

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
02 March 2023 (02.03.2023)



(10) International Publication Number
WO 2023/026101 A1

(51) International Patent Classification:
H04B 11/00 (2006.01) **H04B 13/02** (2006.01)

(21) International Application Number:
PCT/IB2022/020062

(22) International Filing Date:
26 August 2022 (26.08.2022)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
102021000022481 27 August 2021 (27.08.2021) IT

(71) Applicant: **SEASPLIT** [EG/EG]; 25 Naguib Mahfouz,
First 6th of October, 12556 Al Jizah (EG).

(72) Inventors: **MESHARAF, Hussein**; 84 Gardenia Park,
6th of October, Giza (EG). **HALLOUDA, Aya**; 415 za-

yed 2000, Sheikh Zayed, Giza (EG). **HABIB, Ibrahim**; 184
Street Tiba, Cleopatra, Alexandria (EG).

(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, CV, CZ, DE, DJ, DK, DM,
DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT,
HN, HR, HU, ID, IL, IN, IQ, IR, IS, IT, JM, 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,

(54) Title: WIRELESS COMMUNICATION METHOD FOR AN UNDERWATER VEHICLE AND ASSOCIATED UNDERWATER SYSTEM

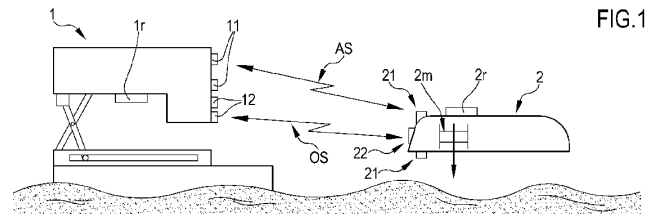


FIG. 1

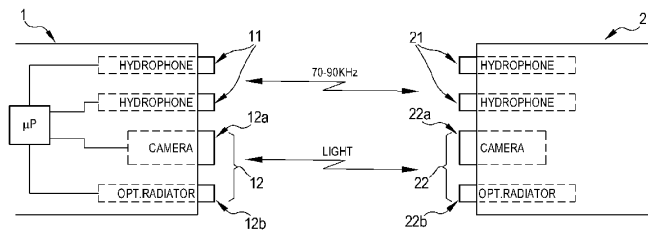


FIG. 2

(57) Abstract: The present disclosure relates to a wireless communication method, comprising: - providing a base station (1) for an underwater vehicle (2) with at least a first hydrophone (11), - providing an underwater vehicle (2), configured to be operatively coupled with the base station (1), with at least a second hydrophone (21), - adapting and/or configuring the first hydrophone (11) and the second hydrophone (21) in order to allow a transmission and reception of ultrasonic and/or acoustic signals (AS), - providing the base station (1) with at least a first optical communication device (12), and providing the underwater vehicle (2) with at least a second optical communication device (22), the first optical communication device (12) and the second optical communication device (22) comprising an optical transmitter and/or an optical receiver, the provision allowing setting up a signal transceiving between the base station (1) and the underwater vehicle (2), - a step of transmission of at least one ultrasonic and/or acoustic signal (AS) by means of at least one

[Continued on next page]

UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, 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))*

between the first hydrophone (11) and the second hydrophone (21), and/or - a step of transmission of at least one optical signal (OS) by means of at least one between the first optical communication device (12) and the second optical communication device (22).