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(71) Applicant: **Amadeus S.A.S.**
06410 Biot (FR)

(72) Inventors:
• **Krasensky, Nicolas**
06800 Cagnes sur Mer (FR)

• **Seveillac, Clement**
06400 Cannes (FR)
• **Spezia, Didier**
06100 Nice (FR)
• **Dor, Pierre**
06140 Vence (FR)

(74) Representative: **Lippich, Wolfgang**
Samson & Partner
Widenmayerstrasse 5
80538 München (DE)

(54) **Method, system and computer program products for sequencing asynchronous messages in a distributed and parallel environment**

(57) The invention provides a system and a computer-implemented method of sequencing distributed asynchronous messages in a distributed and parallel system having a plurality of inbound handlers (810, 820, ..., 840) and a plurality of outbound handlers (860, 870, 880, 890), the method comprising the following steps performed with at least one data processor:
receiving in an inbound handler (810) an incoming message (801-1) with a sequence correlation value that identifies a sequence comprising the incoming message,
checking for a sequence status of said sequence in a sequence storage (800);
determining if the incoming message is the next message to be processed for maintaining the order of the messages in said sequence;
i. if the sequence status indicates that none of the outbound handler (860, 870, 880, 890) is currently processing a message for said sequence and if the incoming message is determined to be the next message to be processed for said sequence, then forwarding the incoming message to a queue storage (850) and subsequently forwarding it to an available outbound handler (860, 870, 880, 890) for processing;

if the sequence status indicates that at least one of the outbound handlers (860, 870, 880, 890) is currently processing a message of said sequence; or if the queue storage (850) already comprises a message to be processed for said sequence; or if the incoming message is determined not to be the next message to be processed for said sequence, then storing the incoming message (801-1) in a memory of an overflow storage (806) to keep for further processing.
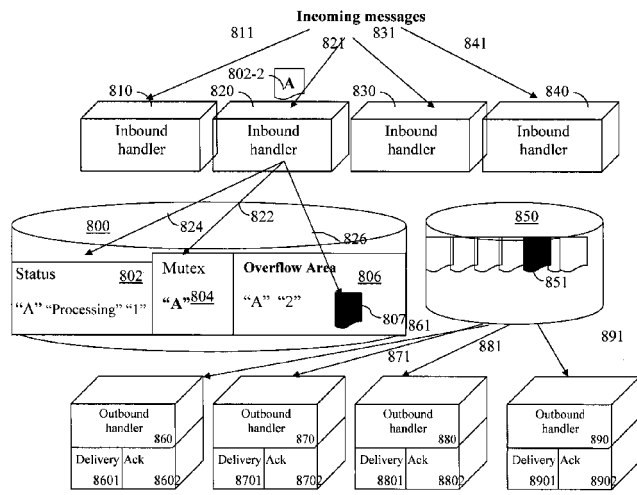
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FIGURE 8B