

(51) International Patent Classification:
B63B 35/44 (2006.01) **B63B 1/02** (2006.01)(21) International Application Number:
PCT/NL2011/050494(22) International Filing Date:
7 July 2011 (07.07.2011)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
2005058 8 July 2010 (08.07.2010) NL
2005897 22 December 2010 (22.12.2010) NL
2006095 28 January 2011 (28.01.2011) NL(71) Applicant (for all designated States except US): **ITREC B.V.** [NL/NL]; Admiraal Trompstraat 2, NL-3115 HH Schiedam (NL).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **ROODENBURG, Joop** [NL/NL]; 7, St. Eustatiusstraat, NL-2612 HA Delft (NL). **BRINKMAN, Marc Louis** [NL/NL]; 7, Drukkerijlaan, NL-2627 CN Delft (NL). **BEREZNITSKI, Alexei** [NL/NL]; 650, van Hasseltlaan, NL-2625 JP Delft (NL).(74) Agent: **VAN DER VELDEN, M.**; P.O. Box 3241, NL-2280 GE Rijswijk (NL).

(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, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PE, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

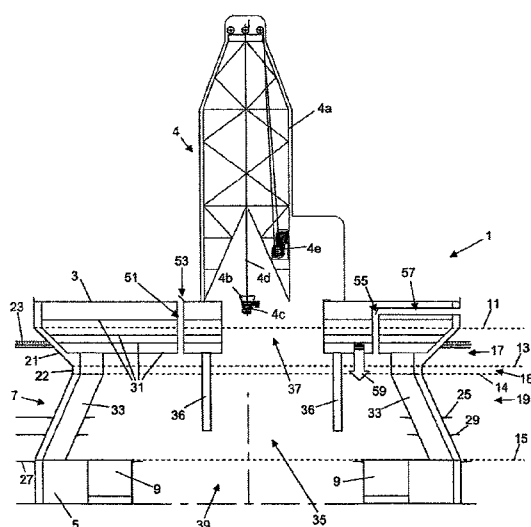
(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, 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, ML, MR, NE, SN, TD, TG).

Published:

- with international search report (Art. 21(3))
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))

(54) Title: SEMI-SUBMERSIBLE VESSEL AND OPERATING METHOD

FIG 1



(57) Abstract: The invention relates to a semi-submersible vessel for offshore operations which is suitable to be operated in icy waters and in ice-free waters, said vessel comprising: -an operating deck to accommodate equipment; -at least one lower hull; -an essentially vertical connecting structure between the at least one lower hull and the operating deck; -a ballast system to ballast or deballast the vessel; wherein the connecting structure has a water portion and an icebreaking portion being arranged on top of each other, wherein the vessel is configured to have an icebreaking draft for icy waters in which the water- or ice-line is substantially level with the icebreaking portion, and a water draft for ice-free waters in which the waterline is substantially level with the water portion, wherein the icebreaking portion has a closed tapered contour, and wherein during the water draft the collective area of the water portion of the connecting structure intersecting the water surface is smaller than the collective area of the icebreaking portion of the connecting structure intersecting the water surface during the icebreaking draft.