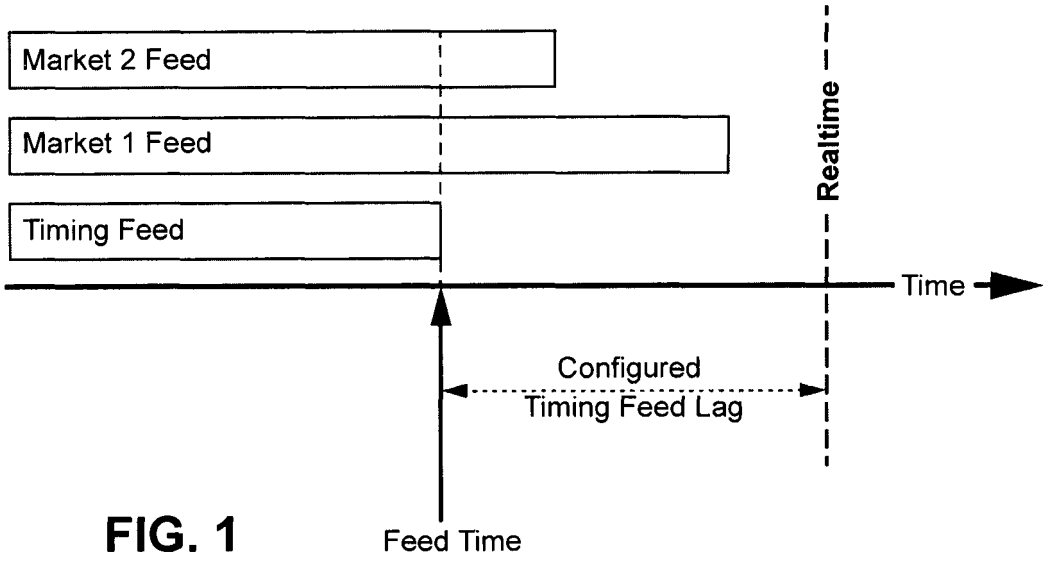

Market 2 Feed
Market 1 Feed
Timing Feed
Realtime
Time
Configured
Timing Feed Lag
Feed Time

FIG. 1

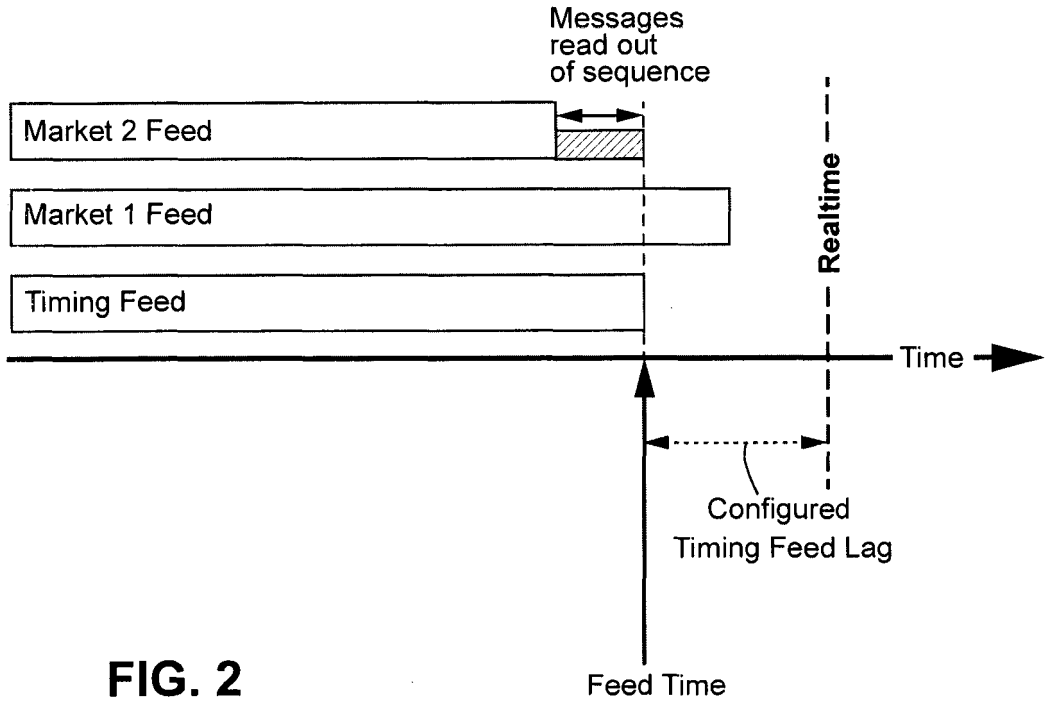

Messages
read out
of sequence
Market 2 Feed
Market 1 Feed
Timing Feed
Realtime
Time
Configured
Timing Feed Lag
Feed Time

FIG. 2

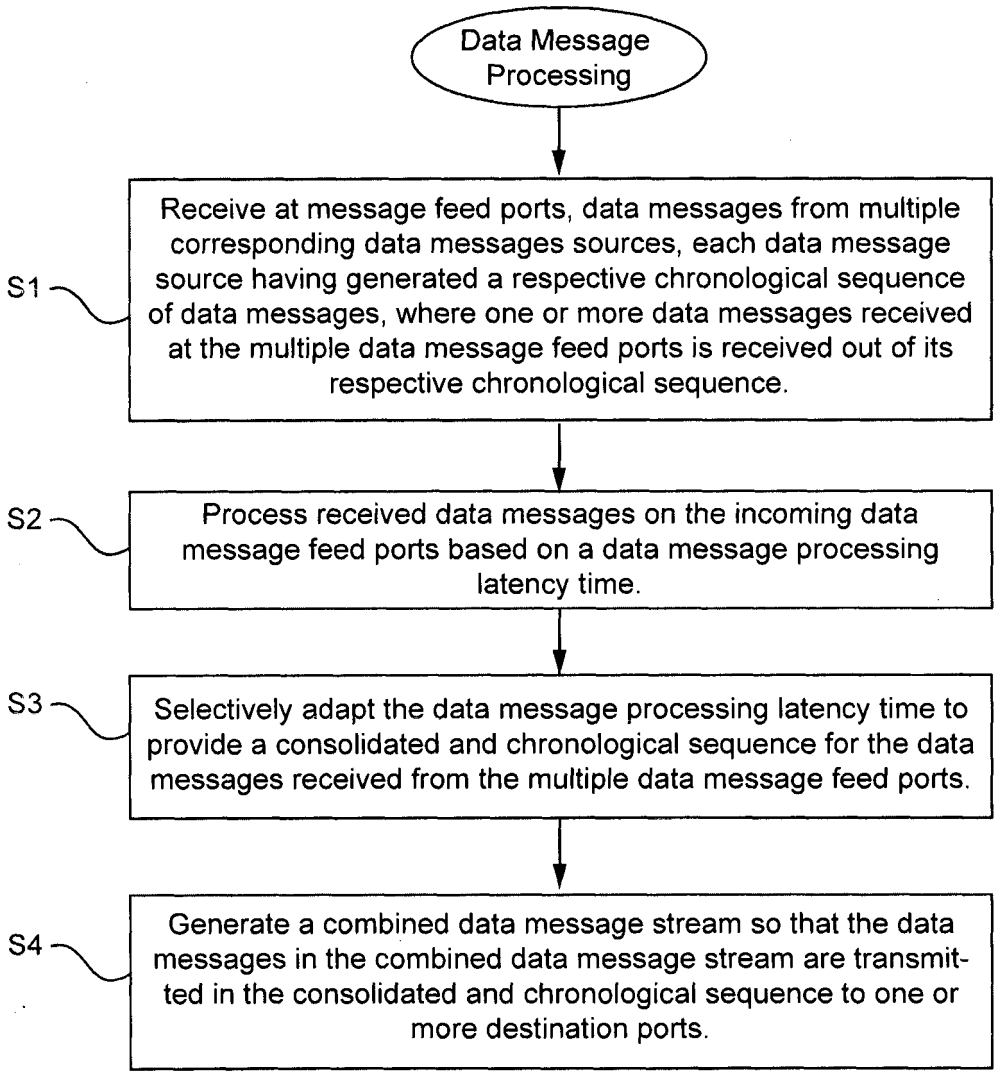

Data Message Processing
S1
Receive at message feed ports, data messages from multiple corresponding data messages sources, each data message source having generated a respective chronological sequence of data messages, where one or more data messages received at the multiple data message feed ports is received out of its respective chronological sequence.
S2
Process received data messages on the incoming data message feed ports based on a data message processing latency time.
S3
Selectively adapt the data message processing latency time to provide a consolidated and chronological sequence for the data messages received from the multiple data message feed ports.
S4
Generate a combined data message stream so that the data messages in the combined data message stream are transmitted in the consolidated and chronological sequence to one or more destination ports.

FIG. 3

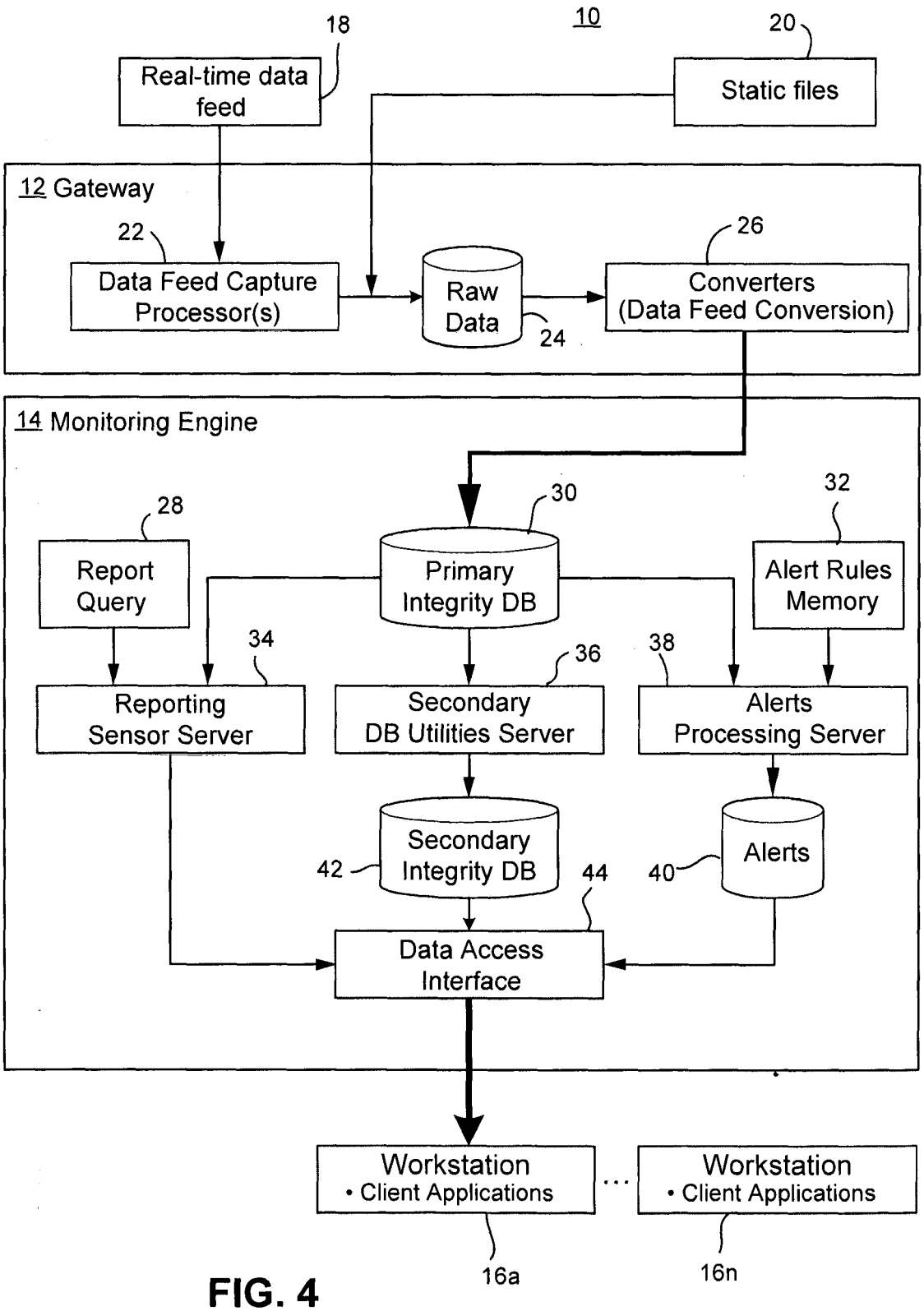

10
18
Real-time data feed
20
Static files
12 Gateway
22
Data Feed Capture Processor(s)
Raw Data
24
26
Converters (Data Feed Conversion)
14 Monitoring Engine
28
Report Query
30
Primary Integrity DB
32
Alert Rules Memory
34
Reporting Sensor Server
36
Secondary DB Utilities Server
38
Alerts Processing Server
42
Secondary Integrity DB
40
Alerts
44
Data Access Interface
Workstation
• Client Applications
Workstation
• Client Applications
16a
16n

FIG. 4

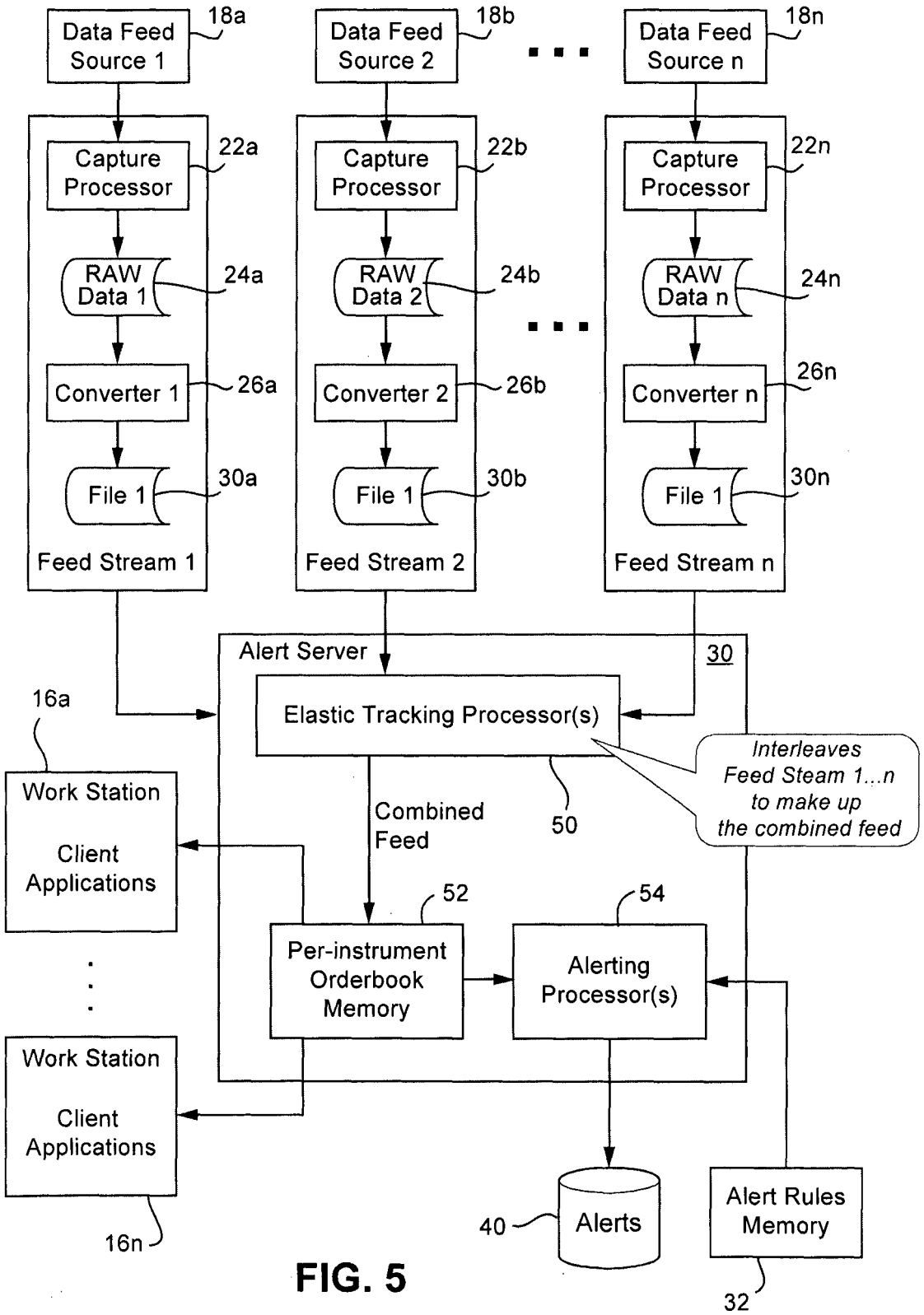

Data Feed Source 1
18a
Data Feed Source 2
18b
Data Feed Source n
18n
Capture Processor
22a
Capture Processor
22b
Capture Processor
22n
RAW Data 1
24a
RAW Data 2
24b
RAW Data n
24n
Converter 1
26a
Converter 2
26b
Converter n
26n
File 1
30a
File 1
30b
File 1
30n
Feed Stream 1
Feed Stream 2
Feed Stream n
Alert Server
30
Elastic Tracking Processor(s)
Interleaves Feed Steam 1...n to make up the combined feed
16a
Work Station
Client Applications
Combined Feed
50
52
54
Per-instrument Orderbook Memory
Alerting Processor(s)
Work Station
Client Applications
16n
40
Alerts
Alert Rules Memory
32

FIG. 5

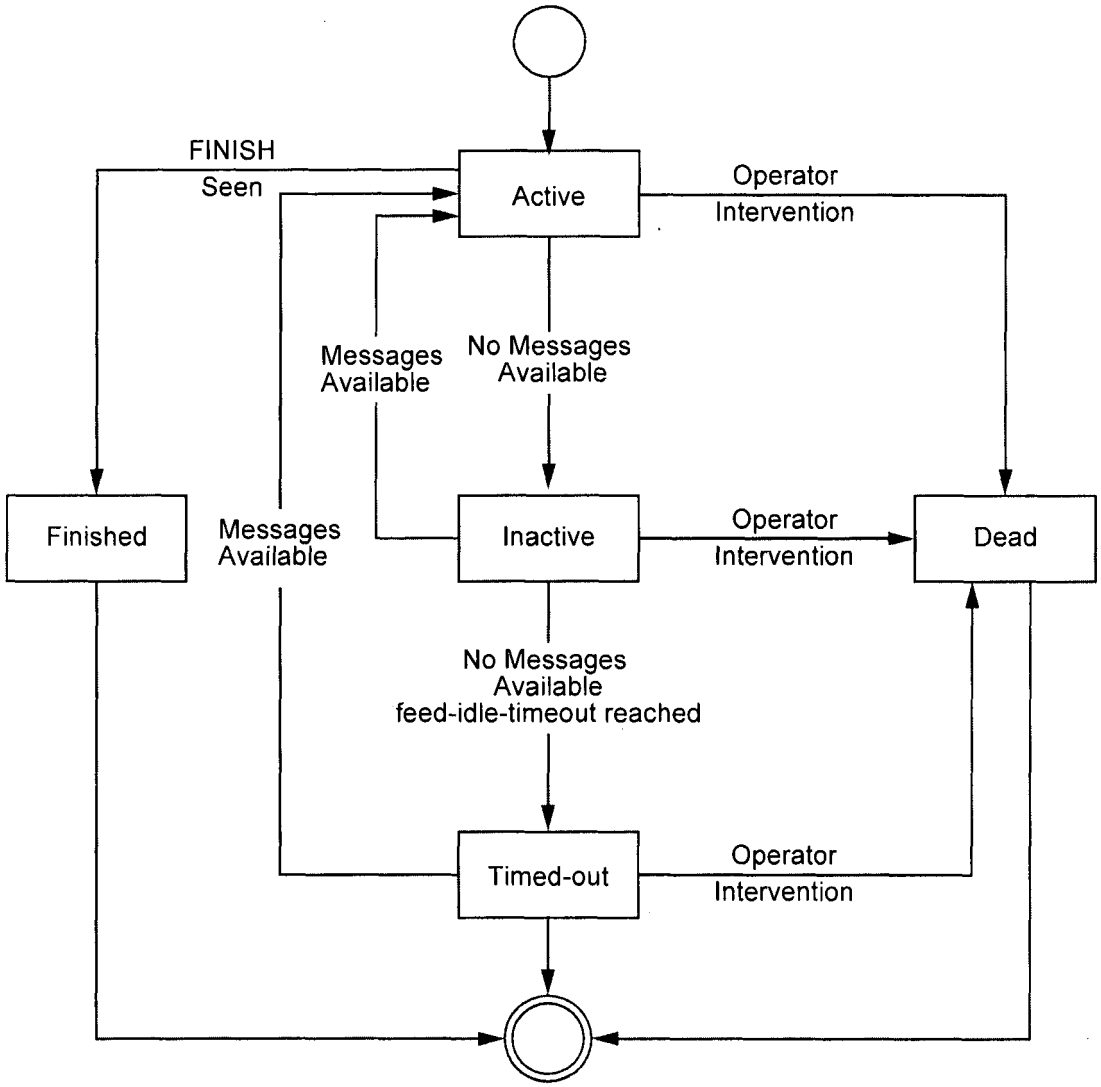

FINISH
Seen
Active
Operator
Intervention
Messages
Available
No Messages
Available
Finished
Messages
Available
Inactive
Operator
Intervention
Dead
No Messages
Available
feed-idle-timeout reached
Timed-out
Operator
Intervention

FIG. 6

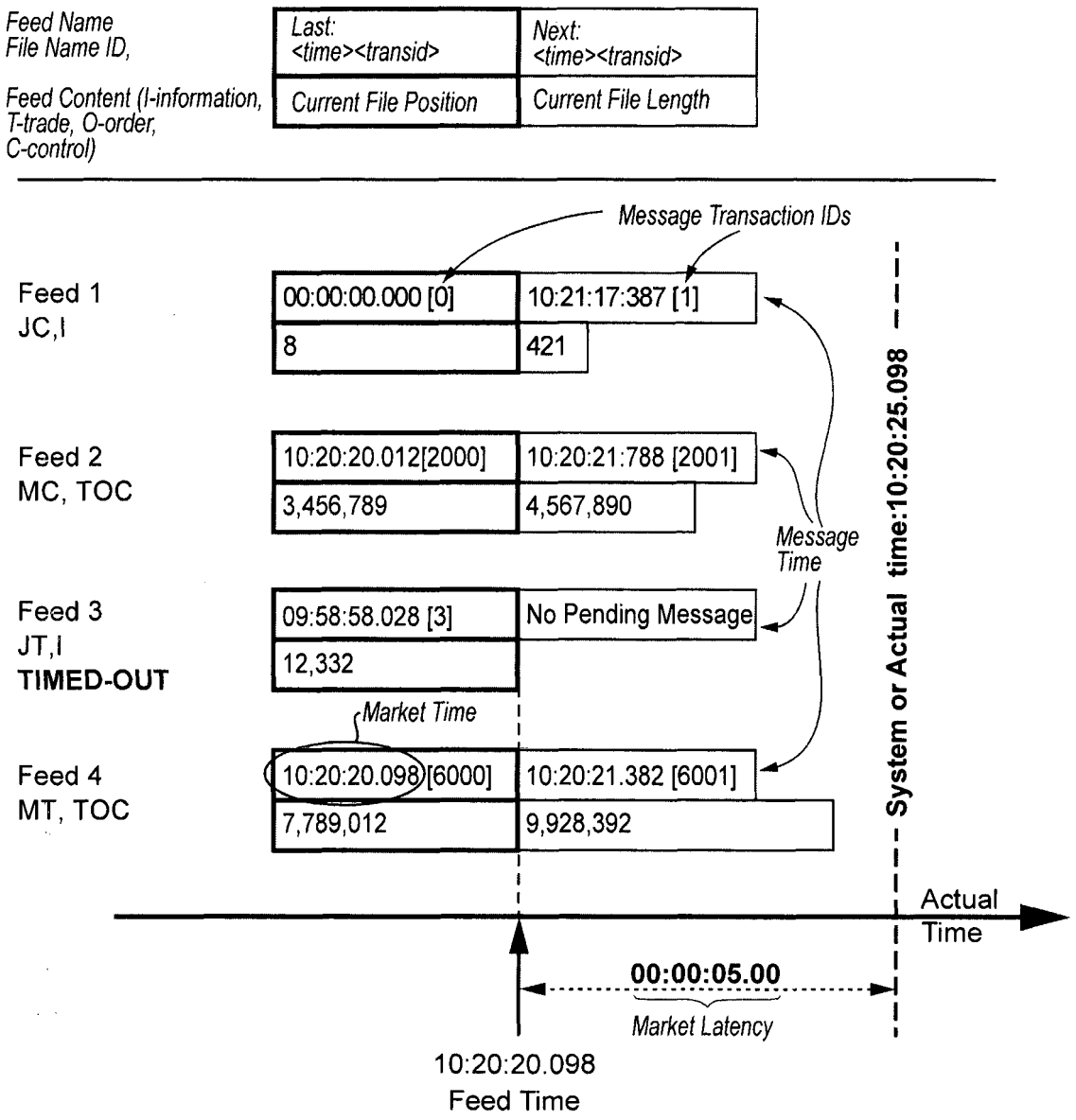

Feed Name
File Name ID,
Feed Content (I-information, T-trade, O-order, C-control)
Last: <time><transid>
Next: <time><transid>
Current File Position
Current File Length
Message Transaction IDs
Feed 1
JC,I
00:00:00.000 [0]
10:21:17:387 [1]
8
421
Feed 2
MC, TOC
10:20:20.012[2000]
10:20:21:788 [2001]
3,456,789
4,567,890
Message Time
Feed 3
JT,I
TIMED-OUT
09:58:58.028 [3]
No Pending Message
12,332
Market Time
Feed 4
MT, TOC
10:20:20.098 [6000]
10:20:21.382 [6001]
7,789,012
9,928,392
System or Actual time:10:20:25.098
Actual Time
00:00:05.00
Market Latency
10:20:20.098
Feed Time

FIG. 7

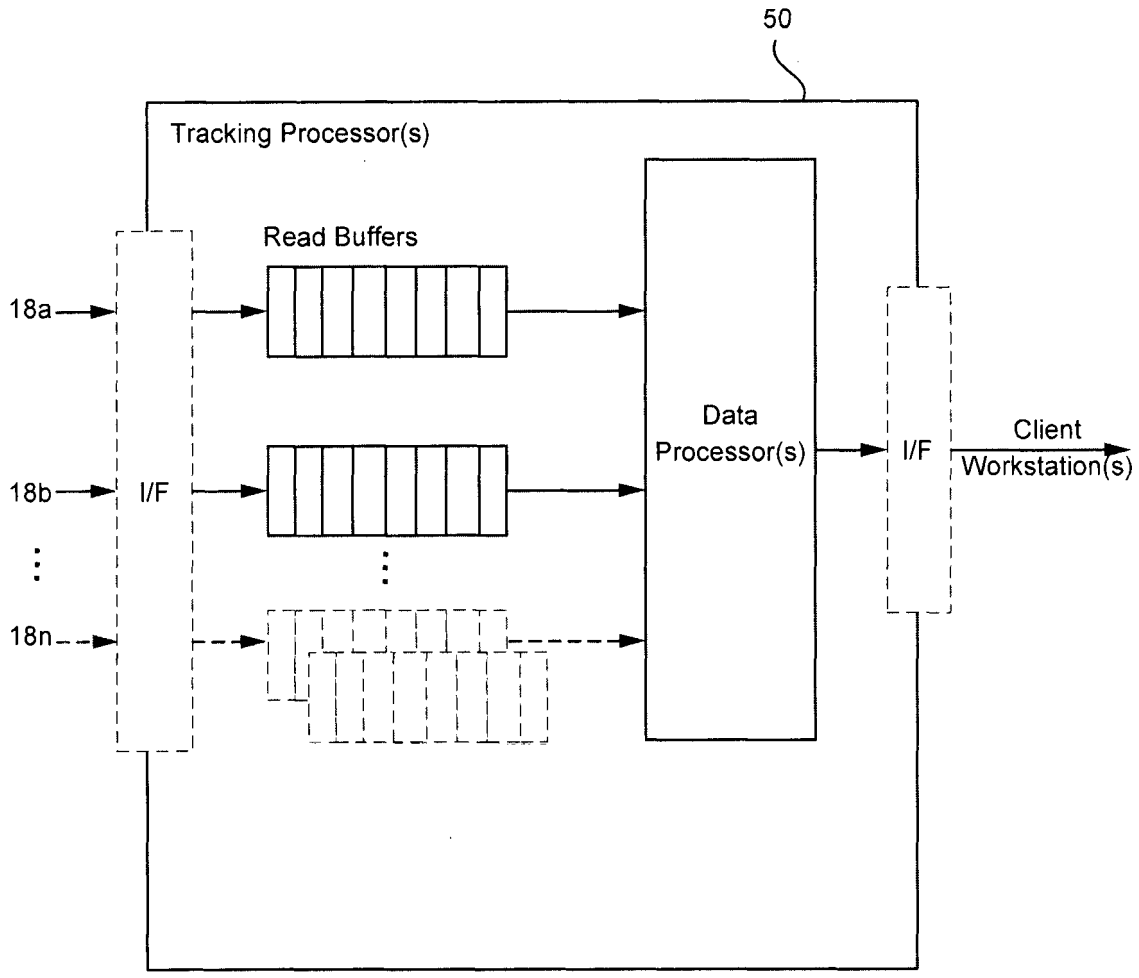

50
Tracking Processor(s)
Read Buffers
18a
18b
18n
I/F
Data
Processor(s)
I/F
Client
Workstation(s)

FIG. 8