



(51) International Patent Classification:
G06F 16/182 (2019.01) *H04L 12/26* (2006.01)

(21) International Application Number:
PCT/US2022/012900

(22) International Filing Date:
19 January 2022 (19.01.2022)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
63/140,849 23 January 2021 (23.01.2021) US
63/282,042 22 November 2021 (22.11.2021) US
17/578,432 18 January 2022 (18.01.2022) US

(71) Applicant: **DIDO SOLUTIONS, INC.** [US/US]; 13943 Jackrabbit Road, Poway, CA 92064 (US).

(72) Inventors: **STAVROS, Robert**; c/o DIDO Solutions, Inc., 13943 Jackrabbit Road, Poway, CA 92064 (US). **TUREK,**

Bryan; c/o DIDO Solutions, Inc., 13943 Jackrabbit Road, Poway, CA 92064 (US). **STAVROS, Ian**; c/o DIDO Solutions, Inc., 13943 Jackrabbit Road, Poway, CA 92064 (US).

(74) Agent: **SMYTH, Anthony, G.**; Loza & Loza, LLP, 305 N. Second Ave., #127, Upland, CA 91786 (US).

(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, IT, 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,

(54) Title: DISTRIBUTED IMMUTABLE DATA OBJECT TESTING

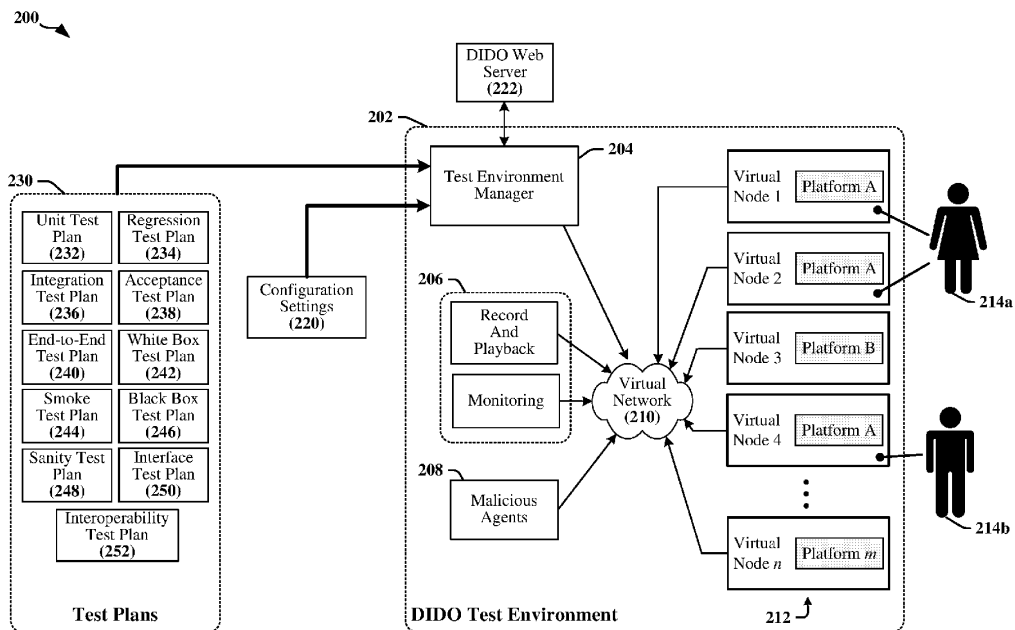


FIG. 2

(57) Abstract: Systems, methods and apparatus for managing a distributed environment are disclosed. A method for testing nodes in a distributed system includes configuring a plurality of virtual nodes to emulate a distributed system that is used to process and manage distributed immutable data objects, initiating a test of the emulated distributed system, the test including performing one or more transactions on a first distributed immutable data object to obtain a modified first distributed immutable data object; and verifying the emulated distributed system by comparing the modified first distributed immutable data object with a second distributed immutable data object that has been processed in a validated system.

[Continued on next page]

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, 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).

Declarations under Rule 4.17:

— *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))*

Published:

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