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(54) Title (EN): LOCKLESS MEASUREMENT OF EXECUTION TIME OF CONCURRENTLY EXECUTED SEQUENCES OF COMPUTER PROGRAM INSTRUCTIONS

(54) Title (FR): MESURE SANS VERROUILLAGE DU TEMPS D'EXÉCUTION DE SÉQUENCES EXÉCUTÉES SIMULTANÉMENT D'INSTRUCTIONS DE PROGRAMME INFORMATIQUE

(57) Abstract:
(EN): A computer system supports measuring execution time of concurrent threads. A thread allocates a timing buffer in thread local storage. During execution, the thread has access to a system timer which it can sample with microsecond or better precision with a single instruction. For any sequence of instructions within the thread for which execution time is to be measured, the sequence of instructions includes an identifier, a start command, and an end command. The start command samples the system timer to obtain a start time, and stores the identifier and the start time in the timing buffer in the thread local storage. The end command samples the system timer to obtain an end time, and updates the data for the corresponding identifier in the timing buffer, to indicate an elapsed time for execution of the sequence of instructions.

(FR): Un système informatique prend en charge la mesure du temps d'exécution des fils concurrents. Un fil attribue un tampon de synchronisation dans le stockage local du fil. Pendant l'exécution, le fil a accès à un temporisateur du système qu'il peut échantillonner avec une microseconde ou une meilleure précision avec une seule instruction. Pour n'importe quelle séquence d'instructions à l'intérieur du fil pour lequel le temps d'exécution doit être mesuré, la séquence d'instructions comprend un identificateur, une commande de début et une commande de fin. La commande de démarrage échantillonne le temporisateur du système pour obtenir un temps de départ, et stocke l'identificateur et le temps de départ dans le tampon de synchronisation dans le stockage local du fil. La commande d'extrémité échantillonne le temporisateur du système pour obtenir un temps de fin, et met

à jour les données pour l'identificateur correspondant dans le tampon de synchronisation, pour indiquer un temps écoulé pour l'exécution de la séquence d'instructions.

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Declarations:

Declaration made as applicant's entitlement, as at the international filing date, to apply for and be granted a patent (Rules 4.17(ii) and 51bis.1(a)(ii)), in a case where the declaration under Rule 4.17(iv) is not appropriate
Declaration made as applicant's entitlement, as at the international filing date, to claim the priority of the earlier application, where the applicant is not the applicant who filed the earlier application or where the applicant's name has changed since the filing of the earlier application (Rules 4.17(iii) and 51bis.1(a)(iii))