. N and Q are representing The Heading of the electronic device depending if they are positioned vertically (portrait) or horizontally (landscape) as introduced in [7] .

[25] FIG. 2 illustrates the user experience of navigating the Route. When both The User's initial position and the Route are determined from sources outside the present invention, they are used to determine the starting positions of circles **1**,**2** and **P** of the of the visual user interface from FIG. 1. In the situation depicted here the user is right from the Route in case circle **P** is placed left from the central circle **3** indicating the User's optimal position from the Route. If the user will next move towards the Route, in this case to the left, circle P will start moving towards the center of **3**, the optimal position. Meanwhile the final destination circle **1** will appear and disappear intermittently for some seconds to indicate the Users final destination. Meanwhile the User's next waypoint direction is constantly indicated by the position of circle **2**. The behavior of **1** and **2** will be elucidated in more detail in FIG. 3.

[26] The dynamic movement of the circles transforms complex (maps and arrow style) navigation into a pleasant easy for all to understand, game-like user experience while creating location awareness at the same time.

[27] FIG. 3 illustrates in detail the dynamic behavior of 1 (the user's destination) and **2** (the next waypoint) as described in [11] on their respective radii as described in [24] when The User navigates to a destination over the desired route. P indicates that the user currently is right from the desired route and should therefore move to the left. Circle **1** indicates the direction of the user's destination and **2** the direction of the users next waypoint in the real world. **1** is positioned on imaginary line **L1** that originates from the center of **3** (representing the user's current position) to the real destination **1a** in the real world. Even so **2** is positioned on imaginary line **L2** that originates from the center of **3** (representing the user's current position) to the position of next waypoint **2a.** In this case when the user moves to the left **P** will move to the

center of **3** indicating to The User he is moving towards the desired route. In case that **3a** is in the center of 3 The User is at the optimal position relative to the desired route. Subsequently **2** will move clockwise on radius **7** (defined in FIG. 1) in such a way that it is always on imaginary line **L2**. When **2** arrives at the top position of circle 3 it means that the user is heading straight at the next waypoint. Meanwhile the user is informed about the direction of the destination by **1**. As **1** appears and disappears intermittently for some seconds it does not distract the user while navigating to the next waypoint. When **P** moves out of circle **3** The User is off the desired route too much, this will trigger off route sound and vibration to warn The User to move into the direction of **P**. The functionality as described can also be used in case a user has to deviate from the desired route when faced with a (temporary) obstacle as illustrated in FIG. 6. This dynamic behavior of the circles while The User is on the move creates a unique game-like navigation user experience and simultaneously provides location awareness.

[28] FIG. 4 illustrates what happens when The User reaches a waypoint. In that case **P** is positioned inside **3** will dynamically increase in size after which it decreases in size while a waypoint arrival sound is triggered by the system. If the reached waypoint is an interaction point the arrival will trigger the associated voice instruction. Next **2** will rotate on radius **7 to** the new position indicating the next waypoint to The User and **P** will take the new position relative to the route to the next waypoint. **1** will take on the new position on radius **6** indicating the destination, which is usually the same as the final waypoint.

[29] FIG. 5 illustrates the 3D guidance switch to determine how **P** will be positioned in the graphical user interface. We consider **3a** as the closest point on the desired route (indicated by **L5**) and The User's position represented by **3**. In **a.** the 3D switch is deactivated, the distance between **P** and **3** is proportional to the distance between The User **3** and **3a.** Circle **P** moves in horizontal direction over imaginary line **L3**. In **b.** the 3D switch is activated in which case again the distance between **P** and **3** is proportional to the distance between The User **3** and **3a**. Circle P moves in horizontal direction over imaginary line **L3**. In addition, P is positioned at an angle **β** at circle **3** where 0 degrees is at 12 o'clock.

[30] FIG. 6 illustrates the behavior of the interface when The User has to deviate from the desired route. Details are described in [27]

[31] FIG. 7 introduces the explore function which is developed to create location awareness by identifying points of interests (POI) in The User's surroundings with The User as the central point of reference. POI's and their locations are imported into the present invention using API's from available external sources. We consider a circle **R1** around The User, represented by center point **C** with a radius of 50 meters. All POI's that lie within the set range of in this case 50 meters are presented in **R1** at an angle **α** calculated from a from the center of **C** to **N** representing The Heading of the electronic device. An angle **α** of 0 degrees is therefore an indication that the POI is straight ahead of the electronic device, 90 degrees the POI will be to the right of the current heading etc. Whenever the User or vehicle turns and thus changing The Heading of the electronic device which will dynamically change the **α** of the POI's creating a rotating effect in the Visual User Interface of POI's orbiting around The User **C**. If a POI makes contact with **L6** text label **D** displaying the given name of the POI will appear. Text label **D** will also contain button **E** when activated will start the navigation to this POI by starting the visual navigation user interface as introduced in [13]

[32] FIG. 8 illustrates accessibility pre-set options for the visual interface that together will allow individuals with minimal eyesight to make use of the visual interface: a. visualizes the Standard setting and b. the high contrast setting.

State of the art

[33] Most currently used navigation systems utilize a user interface existing of a traditional digital map on top of which arrows and routes are displayed to guide people as described in examples US2013325322A1 and US2019212151A1.

[34] Commonly used solutions on the market today trying to address these issues focus on audio systems to guide visually impaired that are built on top of these digital map interfaces and often use additional technology like Bluetooth or RFID beacons such as described in US2016259027A1[6] .

[35] Other navigation related patents such as KR 2017/0104541A15 depicted in FIG. 9; US10132910B2 depicted in FIG. 10; US 2005/0099291A1 depicted in FIG.

[6] US2016259027A1 AUDIO NAVIGATION SYSTEM FOR THE VISUALLY IMPAIRED

11 and US2015302774A1 depicted in FIG. 12 have similar ambitions navigating the impaired and others but all have a completely different approach as can be deducted from the key drawings depicted in the associated pictures (FIG. 9, FIG. 10, FIG. 11 and FIG. 12.).

Conclusies

[1] De uitvinding beschrijft een methode en systeem voor autonome persoonlijke navigatie voor mobiele apparaten zoals, maar niet beperkt tot, smartphones en voertuig navigatie systemen, dat de complexiteit van de huidige oplossingen, verandert in een intuïtieve, door iedereen te begrijpen, computer-game-achtige gebruikerservaring.

[2] De uitvinding volgens [1] is primair ontworpen om de mobiele autonomie van mensen met een handicap, in het bijzonder visueel gehandicapten te vergroten. Dit wil zeggen dat ze onafhankelijk van de hulp van anderen, zelfstandig volgens hun eigen tijdschema naar een willekeurige bestemming kunnen navigeren.

[3] Door het geboden gebruiksgemak van het intuïtieve ontwerp is de uitvinding volgens [1] ook uitermate geschikt voor algemeen gebruik waardoor de uitvinding persoonlijke navigatie toegankelijk maakt voor het grote publiek.

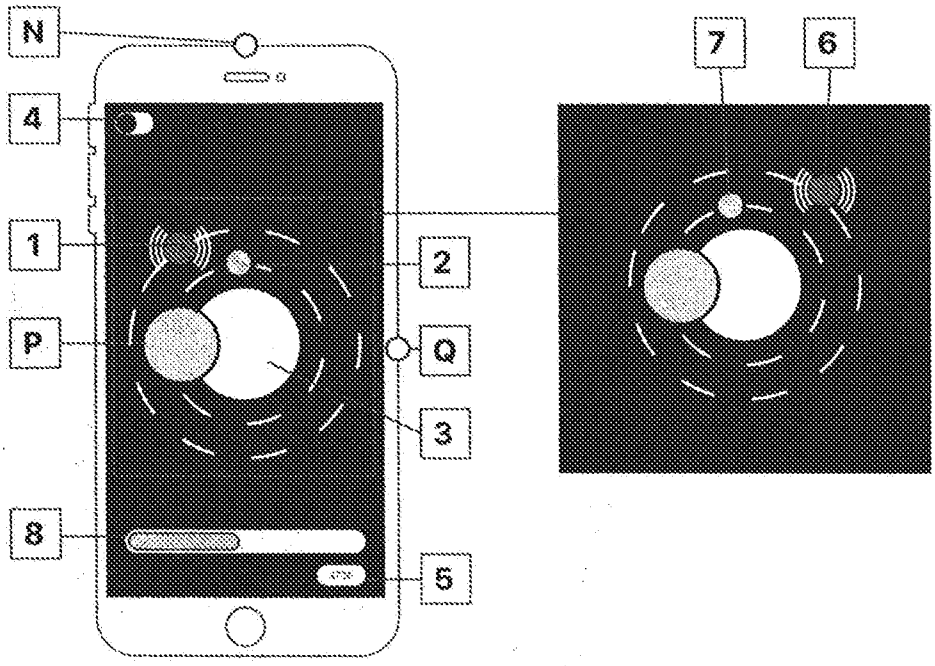


FIG. 1

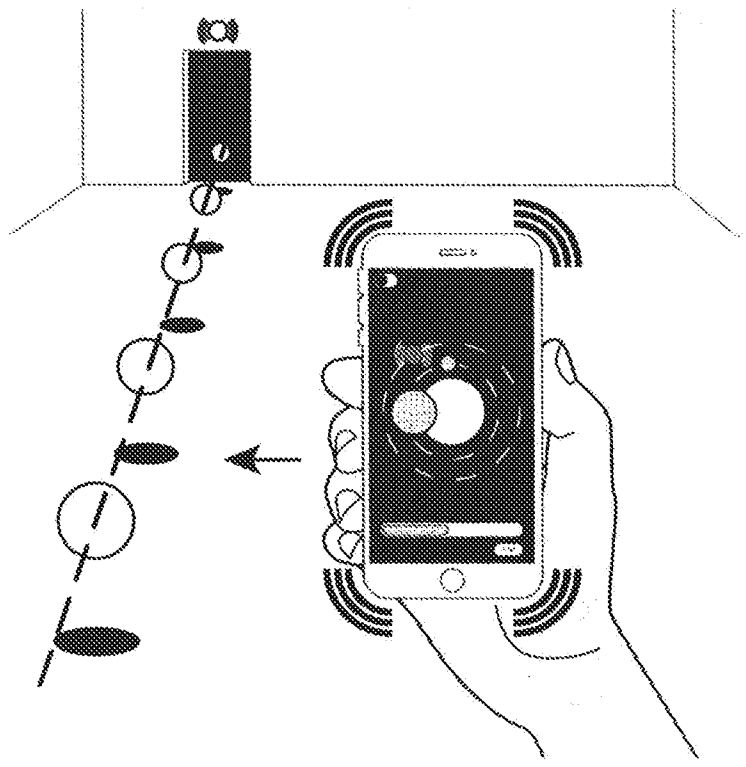


FIG. 2

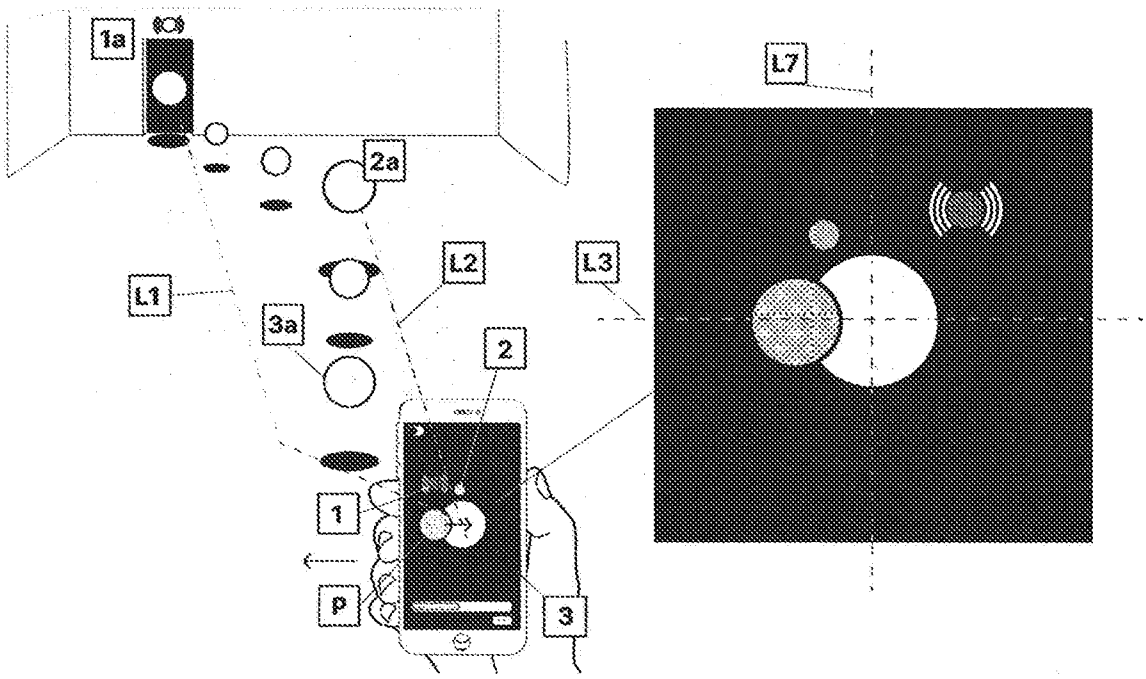


FIG. 3

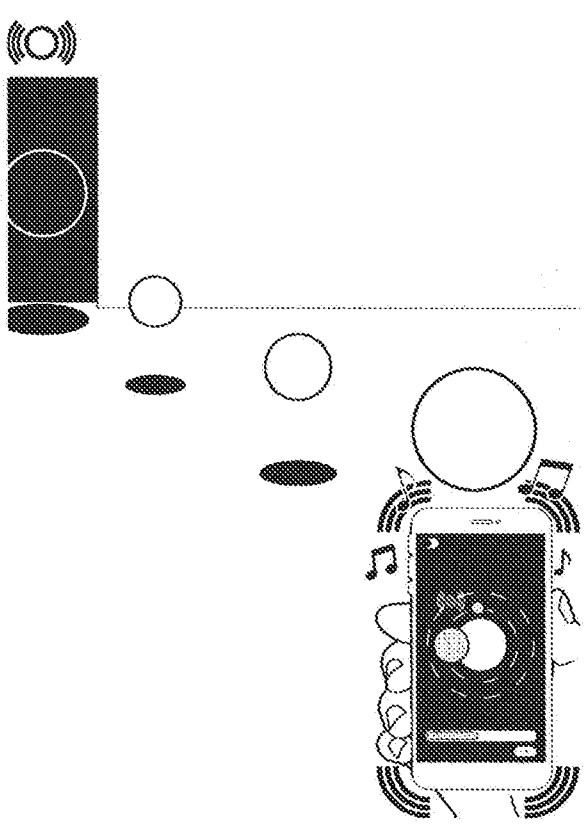


FIG. 4

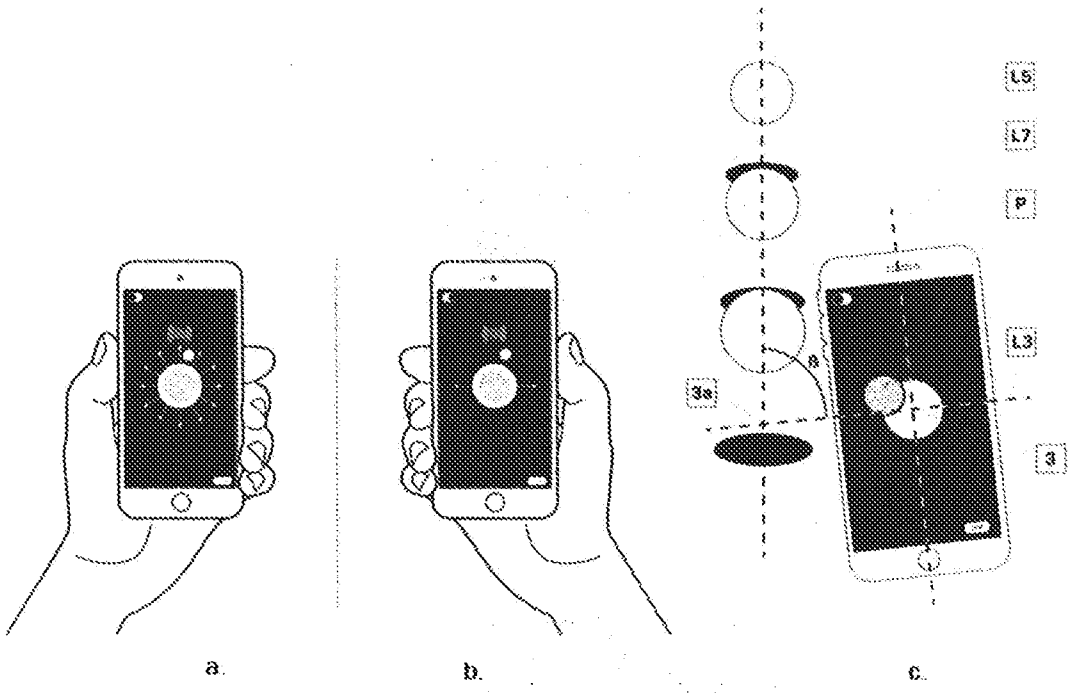


FIG. 5

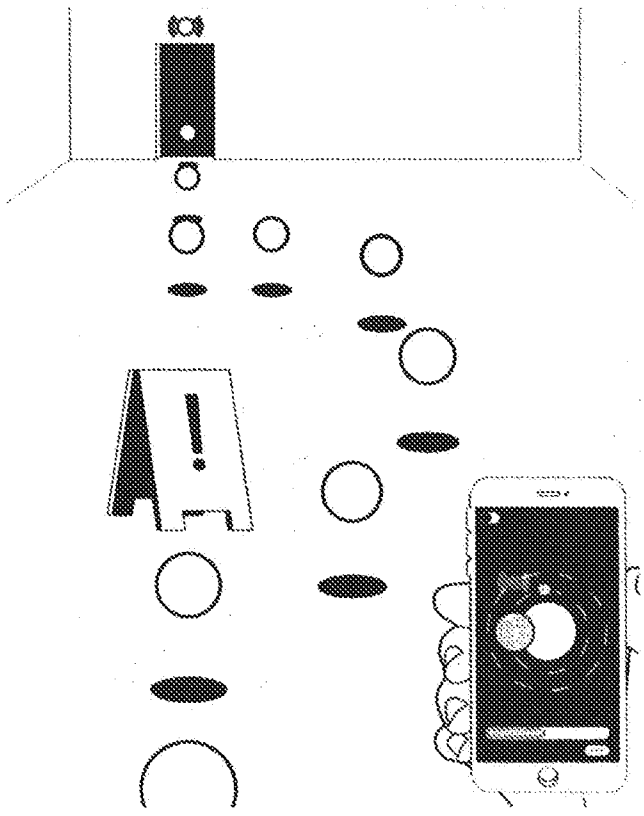


FIG. 6

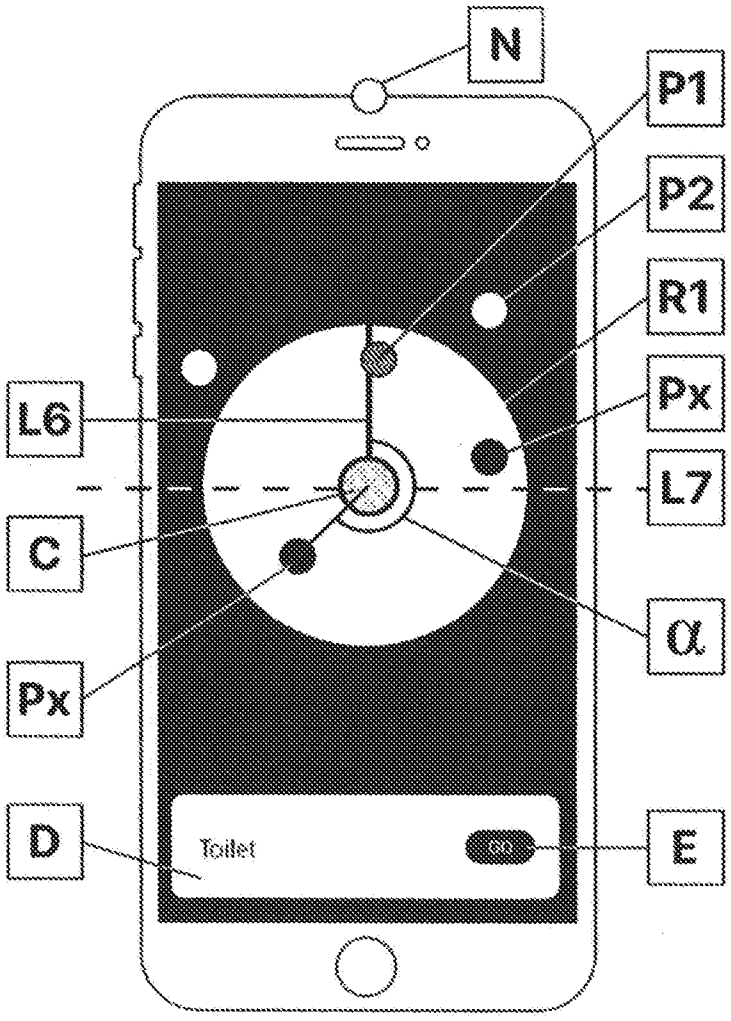
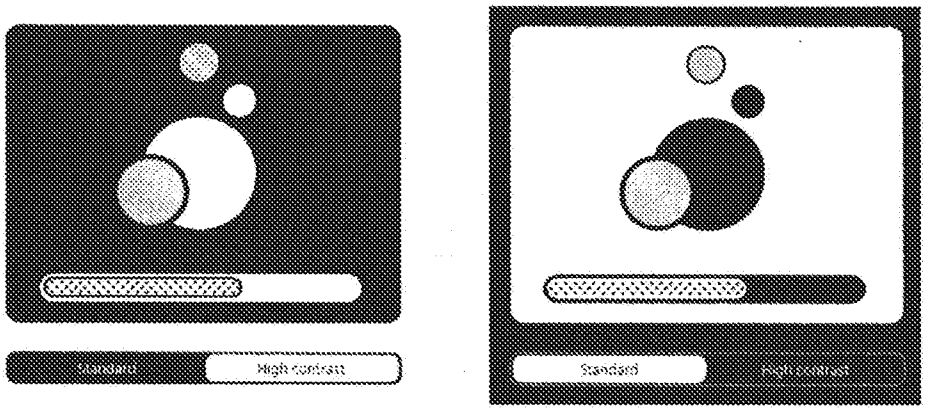

N
P1
P2
R1
Px
L7
α
E
L6
C
Px
D
Toilet
On

FIG. 7


Standard
High contrast
Standard

a. b.

FIG. 8

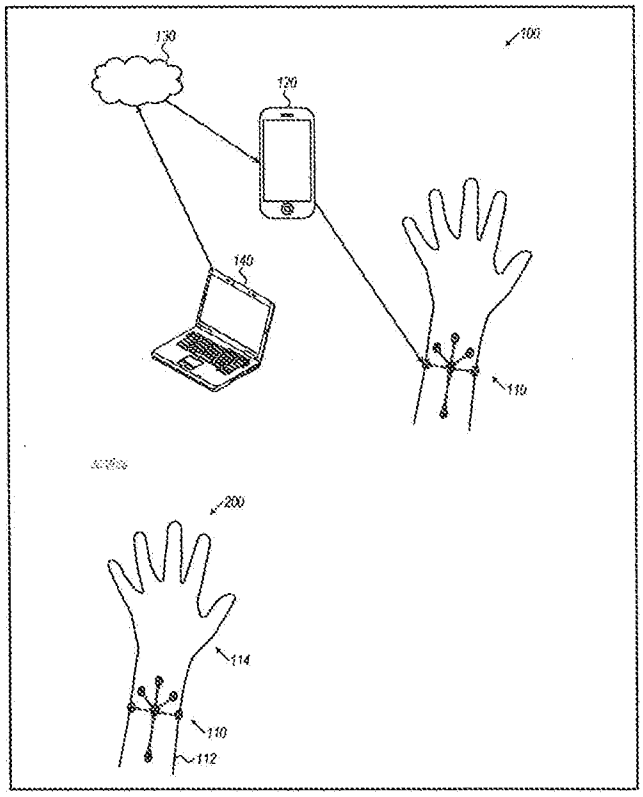

130
100
120
140
110
200
114
110
112

FIG. 9

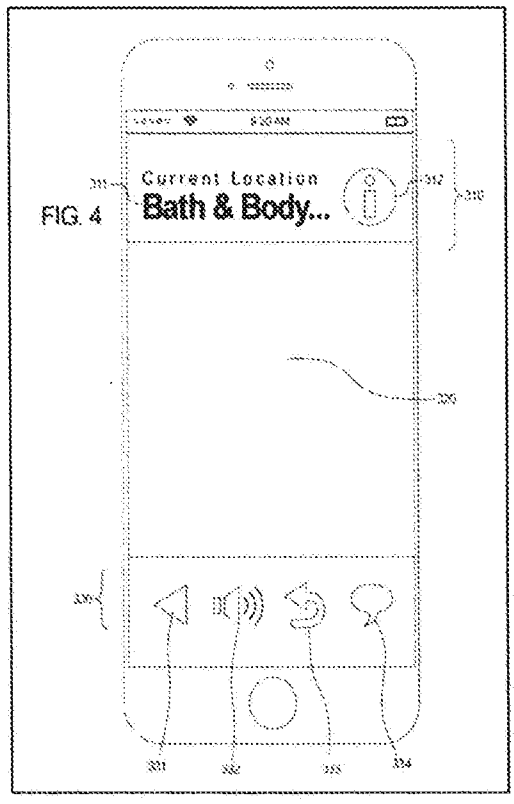


FIG. 4
Current Location
Bath & Body...
300

FIG. 10

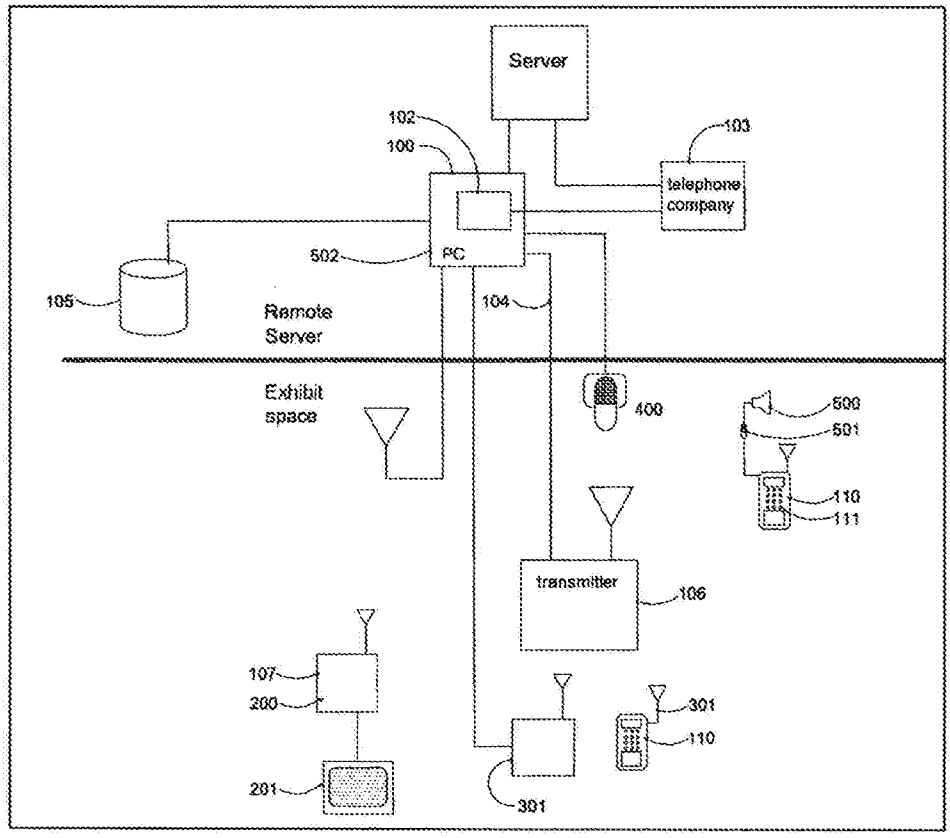

Server
102
100
103
telephone company
PC
502
105
Remote Server
104
Exhibit space
400
500
501
110
111
transmitter
106
107
200
201
301
110
301

FIG. 11

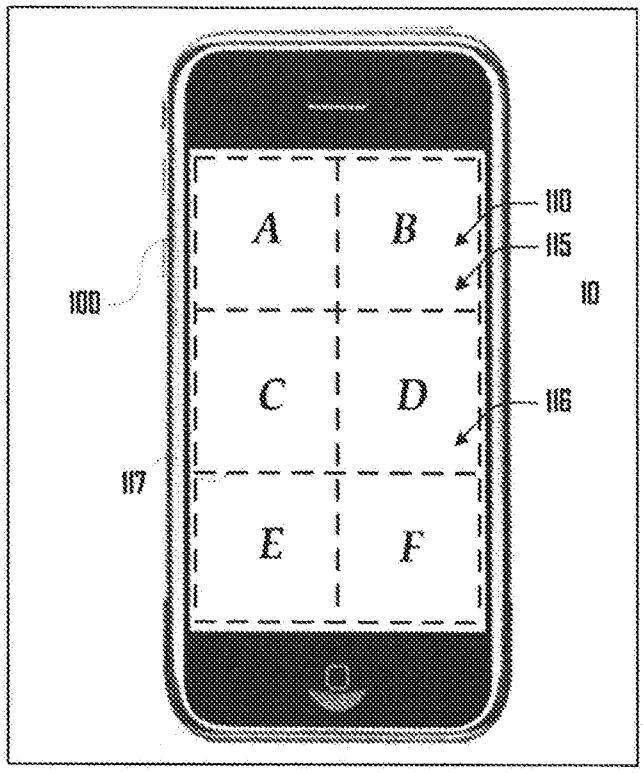

A
B
C
D
E
F
110
115
10
100
116
117

FIG. 12

SAMENWERKINGSVERDRAG (PCT)

RAPPORT BETREFFENDE NIEUWHEIDSONDERZOEK VAN INTERNATIONAAL TYPE

IDENTIFICATIE VAN DE NATIONALE AANVRAGE	KENMERK VAN DE AANVRAGER OF VAN DE GEMACHTIGDE
Nederlands aanvraag nr. **1043806**	Indieningsdatum **05-10-2020**
	Ingeroepen voorrangsdatum
Aanvrager (Naam) **Atsence B.V.**	
Datum van het verzoek voor een onderzoek van internationaal type **06-02-2021**	Door de Instantie voor Internationaal Onderzoek aan het verzoek voor een onderzoek van internationaal type toegekend nr. **SN78015**

I. CLASSIFICATIE VAN HET ONDERWERP (bij toepassing van verschillende classificaties, alle classificatiesymbolen opgeven)

Volgens de internationale classificatie (IPC)

Zie onderzoeksrapport

II. ONDERZOCHTE GEBIEDEN VAN DE TECHNIEK

Onderzochte minimumdocumentatie

Classificatiesysteem	Classificatiesymbolen
IPC	**Zie onderzoeksrapport**

Onderzochte andere documentatie dan de minimum documentatie, voor zover dergelijke documenten in de onderzochte gebieden zijn opgenomen

III.	☐	**GEEN ONDERZOEK MOGELIJK VOOR BEPAALDE CONCLUSIES**	(opmerkingen op aanvullingsblad)
IV.	☐	**GEBREK AAN EENHEID VAN UITVINDING**	(opmerkingen op aanvullingsblad)

ONDERZOEKSRAPPORT BETREFFENDE HET RESULTAAT VAN HET ONDERZOEK NAAR DE STAND VAN DE TECHNIEK VAN HET INTERNATIONALE TYPE

Nummer van het verzoek om een onderzoek naar de stand van de techniek
NL 1043806

A. CLASSIFICATIE VAN HET ONDERWERP
INV. G01C21/20 A61H3/06
ADD.

Volgens de Internationale Classificatie van octrooien (IPC) of zowel volgens de nationale classificatie als volgens de IPC.

B. ONDERZOCHTE GEBIEDEN VAN DE TECHNIEK

Onderzochte miminum documentatie (classificatie gevolgd door classificatiesymbolen)
G01C A61H

Onderzochte andere documentatie dan de mimimum documentatie, voor dergelijke documenten, voor zover dergelijke documenten in de onderzochte gebieden zijn opgenomen

Tijdens het onderzoek geraadpleegde elektronische gegevensbestanden (naam van de gegevensbestanden en, waar uitvoerbaar, gebruikte trefwoorden)
EPO-Internal, WPI Data

C. VAN BELANG GEACHTE DOCUMENTEN

Categorie °	Geciteerde documenten, eventueel met aanduiding van speciaal van belang zijnde passages	Van belang voor conclusie nr.
X	EP 1 614 997 A1 (NAVTEQ NORTH AMERICA LLC [US]) 11 januari 2006 (2006-01-11) * alineas [0062] - [0065]; figuren 14-16 *	1-3
X	WO 2012/035191 A1 (HYPERIN INC [FI]; LAPPALAINEN PETTERI [FI] ET AL.) 22 maart 2012 (2012-03-22) * figuur 3 *	1-3
X	US 2006/253226 A1 (MENDELSON EHUD [US]) 9 november 2006 (2006-11-09) * alineas [0128] - [0135]; figuur 1 *	1-3
X	EP 2 116 811 A2 (EUROCOPTER DEUTSCHLAND [DE]) 11 november 2009 (2009-11-11) * alineas [0019] - [0022]; figuur 2 *	1-3

☐ Verdere documenten worden vermeld in het vervolg van vak C.

☒ Leden van dezelfde octrooifamilie zijn vermeld in een bijlage

° Speciale categorieën van aangehaalde documenten

"A" niet tot de categorie X of Y behorende literatuur die de stand van de techniek beschrijft

"D" in de octrooiaanvrage vermeld

"E" eerdere octrooi(aanvrage), gepubliceerd op of na de indieningsdatum, waarin dezelfde uitvinding wordt beschreven

"L" om andere redenen vermelde literatuur

"O" niet-schriftelijke stand van de techniek

"P" tussen de voorrangsdatum en de indieningsdatum gepubliceerde literatuur

"T" na de indieningsdatum of de voorrangsdatum gepubliceerde literatuur die niet bezwarend is voor de octrooiaanvrage, maar wordt vermeld ter verheldering van de theorie of het principe dat ten grondslag ligt aan de uitvinding

"X" de conclusie wordt als niet nieuw of niet inventief beschouwd ten opzichte van deze literatuur

"Y" de conclusie wordt als niet inventief beschouwd ten opzichte van de combinatie van deze literatuur met andere geciteerde literatuur van dezelfde categorie, waarbij de combinatie voor de vakman voor de hand liggend wordt geacht

"&" lid van dezelfde octrooifamilie of overeenkomstige octrooipublicatie

Datum waarop het onderzoek naar de stand van de techniek van internationaal type werd voltooid	Verzenddatum van het rapport van het onderzoek naar de stand van de techniek van internationaal type
27 mei 2021	

Naam en adres van de instantie	De bevoegde ambtenaar
European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016	Bruinsma, Maarten

Formulier PCT/ISA/201 (tweede blad) (Januari 2004)

ONDERZOEKSRAPPORT BETREFFENDE HET RESULTAAT VAN HET ONDERZOEK NAAR DE STAND VAN DE TECHNIEK VAN HET INTERNATIONALE TYPE

Informatie over leden van dezelfde octrooifamilie

Nummer van het verzoek om een onderzoek naar de stand van de techniek
NL 1043806

In het rapport genoemd octrooigeschrift	Datum van publicatie	Overeenkomend(e) geschrift(en)	Datum van publicatie
EP 1614997 A1	11-01-2006	EP 1614997 A1	11-01-2006
		EP 2843369 A1	04-03-2015
		EP 3309517 A1	18-04-2018
		ES 2534311 T3	21-04-2015
		JP 5351371 B2	27-11-2013
		JP 2006017739 A	19-01-2006
		US 2006004512 A1	05-01-2006
		US 2009037103 A1	05-02-2009
		US 2010332299 A1	30-12-2010
		US 2011173067 A1	14-07-2011
WO 2012035191 A1	22-03-2012	EP 2616909 A1	24-07-2013
		WO 2012035191 A1	22-03-2012
US 2006253226 A1	09-11-2006	US 9204251 B1	01-12-2015
		US 9204257 B1	01-12-2015
		US 9491584 B1	08-11-2016
		US 9602193 B1	21-03-2017
		US 2006253226 A1	09-11-2006
		US 2014213176 A1	31-07-2014
EP 2116811 A2	11-11-2009	DE 102008023040 A1	26-11-2009
		EP 2116811 A2	11-11-2009
		JP 4994420 B2	08-08-2012
		JP 2009269604 A	19-11-2009
		PL 2116811 T3	31-12-2015
		US 2009281684 A1	12-11-2009

WRITTEN OPINION

File No.	Filing date *(day/month/year)*	Priority date *(day/month/year)*	Application No.
SN78015	05.10.2020		NL1043806

International Patent Classification (IPC)
INV. G01C21/20 A61H3/06

Applicant
Atsence B.V.

This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☒ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☐ Box No. V Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the application
- ☐ Box No. VIII Certain observations on the application

	Examiner
	Bruinsma, Maarten

Application number

WRITTEN OPINION

NL1043806

Box No. I Basis of this opinion

1. This opinion has been established on the basis of the latest set of claims filed before the start of the search.

2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the application and necessary to the claimed invention, this opinion has been established on the basis of:

   a. type of material:

   ☐ a sequence listing

   ☐ table(s) related to the sequence listing

   b. format of material:

   ☐ on paper

   ☐ in electronic form

   c. time of filing/furnishing:

   ☐ contained in the application as filed.

   ☐ filed together with the application in electronic form.

   ☐ furnished subsequently for the purposes of search.

3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

4. Additional comments:

WRITTEN OPINION

Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

The questions whether the claimed invention appears to be novel, to involve an inventive step, or to be industrially applicable have not been examined in respect of

☒ the entire application

☐ claims Nos.

because:

☐ the said application, or the said claims Nos. relate to the following subject matter which does not require a search *(specify)*:

☒ the description, claims or drawings *(indicate particular elements below)* or said claims Nos. 1-3 are so unclear that no meaningful opinion could be formed *(specify)*:

see separate sheet

☐ the claims, or said claims Nos. are so inadequately supported by the description that no meaningful opinion could be formed *(specify)*:

☐ no search report has been established for the whole application or for said claims Nos.

☐ a meaningful opinion could not be formed as the sequence listing was either not available, or was not furnished in the international format (WIPO ST25).

☐ a meaningful opinion could not be formed without the tables related to the sequence listings; or such tables were not available in electronic form.

☒ See Supplemental Box for further details.

Re Item III

Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

1 Claims 1-3 are unclear to the extent that no meaningful opinion on novelty and inventive step can be established. Claims should be formulated in terms of structural features that provide technical limitations to the device or method. The claims as filed, however, merely define the problem to be solved (changing complexity, an intuitive user experience), rather than defining the invention by the technical features necessary for achieving this result. It is clear that the claims thus fail to include the features that are essential for the definition of the invention. While the search has been performed on the basis of the concrete embodiment described in the description, it is not possible to provide a meaningful comparison between the claims as filed and the available prior art.