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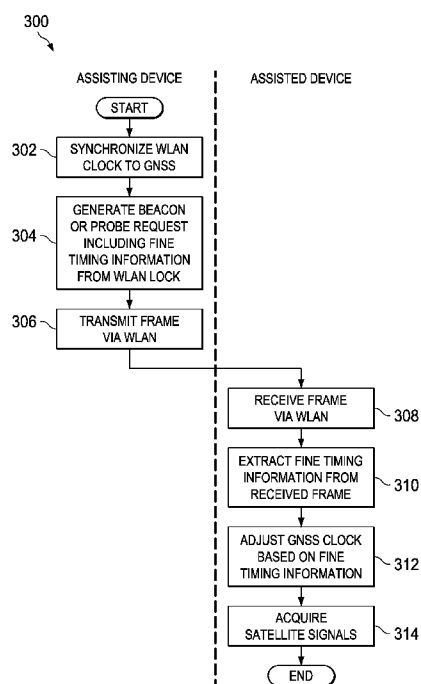
(54) **Title:** FINE TIME ASSISTANCE FOR GLOBAL NAVIGATION SATELLITE SYSTEMS

FIG. 3

(57) **Abstract:** Apparatus and methods are disclosed for providing fine timing assistance to global navigation satellite systems (GNSS) via wireless local area network (WLAN). In one embodiment, a method (300) for synchronizing a global navigation satellite system (GNSS) receiver includes receiving (308), by a wireless device, via a wireless local area network (WLAN), fine time assistance information transmitted by an assisting device connected to the WLAN. A time value of a GNSS clock of the wireless device is adjusted (312) based on the fine time assistance information. Based on the adjusted time value, GNSS codes of a GNSS positioning signal are acquired (314) by the wireless device.



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

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Declarations under Rule 4.17:

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

- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))

Published:

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— 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))
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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2012/028824**A. CLASSIFICATION OF SUBJECT MATTER****G04G 7/02(2006.01)i, H04W 56/00(2009.01)i**

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

G04G 7/02; G01S 19/24; G01S 1/00; H04W 24/08

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Korean utility models and applications for utility models

Japanese utility models and applications for utility models

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

eKOMPASS(KIPO internal) & Keywords: GNSS(Global Navigation Satellite System), GPS, WLAN(Wireless Local Area Network), clock, GNSS receiver, WLAN transceiver, fine time assistance, assisting device, synchronization

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2010-0073229 A1 (PATTABIRAMAN GANESH et al.) 25 March 2010 See paragraphs [0047], [0100], [0103], [0106], claims 1-2, and figures 1-11.	1-10
A	US 2009-0258658 A1 (EDGE STEPHEN W. et al.) 15 October 2009 See paragraphs [0012], [0045], claim 1, and figures 1-2.	1-10
A	US 2009-0322601 A1 (LADD JONATHAN et al.) 31 December 2009 See paragraphs [0016], [0020], [0034], claims 1, 11-12, and figures 1-2.	1-10

☐ Further documents are listed in the continuation of Box C.☒ See patent family annex.

* Special categories of cited documents:

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"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

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INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/US2012/028824

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