

METHODS AND DEVICES FOR DEADLOCK DETECTION IN REAL-TIME GROSS SETTLEMENT SYSTEMS

ABSTRACT

Disclosed herein are methods, devices, and apparatuses, including computer programs stored on computer-readable media, for detecting deadlocks in a real-time gross settlement system. One of the methods includes: instructing a plurality of users of the real-time gross settlement system to independently calculate their respective liquidity information, and to perform joint calculations for determining an aggregated total amount receivable in the real-time gross settlement system and an aggregated total amount payable in the real-time gross settlement system; receiving calculation results of the joint calculations from the plurality of users and calculating the aggregated total amount receivable and the aggregated total amount payable based on the received calculation results; verifying correctness of the liquidity information of the plurality of users based on the aggregated total amount receivable and the aggregated total amount payable; and after the correctness of the liquidity information of the plurality of users is verified, determining whether a deadlock exists in the real-time gross settlement system.

FIG. 4