

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

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
22 May 2020 (22.05.2020)



(10) International Publication Number
WO 2020/099919 A1

(51) International Patent Classification:
G01S 5/10 (2006.01) G08G 5/00 (2006.01)

(21) International Application Number:
PCT/IB2018/060432

(22) International Filing Date:
20 December 2018 (20.12.2018)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
P1800386 16 November 2018 (16.11.2018) HU
P1800427 13 December 2018 (13.12.2018) HU

(71) Applicant: HUNGAROCONTROL ZRT. [HU/HU]; Iglo
utca 33-35., 1185 Budapest (HU).

(72) Inventor: BLAZSOVSZKY, György; Vörösmarty utca 1.,
8097 Nadap (HU).

(74) Agent: PINTZ, Gyorgy; Pintz & Partners LLC, Pf. 245,
1444 Budapest (HU).

(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, 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, SM, ST, SV, SY, TH, TJ, TM, TN,
TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(54) Title: PROCEDURE OF DETERMINING AIRCRAFT POSITION AND ARRANGEMENT FOR CARRYING OUT THE PRO-
CEDURE

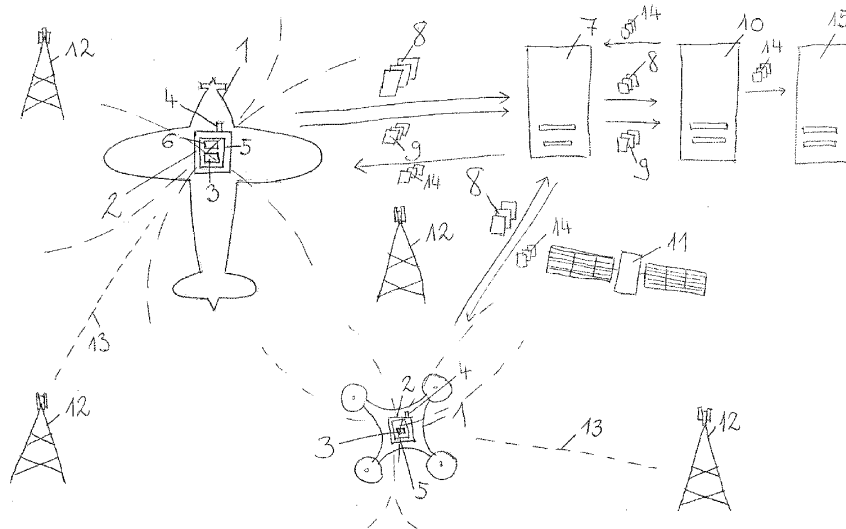


Fig. 1

(57) Abstract: The subject of the invention is a procedure for the positioning of aircraft, during which an airspace user initiates using of a service provided by an air traffic manager and sends identifying data to the air traffic manager, the air traffic manager registers the aircraft identifier, carries out standalone positioning. It is characterized in that as identifier the IMSI number of a code card (3) connected to a switched on on-board device (2) and placed on board the aircraft (1) is used, the airspace user logs in to a cellular network (13) contracted by the air traffic manager, time stamps emitted by at least three, but optimally four to six cellular base stations are recorded, then observed time difference of arrival data (8) proportionate to the distance from cellular base stations (12) are calculated, the observed time difference of arrival data (8) are sent through the cellular network (13) to a location based server (7), and via the location based server (7) to an air traffic management system (10) and then, coupling in real time the observed time difference of

[Continued on next page]

(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, 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))*

arrival data (8) with further independent surveillance data the location based server (7) and/or the air traffic management system (10) determines the position of the given aircraft (1), position vector data (14) is created, then the position vector data (14) is sent to the given aircraft (1), and is forwarded into at least one database (15) accessible to multiple airspace users. The subject of the invention also includes the arrangement for carrying out the procedure.