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(71) Applicant *(for all designated States except US)*: **QUALCOMM INCORPORATED** [US/US]; Attn: INTERNATIONAL IP ADMINISTRATION, 5775 Morehouse Drive, San Diego, California 92121 (US).

(72) Inventor; and

(75) Inventor/Applicant *(for US only)*: **PON, Rayman Wai** [US/US]; 5775 Morehouse Drive, San Diego, California 92121 (US).

(74) Agent: **MAYS, Andrea, L.**; ATTN: INTERNATIONAL IP ADMINISTRATION, 5775 Morehouse Drive, San Diego, Califonia 92121 (US).

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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))*

[Continued on next page]

(54) **Title**: SATELLITE TIME DETERMINATION FOR SPS RECEIVER

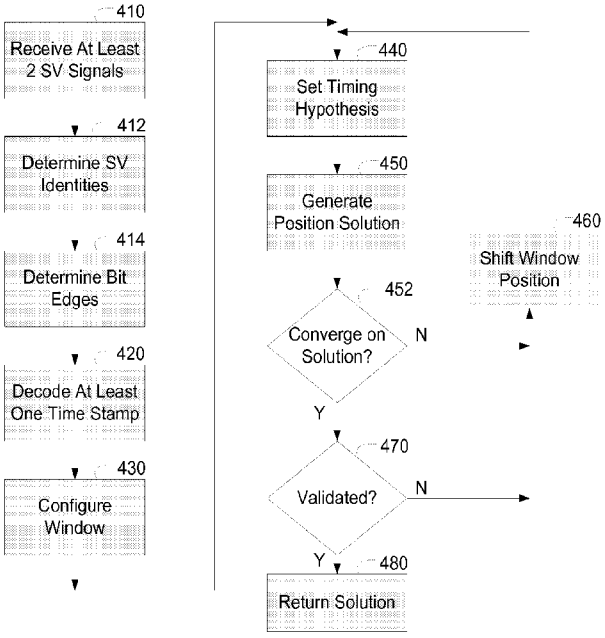


Figure 4

(57) **Abstract**: Methods and apparatus for improving position location performance, especially in weak coverage areas, are described herein. A SPS receiver is able to solve for position location in situations where at least two satellite signals can be received but only one time stamp can be successfully demodulated. The receiver can utilize the successfully decoded time reference to determine a time associated with bit edge transitions for signals from that satellite. The receiver utilizes the bit edge transition with the known time to set the time for at least one bit edge transition for signals from other satellites for which the time stamp is not demodulated. The receiver sets the time hypothesis to bit edge transitions occurring within a predetermined window including the bit edge transition with the known time. A position can be determined based on the time hypothesis. The time hypothesis and window placement can be modified following invalid position solutions.

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