


## Nøkkelinformasjon

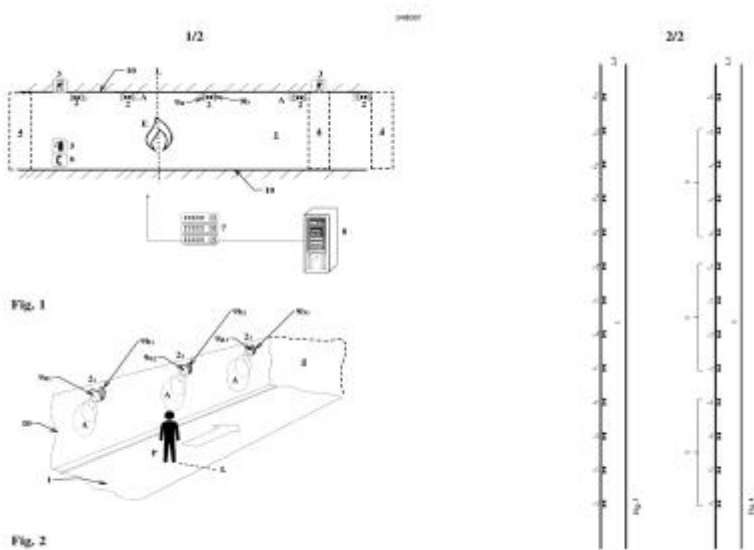
<i>Saken / databasen er sist oppdatert</i>	2024.11.09 14:05:00
Tittel	<b>An auditory guidance method and system</b>
Status	I kraft
Hovedstatus	2024.08.12 Meddelt
Detaljstatus	2024.08.06 Patent meddelt (B1)
Patentnummer	348081
Søknadsnummer	20220217
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Løpedag	2022.02.16
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Allment tilgjengelig	2023.08.17
Meddelt	2024.08.12
Søker	Norphonic AS (NO)
Innehaver	Norphonic AS (NO)
Oppfinner	Eugene Zaikonnikov (NO) .... se mer/flere nedenfor
Fullmektig	ZACCO NORWAY AS (NO)
Patentfamilie	Se i Espacenet

## Sammendrag og figur

 Patent Translation picture

An auditory guidance system and method for use along a pathway (1) between an initial location (L) and a target location (4). A plurality of nodes (21-n) are arranged at intervals along the pathway and are activated in a sequence from the initial location and towards the target location. Each node comprises a directional sound generator (9a1-n) which is configured to emit a sound pulse (A) towards the initial location (L), in a sequence from the directional sound generator (9a1) in the first node (21) to the directional sound generator (9an) in the last node (2n), each sound pulse emission being interrupted by a time interval ( $\Delta t$ ). The system and method may be used for evacuating individuals from a tunnel or other confined space.

Se forsidefigur og sammendrag i Espacenet



B1

### Beskrivelse

An auditory guidance method and system

Technical field of the invention

The invention concerns an auditory guidance method and a system for executing such method, as set out by the preambles of claims 11 and 1 respectively.

Background of the invention

Public announcement (PA) systems for tunnels, corridors and other long and narrow rooms or passages, whether they are in buildings, below ground, on ships or part of any other type of structure, are fraught with problems related in particular to reverberation, echo, and interference between loudspeakers that are mounted at a distance from each other. These problems may become critical in emergencies where correct receipt and interpretation of information is essential in order to inform and guide people who are evacuating for example a tunnel. However, the problems are also relevant to situations that are not critical.

Currently, information helping people navigate in long corridors rely heavily on visual aids such as signs, arrows, and markings on the floor. Visual aid solutions are numerous, but they have the disadvantage of poor performance in low visibility and smoke. Audio is under-utilized. Auditory assistance systems do exist but are basic PA systems with only minor adaptations to the specific challenges associated with long tunnels and corridors.

### Krav

Claims 1. An auditory guidance system for installation along a pathway (1) between an initial location (L) and a target location (3, 4), comprising a plurality of nodes ( $2_{1-n}$ ) arranged at intervals along the pathway, wherein a first node ( $2_1$ ) is the closer node to the initial location (L) and a last node ( $2_n$ ) is the closer node to the target location (3, 4), characterized in that- each node ( $2_{1-n}$ ) comprises one or more directional sound generator (9a,b) which is configured to emit a sound pulse (A) towards the initial location (L), in a sequence from the directional sound generator ( $9a_1$ ) in the first node ( $2_1$ ) to the directional sound generator ( $9a_n$ ) in the last node ( $2_n$ ), each sound pulse emission being interrupted by a constant time interval ( $\Delta t$ ), and- each node is configured to emit sound in a predetermined direction, and the sound generators (9a,b) within each node are pointing in opposite directions along the pathway (1). 2. The system of claim 1, wherein the directional sound generators (9a,b) are loudspeakers with small apertures arranged into an array. 3. The system of any one of claims 1-2, wherein each sound generator (9a,b) in each node ( $2_{1-n}$ ) is configured and controlled via a control system (8) to emit a sound pulse (A) with predefined characteristics. 4. The system of claim 3, wherein said characteristics comprise duration ( $t_A$ ), pitch, volume. 5. The system of claim 3 or claim 4, wherein said sound pulses comprises bell chimes or sound of footsteps on pavement. 6. The system of any one of claims 3-5, wherein the system is configured to emit the same sound pulse from all the nodes. 7. The system of any one of claims 1-6, wherein the nodes are configured to be activated in a sequence, from the initial location (L) and towards the target location (4). 8. The system of any one of claims 1-7, wherein sound generators (9a,b) in each node are controlled to emit the same sound pulse at the same time or to emit sound pulses in a desired sequence 9. The

Hva betyr A1, B, B1, C osv?

## Klasser

IPC-klasse

**G08B 3/10**

**G08B 7/06**

**A62B 3/00**

**H04R 27/00**

**E21F 17/00**

**G08B 21/02**

CPC-klasse

**G08B 3/10**

**G08B 7/06**

**G08B 7/062**

**G08B 7/066**

**A62B 3/00**

**H04R 27/00**

**E21F 17/00**

**G08B 21/02**

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Org.nummer: 982702887

Din referanse: P437380NO00

## Anførte dokumenter

US 20070279242 A1 (A1)

WIJNGAARDEN et al. Auditory Evacuation Beacons, L. Audio Eng. Soc., Vol. 53, No. 1/2, pages 44-63, 2005 January/February ()

IT MI20131421 A1 (A1)

TRONSTAD et al. Sound signals to improve evacuation in road tunnels, Fire Safety Journal 125 (2021) 103431 ()

EP 3629604 A1 (A1)

## Sakshistorikk

### Statushistorie

Hovedstatus	Beslutningsdato, detaljstatus
2024.08.12 Meddelt	2024.08.06 Patent meddelt (B1)
2022.02.16 Under behandling	2024.05.29 Godkjent til meddelelse
2022.02.16 Under behandling	2024.05.13 Andre og senere realitetsskriv foreligger
2022.02.16 Under behandling	2023.05.04 Andre og senere realitetsskriv foreligger
2022.02.16 Under behandling	2022.08.11 Første realitetsuttalelse foreligger
2022.02.16 Under behandling	2022.04.01 Formaliakontroll utført
2022.02.16 Under behandling	2022.02.18 Formaliakontroll utført
2022.02.16 Under behandling	2022.02.18 Mottatt

### Korrespondanse

Dato	Type korrespondanse	Journal beskrivelse
2024.08.16	Utgående	PT Registreringsbrev nasjonal patent (15) (PT20220217)
2024.05.29	Utgående	Intention to grant
2024.05.27	Innkommende	Korrespondanse (Hovedbrev inn)
2024.05.13	Utgående	Substantive examination
2024.01.04	Utgående	PT Varsel om betaling av første årsavgift (3317) (PT20220217)
2023.08.24	Innkommende, AR565842460	Korrespondanse (Hovedbrev inn)
2023.08.02	Utgående	PT Bekreftelse på fristutsettelse
2023.05.04	Utgående	Substantive examination
2023.02.13	Innkommende	Korrespondanse (Hovedbrev inn)
2022.12.30	Innkommende, AR526714605	Korrespondanse (Hovedbrev inn)
2022.08.11	Utgående	Realitet patent
2022.04.01	Utgående	Informasjon til oppfinner
2022.03.31	Innkommende, AR482952817	Korrespondanse (Hovedbrev inn)
2022.02.18	Utgående	Formalia 1

2022.02.16

Innkommende, AR475736414

Søknadsskjema Patent

## Informasjon om ikke tilgjengelige dokumenter

## Betaling

## Til betaling:

Beskrivelse	Forfallsdato	Beløp	Status
Årsavgift	2025.02.28		Ikke betalt
Årsavgift 4. avg.år.		1760,0	
Totalbeløp		1760,0	

## Betalingshistorikk:

Beskrivelse / Fakturanummer	Betalingsdato	Beløp	Betaler	Status
32407075	2024.07.24	3250	ZACCO NORWAY AS	Betalt
Årsavgift 1. tom 3. avg.år.	2024.01.30	2100	ZACCO NORWAY AS	Betalt og godkjent
32202876	2022.02.23	850	ZACCO NORWAY AS	Betalt

Denne oversikten kan mangle informasjon, spesielt for eldre saker, om tilbakebetaling, internasjonale varemerker og internasjonale design.

## Publikasjon(er)

Lenker til publikasjoner og Norsk Patenttidende (søkbare tekstdokumenter)

Siste publiserte versjon av patent

Allment tilgjengelig patentsøknad

Norsk Patenttidende - ved meddelelse

Nye digitale Norske Tidende, nyhet om tjenesten ved lansering

Om Norske Tidende

Lenker til publikasjoner (ikke søkbare tekstdokumenter)

**B1**

**A1**

Hva betyr A1, B, B1, C osv?

Kapitler uten data er fjernet.

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