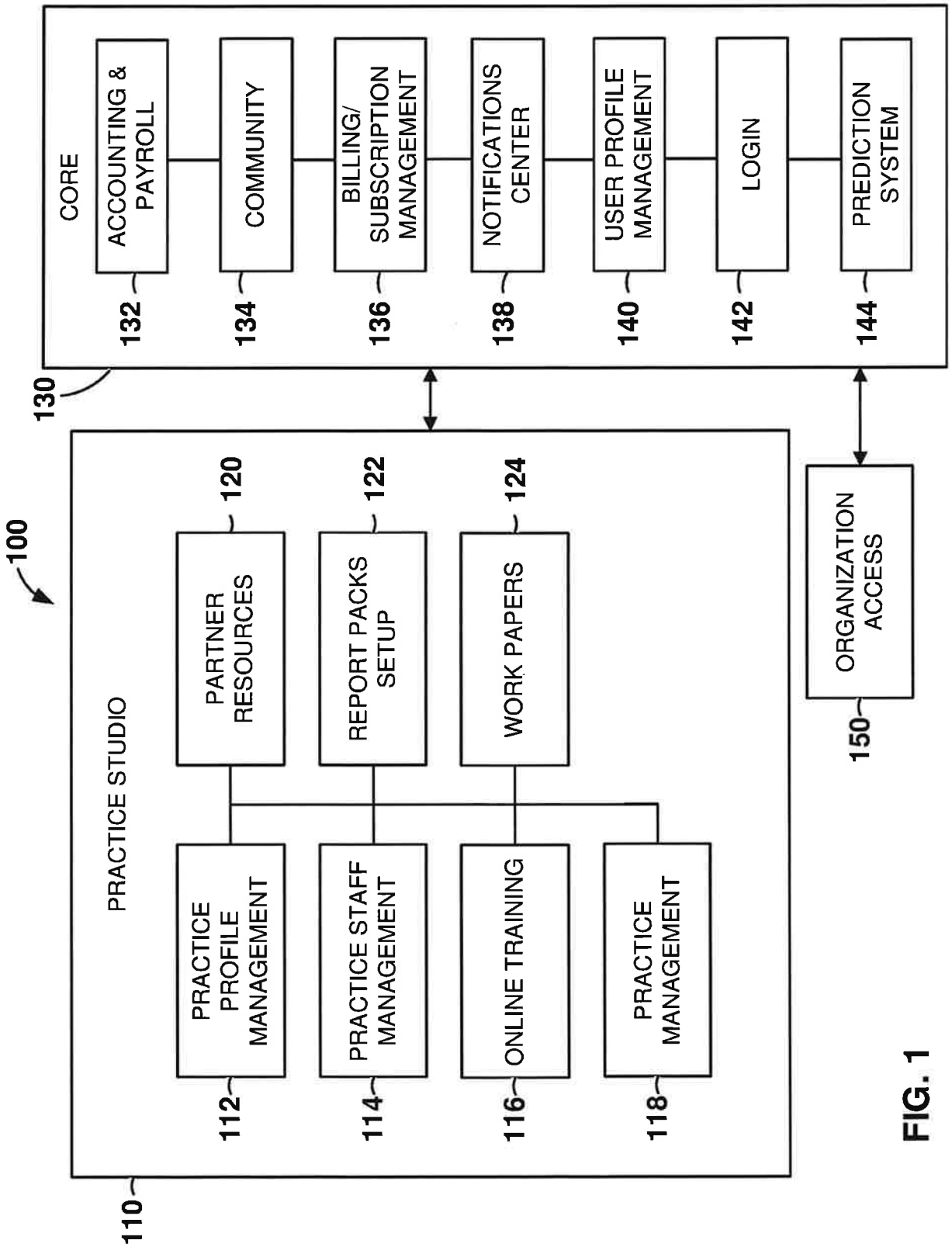

100
CORE
ACCOUNTING & PAYROLL
COMMUNITY
BILLING/ SUBSCRIPTION MANAGEMENT
NOTIFICATIONS CENTER
USER PROFILE MANAGEMENT
LOGIN
PREDICTION SYSTEM
132
134
136
138
140
142
144
130
PRACTICE STUDIO
PARTNER RESOURCES
REPORT PACKS SETUP
WORK PAPERS
120
122
124
PRACTICE PROFILE MANAGEMENT
PRACTICE STAFF MANAGEMENT
ONLINE TRAINING
PRACTICE MANAGEMENT
112
114
116
118
110
ORGANIZATION ACCESS
150

FIG. 1

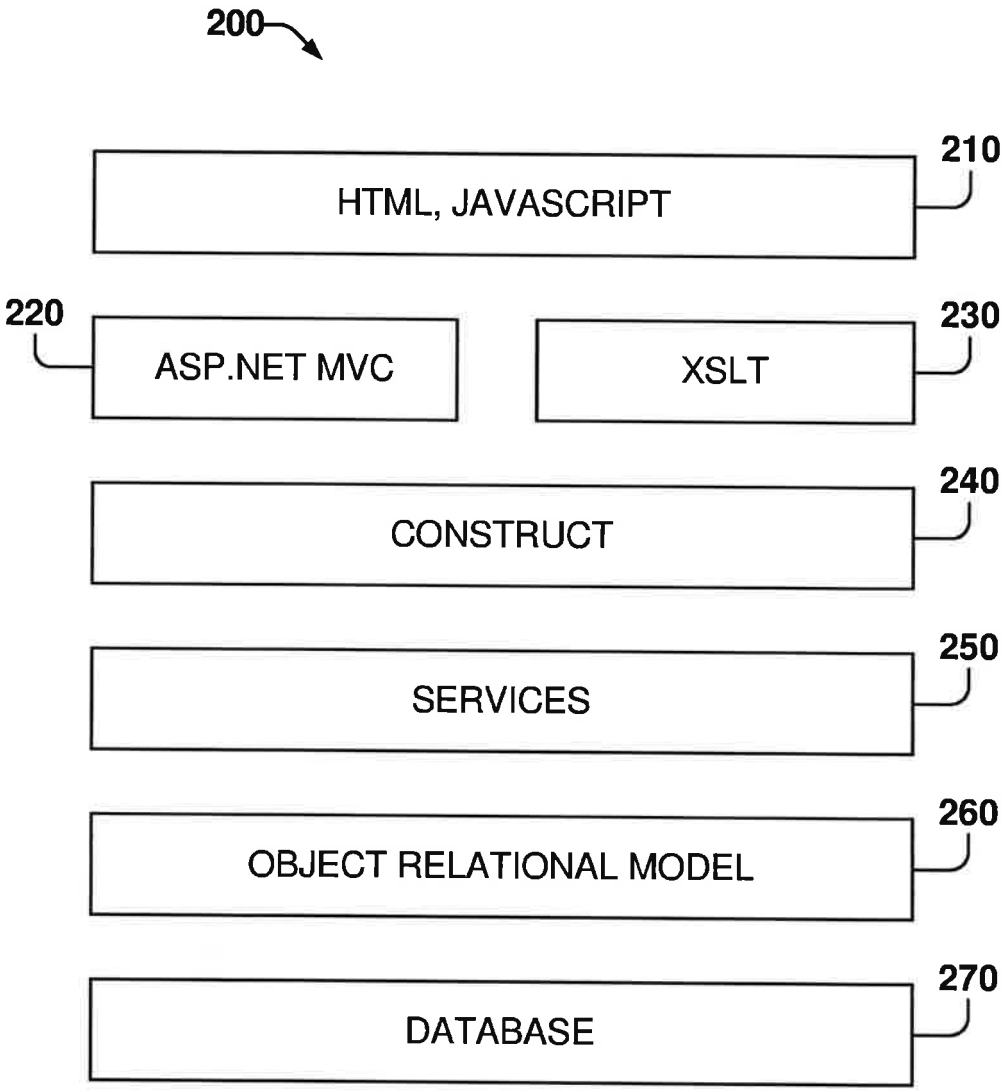

200
HTML, JAVASCRIPT
210
220
ASP.NET MVC
XSLT
230
CONSTRUCT
240
SERVICES
250
OBJECT RELATIONAL MODEL
260
DATABASE
270

FIG. 2

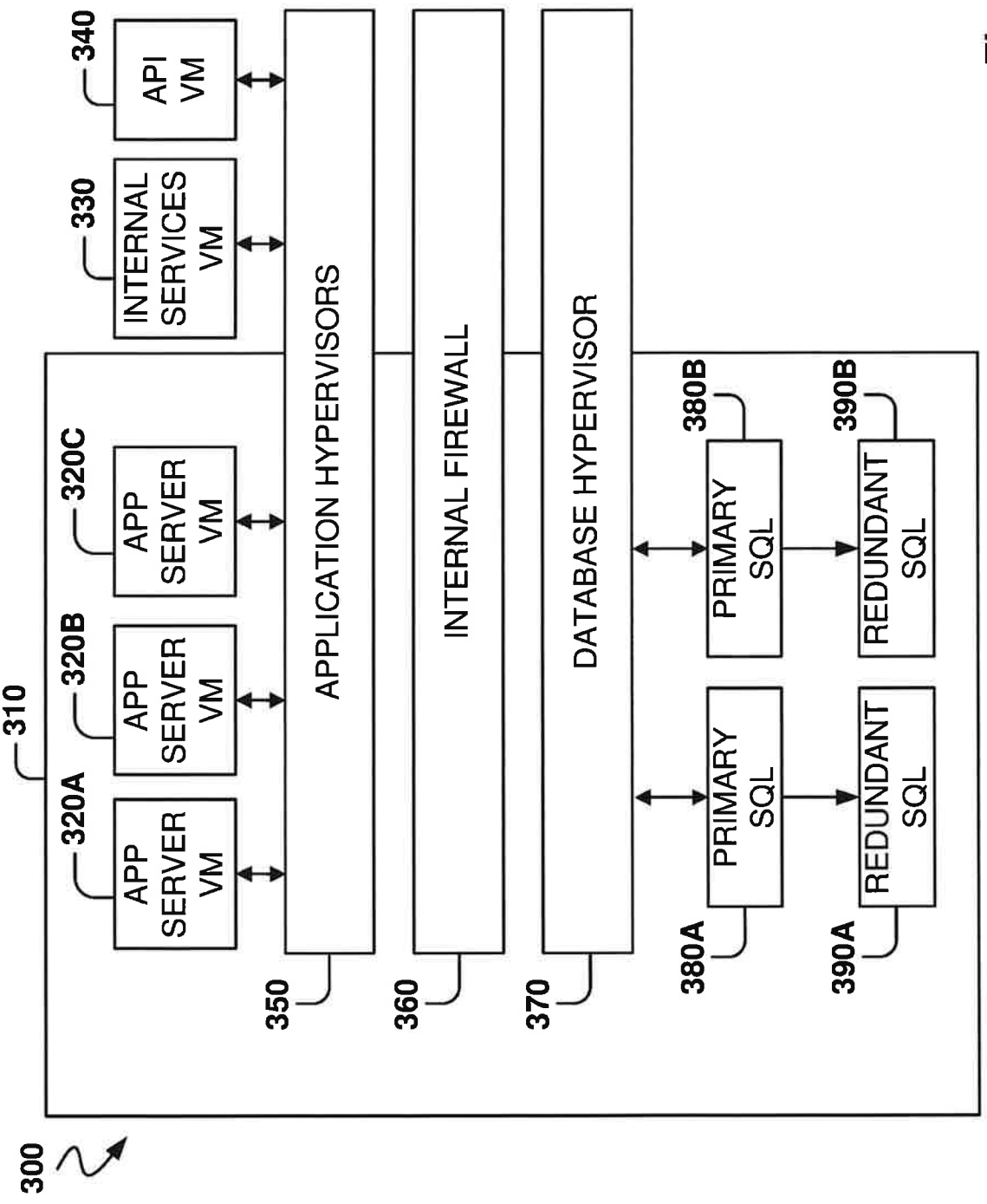

300
310
320A
APP SERVER VM
320B
APP SERVER VM
320C
APP SERVER VM
330
INTERNAL SERVICES VM
340
API VM
350
APPLICATION HYPERVISORS
360
INTERNAL FIREWALL
370
DATABASE HYPERVISOR
380A
PRIMARY SQL
380B
PRIMARY SQL
390A
REDUNDANT SQL
390B
REDUNDANT SQL

Fig. 3

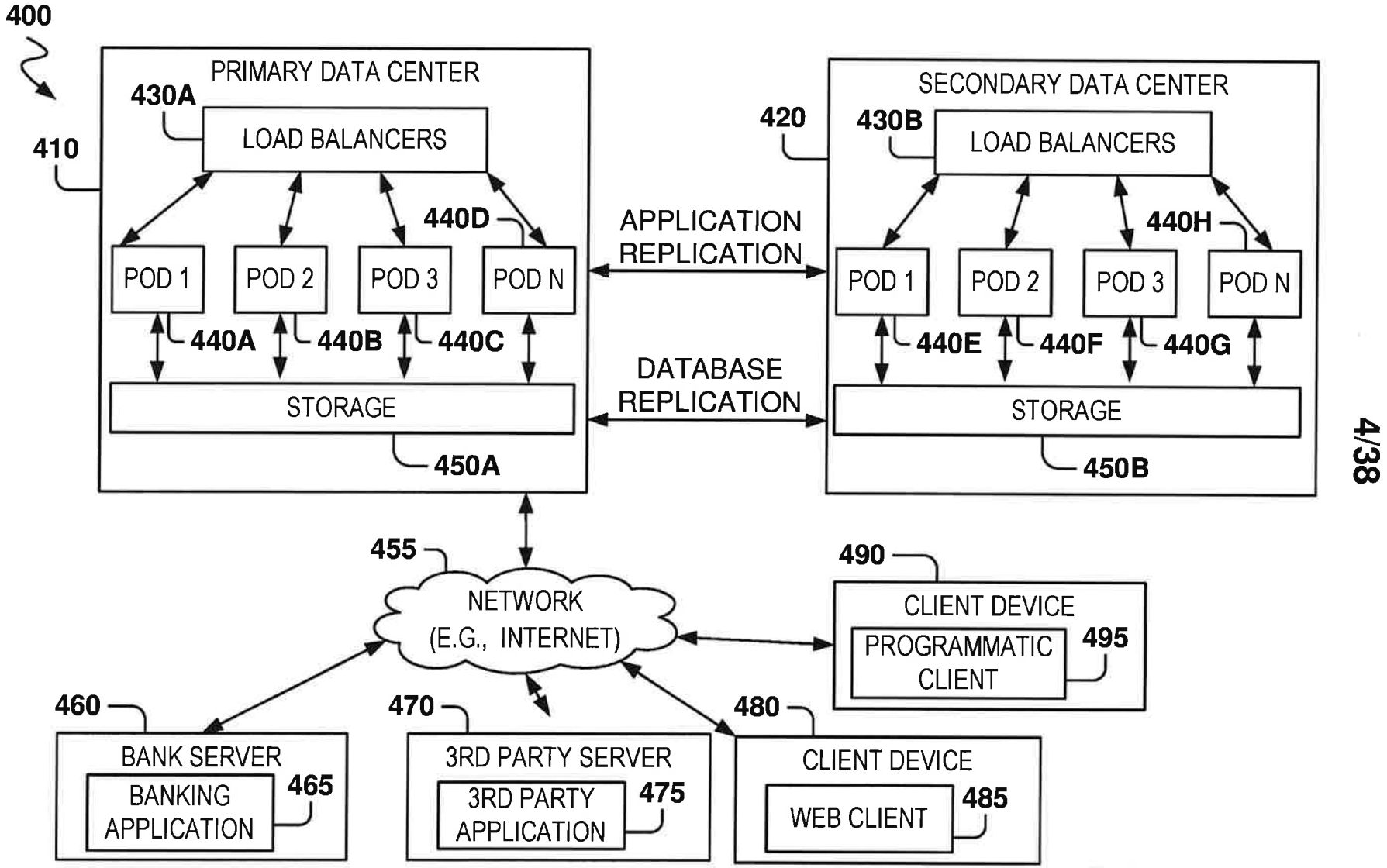

400
PRIMARY DATA CENTER
430A
LOAD BALANCERS
410
440D
POD 1
POD 2
POD 3
POD N
440A
440B
440C
STORAGE
450A
APPLICATION REPLICATION
DATABASE REPLICATION
SECONDARY DATA CENTER
420
430B
LOAD BALANCERS
440H
POD 1
POD 2
POD 3
POD N
440E
440F
440G
STORAGE
450B
455
NETWORK (E.G., INTERNET)
490
CLIENT DEVICE
PROGRAMMATIC CLIENT
495
460
BANK SERVER
BANKING APPLICATION
465
470
3RD PARTY SERVER
3RD PARTY APPLICATION
475
480
CLIENT DEVICE
WEB CLIENT
485

FIG. 4

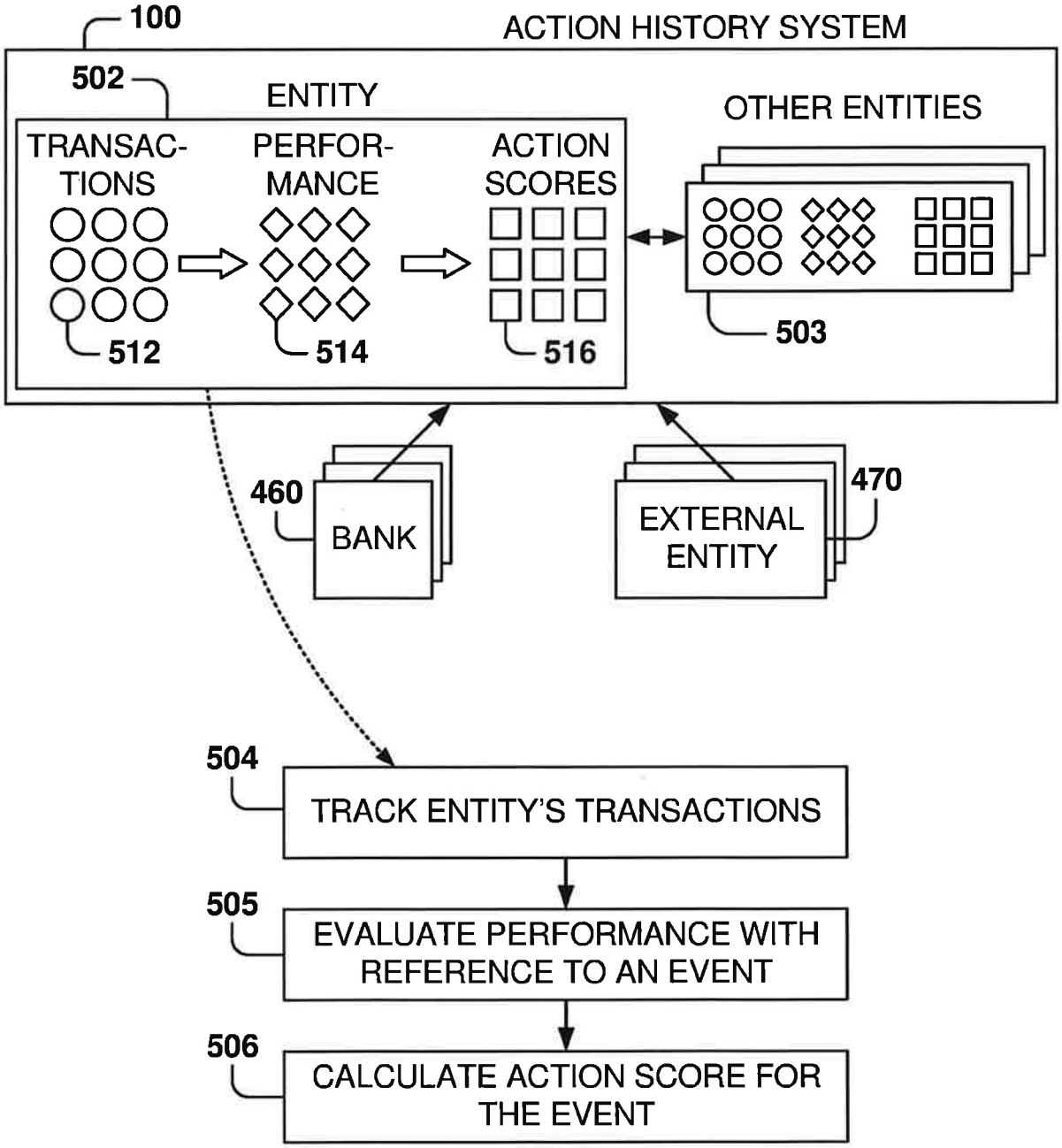

100
ACTION HISTORY SYSTEM
502
ENTITY
TRANSAC-
TIONS
PERFOR-
MANCE
ACTION
SCORES
512
514
516
OTHER ENTITIES
503
460
BANK
470
EXTERNAL
ENTITY
504
TRACK ENTITY'S TRANSACTIONS
505
EVALUATE PERFORMANCE WITH
REFERENCE TO AN EVENT
506
CALCULATE ACTION SCORE FOR
THE EVENT

FIG. 5A

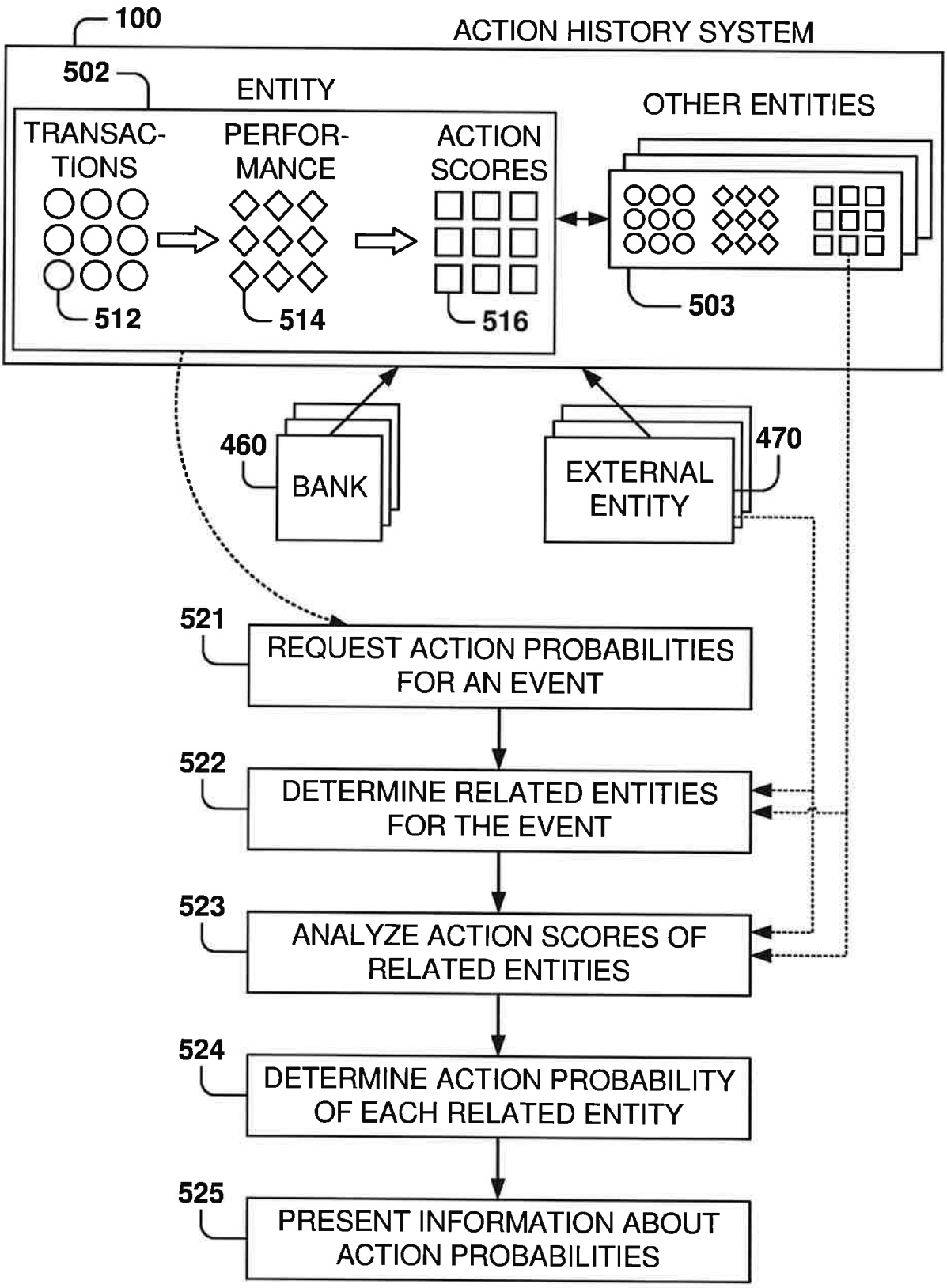

100
ACTION HISTORY SYSTEM
502
ENTITY
TRANSAC-TIONS
PERFOR-MANCE
ACTION SCORES
512
514
516
OTHER ENTITIES
503
460
BANK
470
EXTERNAL ENTITY
521
REQUEST ACTION PROBABILITIES FOR AN EVENT
522
DETERMINE RELATED ENTITIES FOR THE EVENT
523
ANALYZE ACTION SCORES OF RELATED ENTITIES
524
DETERMINE ACTION PROBABILITY OF EACH RELATED ENTITY
525
PRESENT INFORMATION ABOUT ACTION PROBABILITIES

FIG. 5B

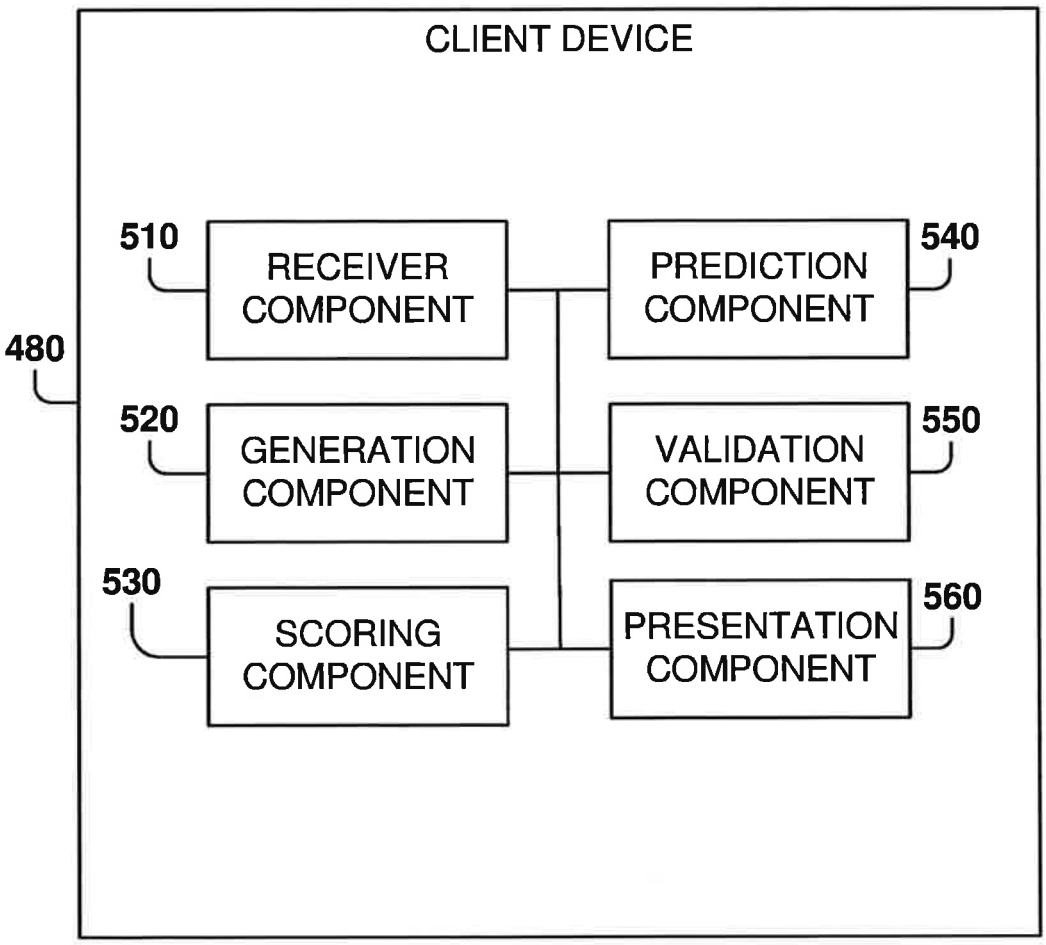

CLIENT DEVICE
480
510
RECEIVER COMPONENT
520
GENERATION COMPONENT
530
SCORING COMPONENT
540
PREDICTION COMPONENT
550
VALIDATION COMPONENT
560
PRESENTATION COMPONENT

FIG. 5C

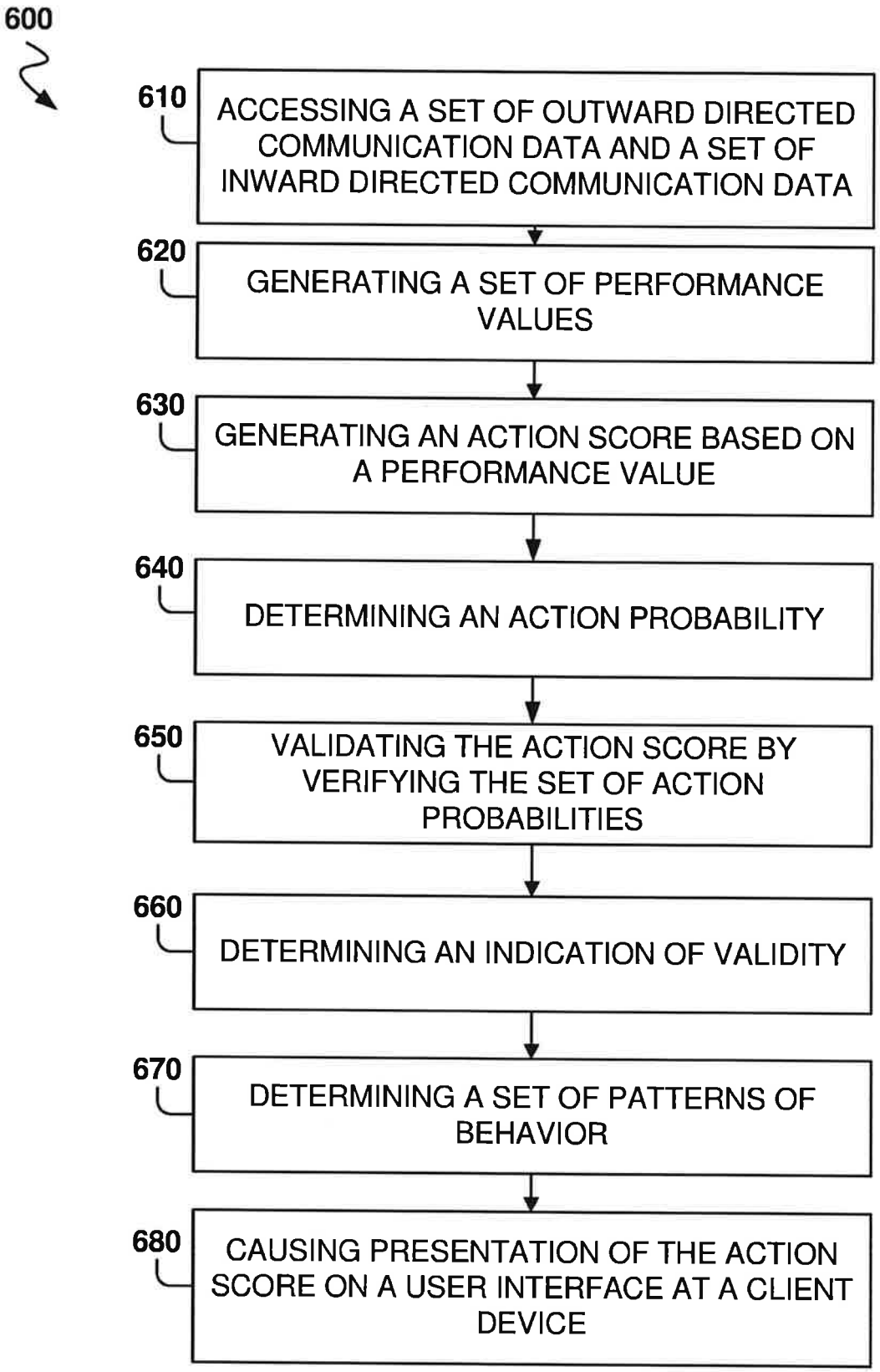

600
610
ACCESSING A SET OF OUTWARD DIRECTED COMMUNICATION DATA AND A SET OF INWARD DIRECTED COMMUNICATION DATA
620
GENERATING A SET OF PERFORMANCE VALUES
630
GENERATING AN ACTION SCORE BASED ON A PERFORMANCE VALUE
640
DETERMINING AN ACTION PROBABILITY
650
VALIDATING THE ACTION SCORE BY VERIFYING THE SET OF ACTION PROBABILITIES
660
DETERMINING AN INDICATION OF VALIDITY
670
DETERMINING A SET OF PATTERNS OF BEHAVIOR
680
CAUSING PRESENTATION OF THE ACTION SCORE ON A USER INTERFACE AT A CLIENT DEVICE

FIG. 6

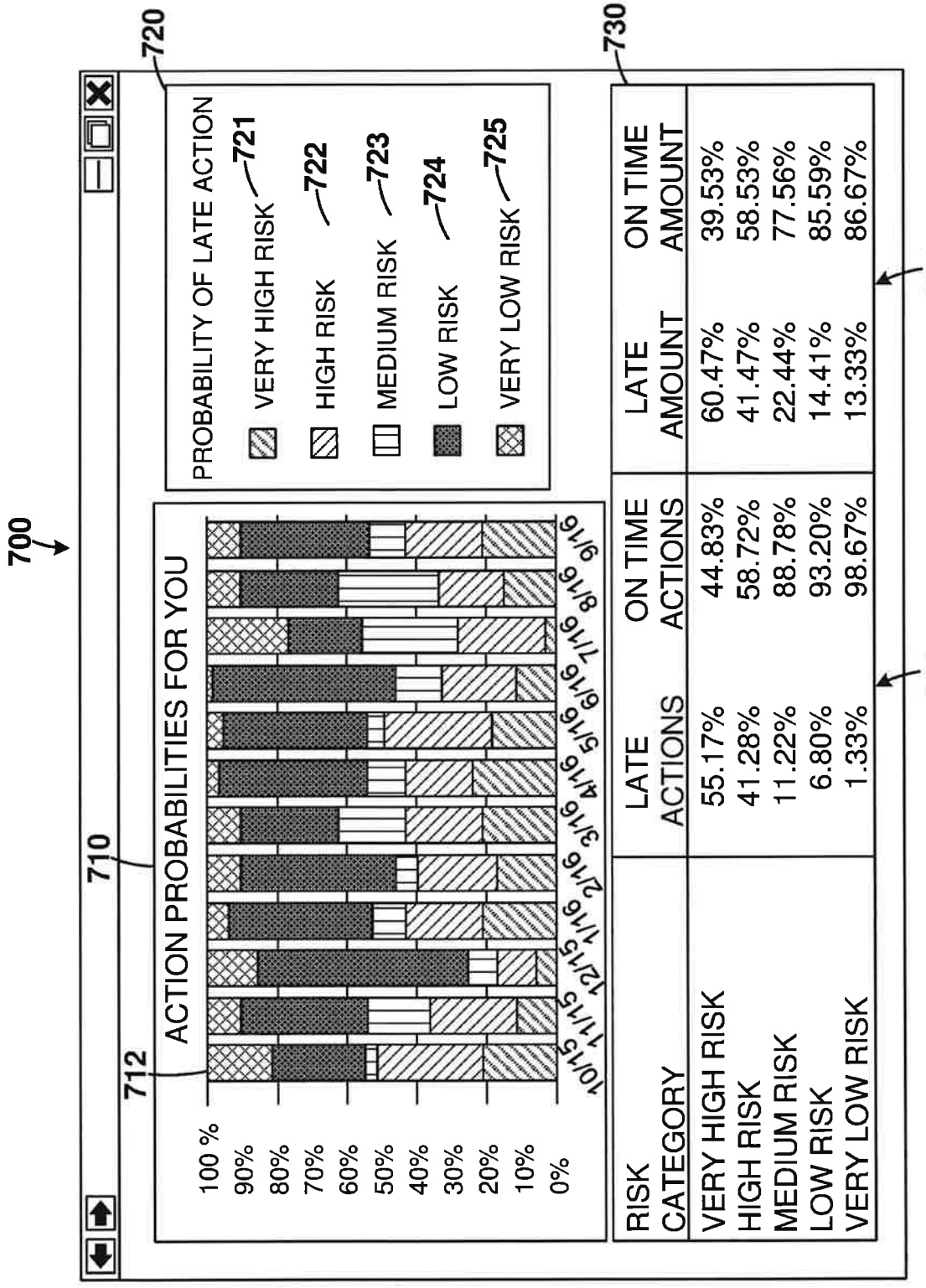

700
710
712
720
730
732
734
ACTION PROBABILITIES FOR YOU
100 %
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
10/15
11/15
12/15
1/16
2/16
3/16
4/16
5/16
6/16
7/16
8/16
9/16
PROBABILITY OF LATE ACTION
VERY HIGH RISK 721
HIGH RISK 722
MEDIUM RISK 723
LOW RISK 724
VERY LOW RISK 725
RISK CATEGORY
LATE ACTIONS
ON TIME ACTIONS
LATE AMOUNT
ON TIME AMOUNT
VERY HIGH RISK 55.17% 44.83% 60.47% 39.53%
HIGH RISK 41.28% 58.72% 41.47% 58.53%
MEDIUM RISK 11.22% 88.78% 22.44% 77.56%
LOW RISK 6.80% 93.20% 14.41% 85.59%
VERY LOW RISK 1.33% 98.67% 13.33% 86.67%

FIG. 7

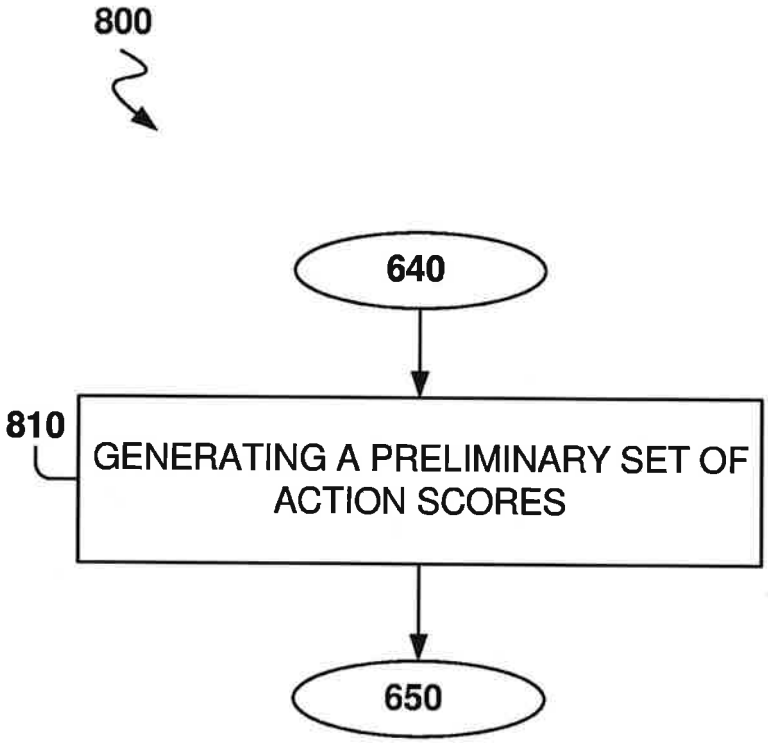

800
640
810
GENERATING A PRELIMINARY SET OF ACTION SCORES
650

FIG. 8A

SUGGESTED PREDICTIVE INVOICE ROLL-UP PROCESS

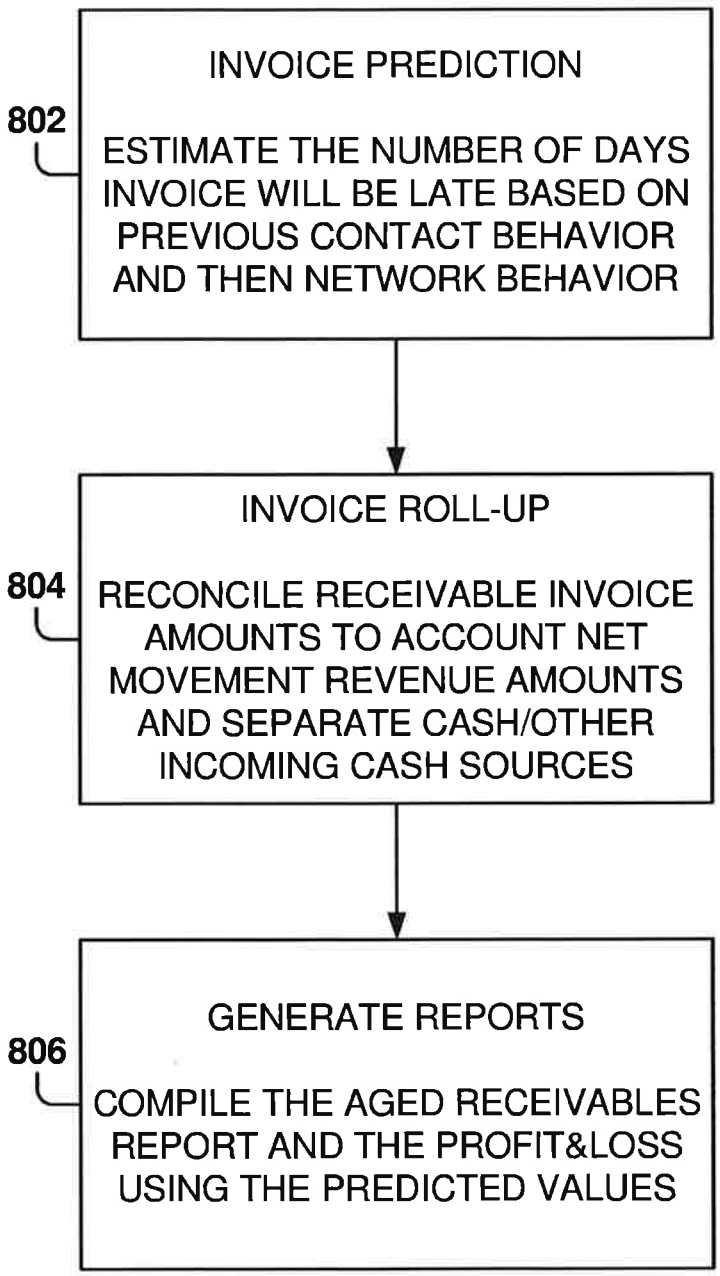


FIG. 8B

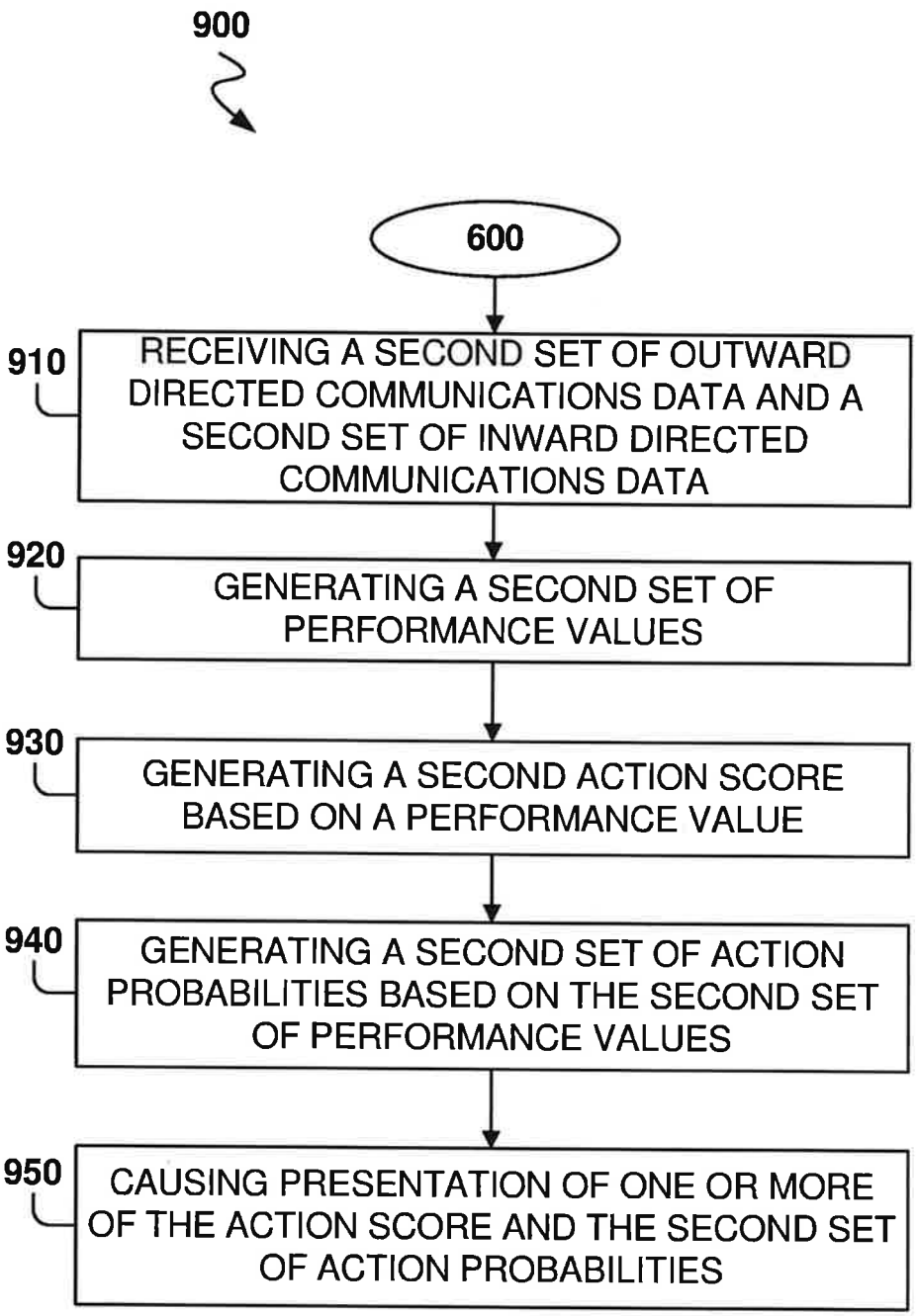

900
600
910
RECEIVING A SECOND SET OF OUTWARD DIRECTED COMMUNICATIONS DATA AND A SECOND SET OF INWARD DIRECTED COMMUNICATIONS DATA
920
GENERATING A SECOND SET OF PERFORMANCE VALUES
930
GENERATING A SECOND ACTION SCORE BASED ON A PERFORMANCE VALUE
940
GENERATING A SECOND SET OF ACTION PROBABILITIES BASED ON THE SECOND SET OF PERFORMANCE VALUES
950
CAUSING PRESENTATION OF ONE OR MORE OF THE ACTION SCORE AND THE SECOND SET OF ACTION PROBABILITIES

FIG. 9

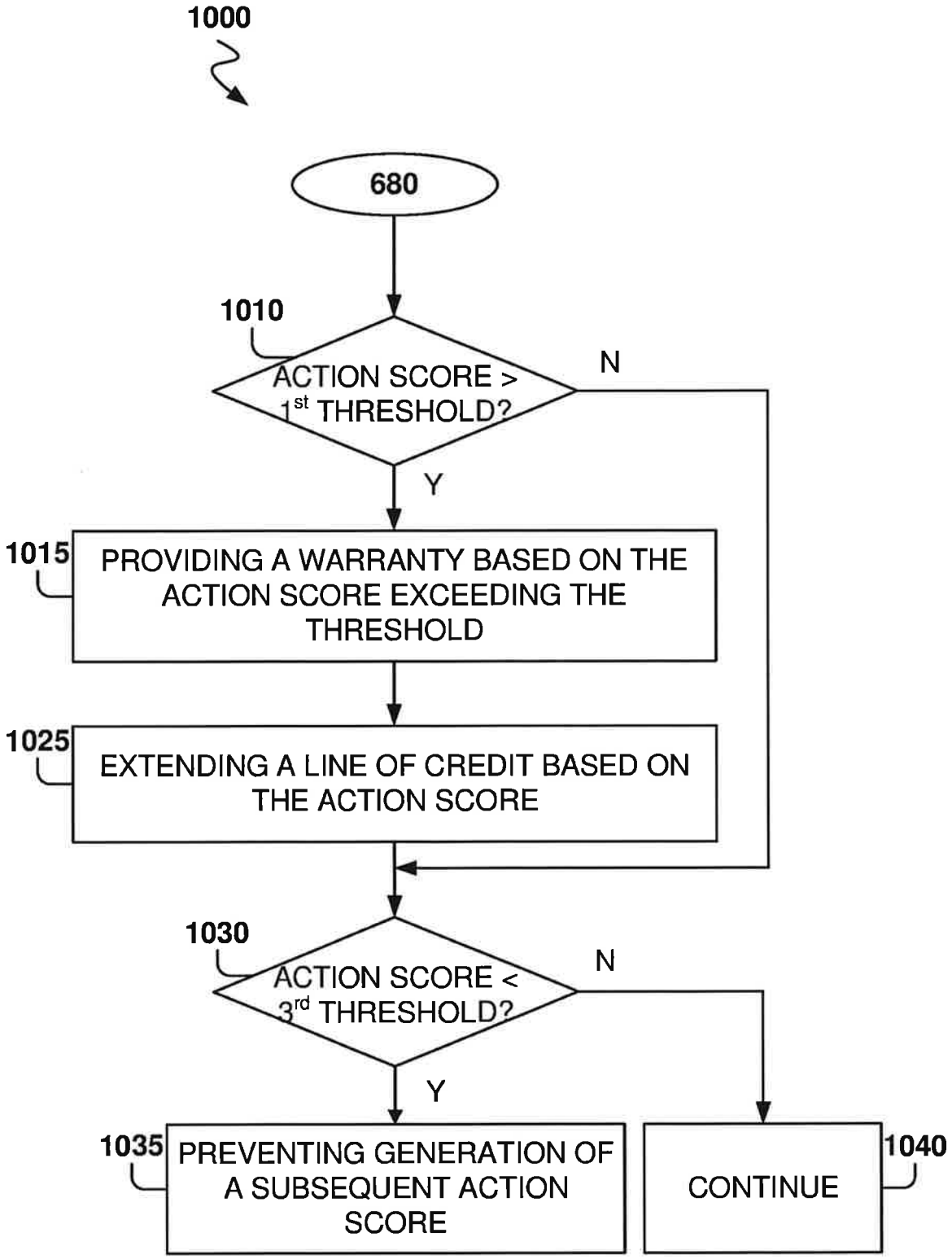

1000
680
1010
ACTION SCORE > 1st THRESHOLD?
N
Y
1015
PROVIDING A WARRANTY BASED ON THE ACTION SCORE EXCEEDING THE THRESHOLD
1025
EXTENDING A LINE OF CREDIT BASED ON THE ACTION SCORE
1030
ACTION SCORE < 3rd THRESHOLD?
N
Y
1035
PREVENTING GENERATION OF A SUBSEQUENT ACTION SCORE
CONTINUE
1040

FIG. 10

VISUAL OF ENTITIES

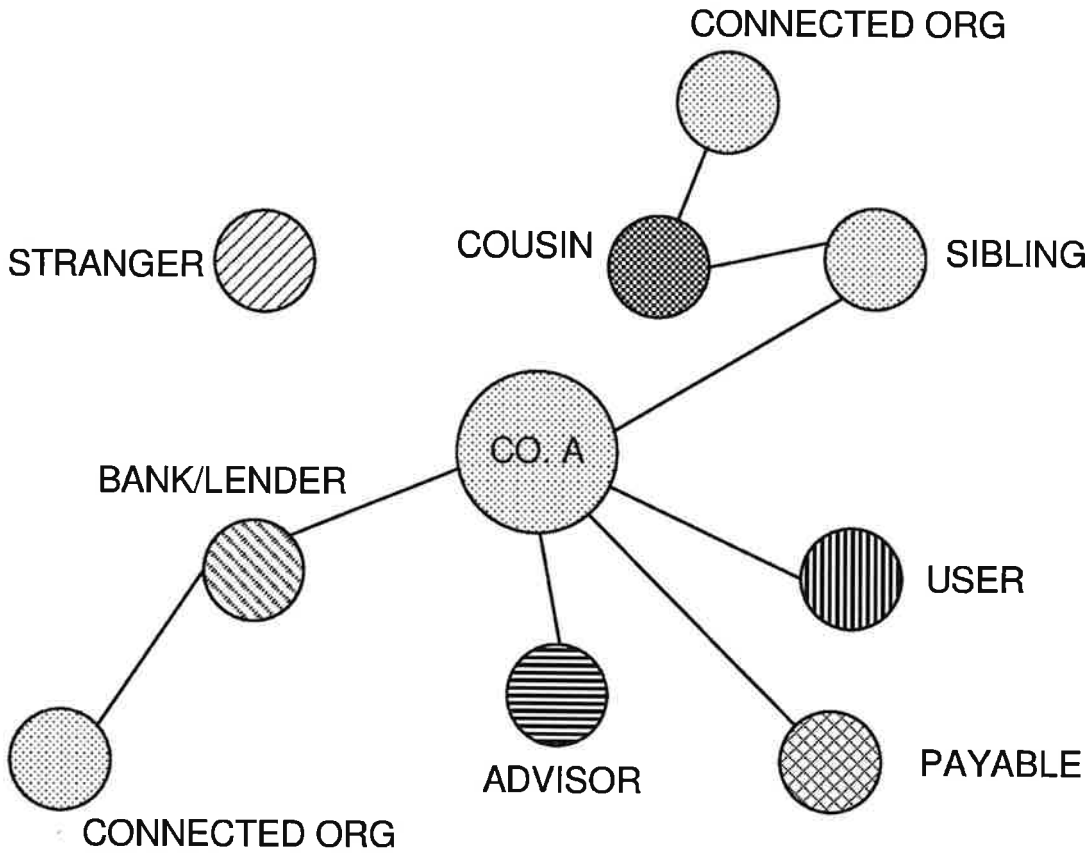


FIG. 11A

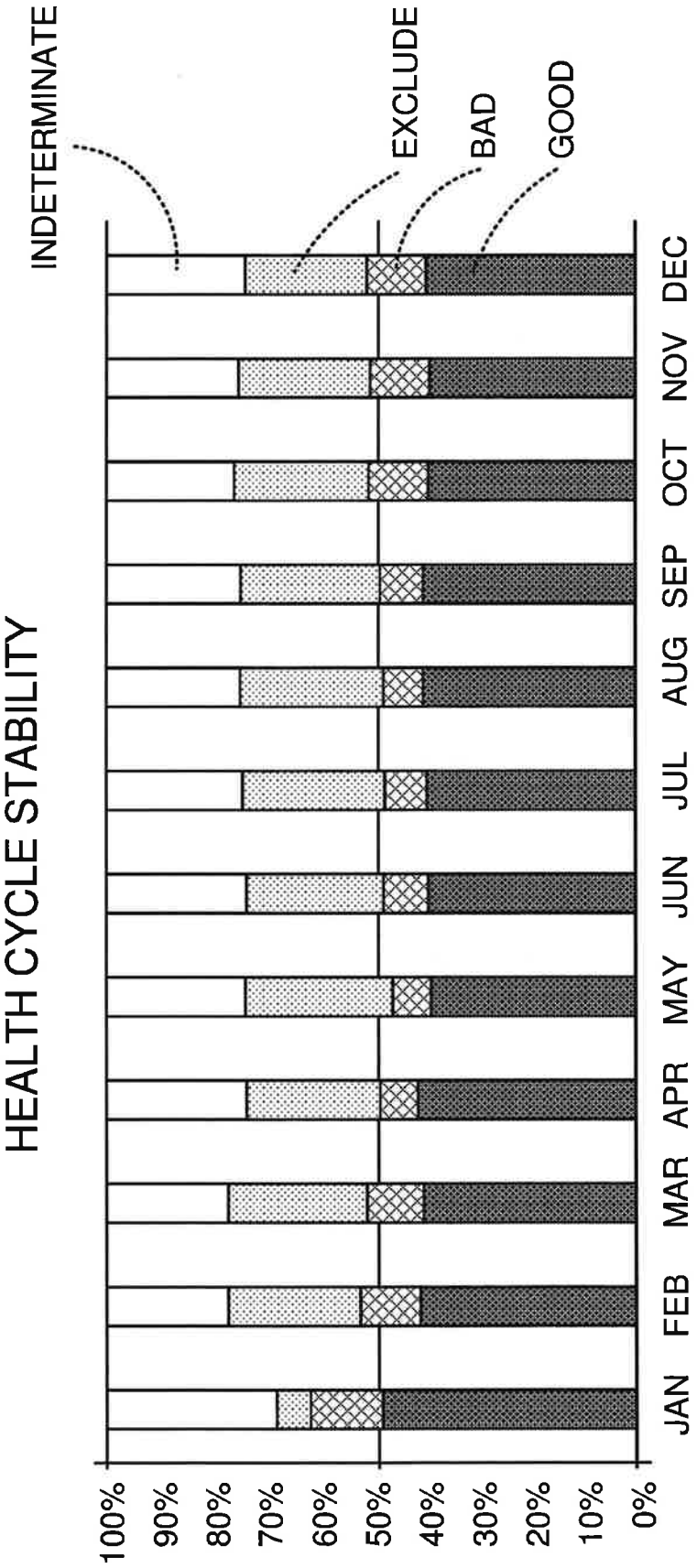

HEALTH CYCLE STABILITY
INDETERMINATE
EXCLUDE
BAD
GOOD
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
OCT
NOV
DEC

FIG. 11B

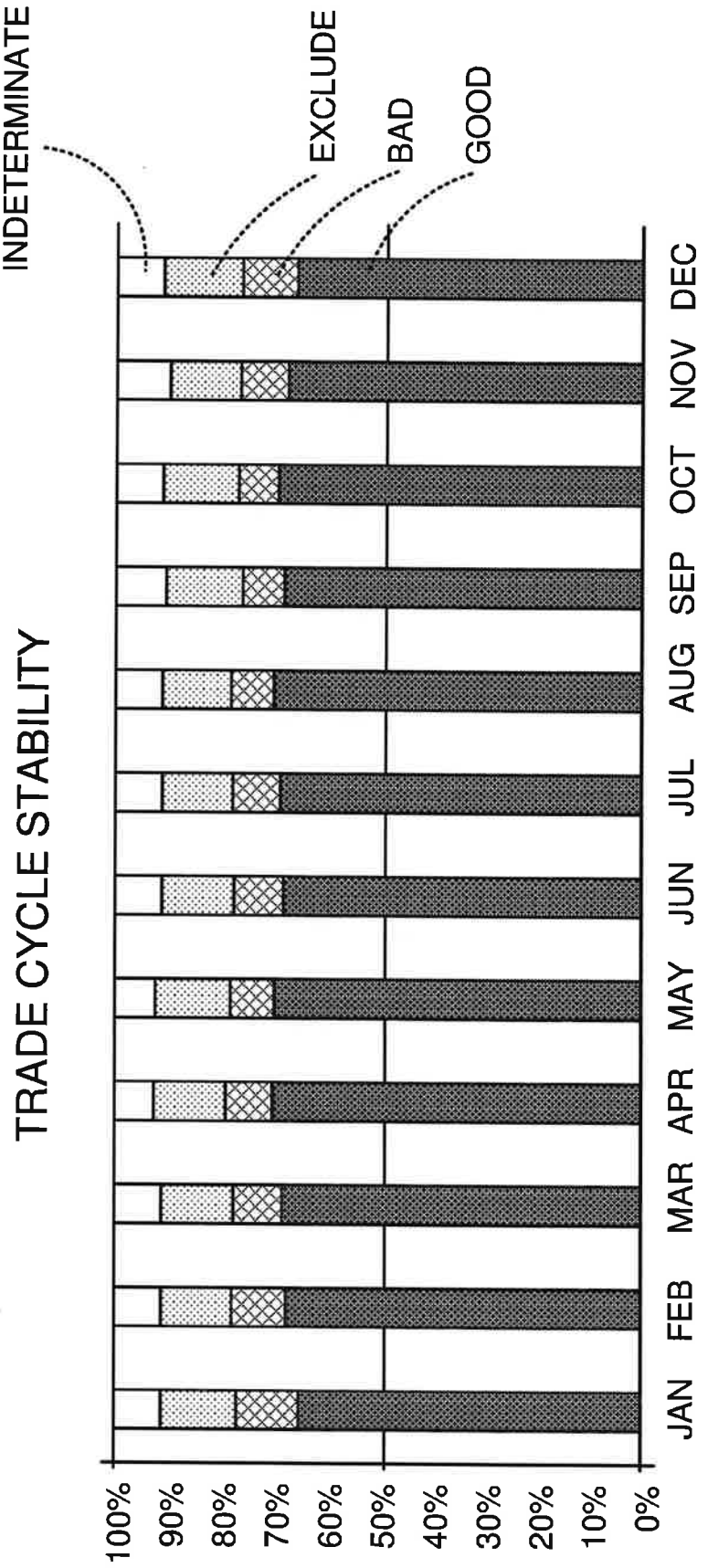

TRADE CYCLE STABILITY
INDETERMINATE
EXCLUDE
BAD
GOOD
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
OCT
NOV
DEC

FIG. 11C

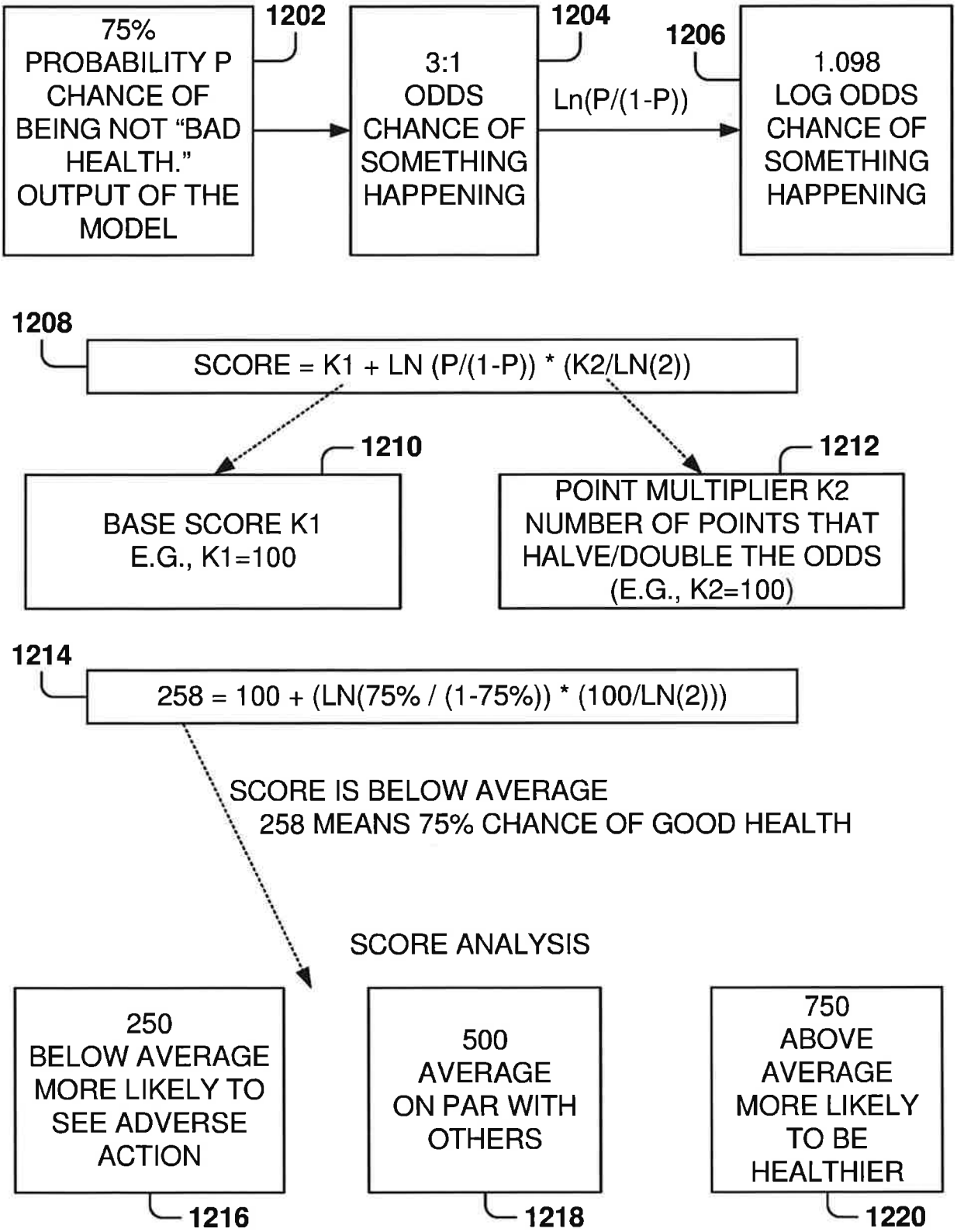
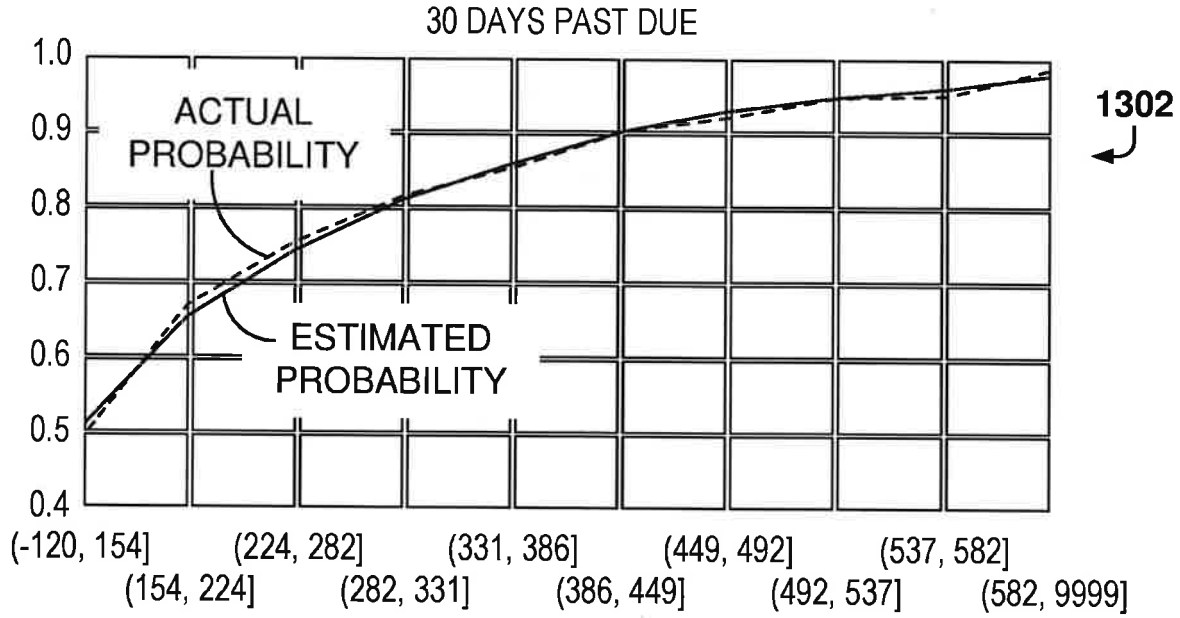

75%
PROBABILITY P
CHANCE OF
BEING NOT "BAD
HEALTH."
OUTPUT OF THE
MODEL
1202
3:1
ODDS
CHANCE OF
SOMETHING
HAPPENING
1204
Ln(P/(1-P))
1206
1.098
LOG ODDS
CHANCE OF
SOMETHING
HAPPENING
1208
SCORE = K1 + LN (P/(1-P)) * (K2/LN(2))
1210
BASE SCORE K1
E.G., K1=100
1212
POINT MULTIPLIER K2
NUMBER OF POINTS THAT
HALVE/DOUBLE THE ODDS
(E.G., K2=100)
1214
258 = 100 + (LN(75% / (1-75%)) * (100/LN(2)))
SCORE IS BELOW AVERAGE
258 MEANS 75% CHANCE OF GOOD HEALTH
SCORE ANALYSIS
250
BELOW AVERAGE
MORE LIKELY TO
SEE ADVERSE
ACTION
1216
500
AVERAGE
ON PAR WITH
OTHERS
1218
750
ABOVE
AVERAGE
MORE LIKELY
TO BE
HEALTHIER
1220

FIG. 12



1304

BUCKET	COUNT	ESTIMATED PROBABILITY	ACTUAL PROBABILITY
(-120, 154]	40965	49.38%	48.58%
(154, 224]	40710	65.40%	66.70%
(224, 282]	40853	74.41%	75.40%
(282, 331]	40614	80.87%	80.41%
(331, 386]	40766	85.66%	85.96%
(386, 449]	40679	90.10%	89.50%
(449, 492]	40705	92.83%	92.31%
(492, 537]	40869	94.72%	94.98%
(537, 582]	40522	96.04%	95.27%
(582, 9999]	40188	97.90%	98.09%

FIG. 13

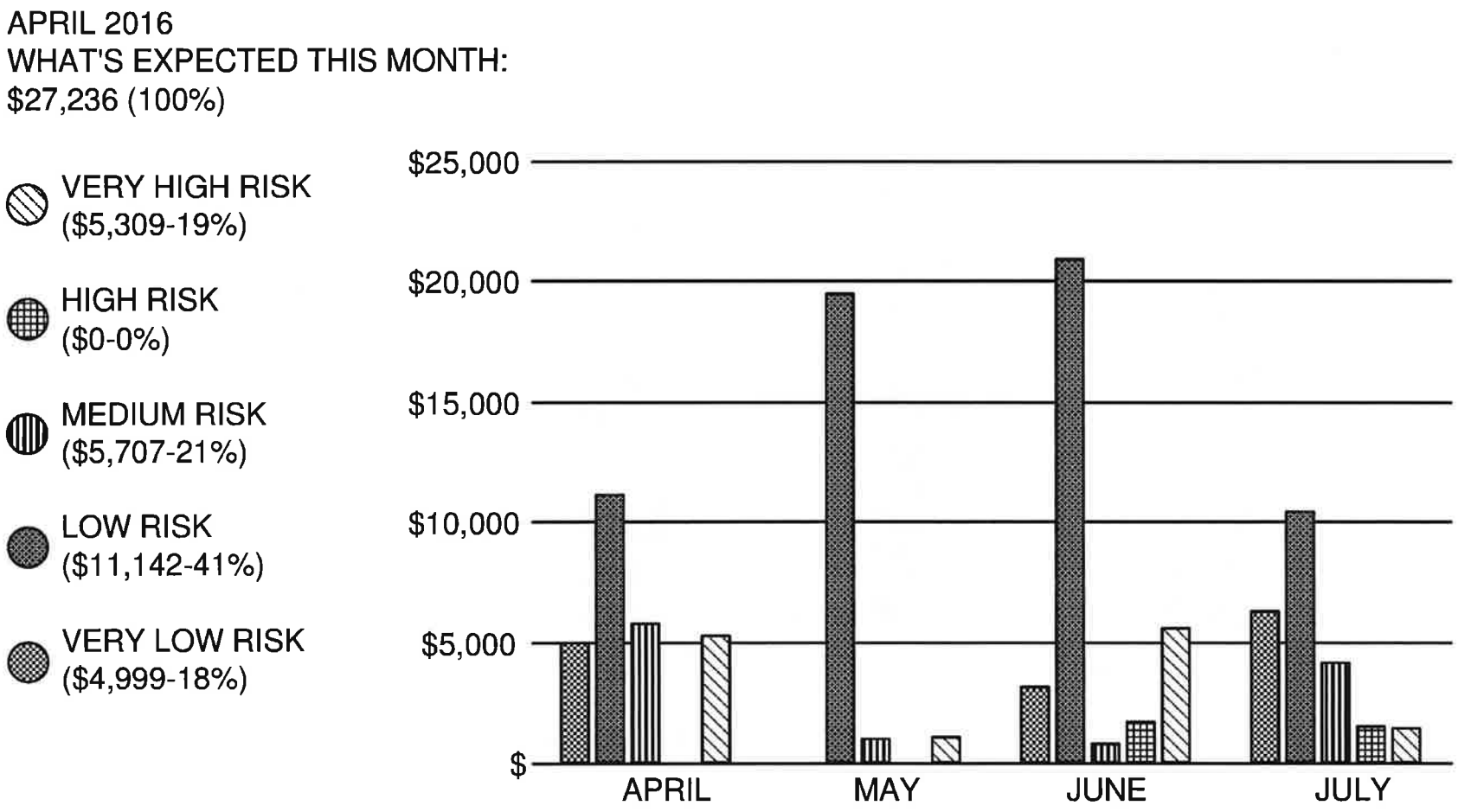

APRIL 2016
WHAT'S EXPECTED THIS MONTH:
$27,236 (100%)
VERY HIGH RISK
($5,309-19%)
HIGH RISK
($0-0%)
MEDIUM RISK
($5,707-21%)
LOW RISK
($11,142-41%)
VERY LOW RISK
($4,999-18%)
$25,000
$20,000
$15,000
$10,000
$5,000
$
APRIL
MAY
JUNE
JULY

FIG. 14

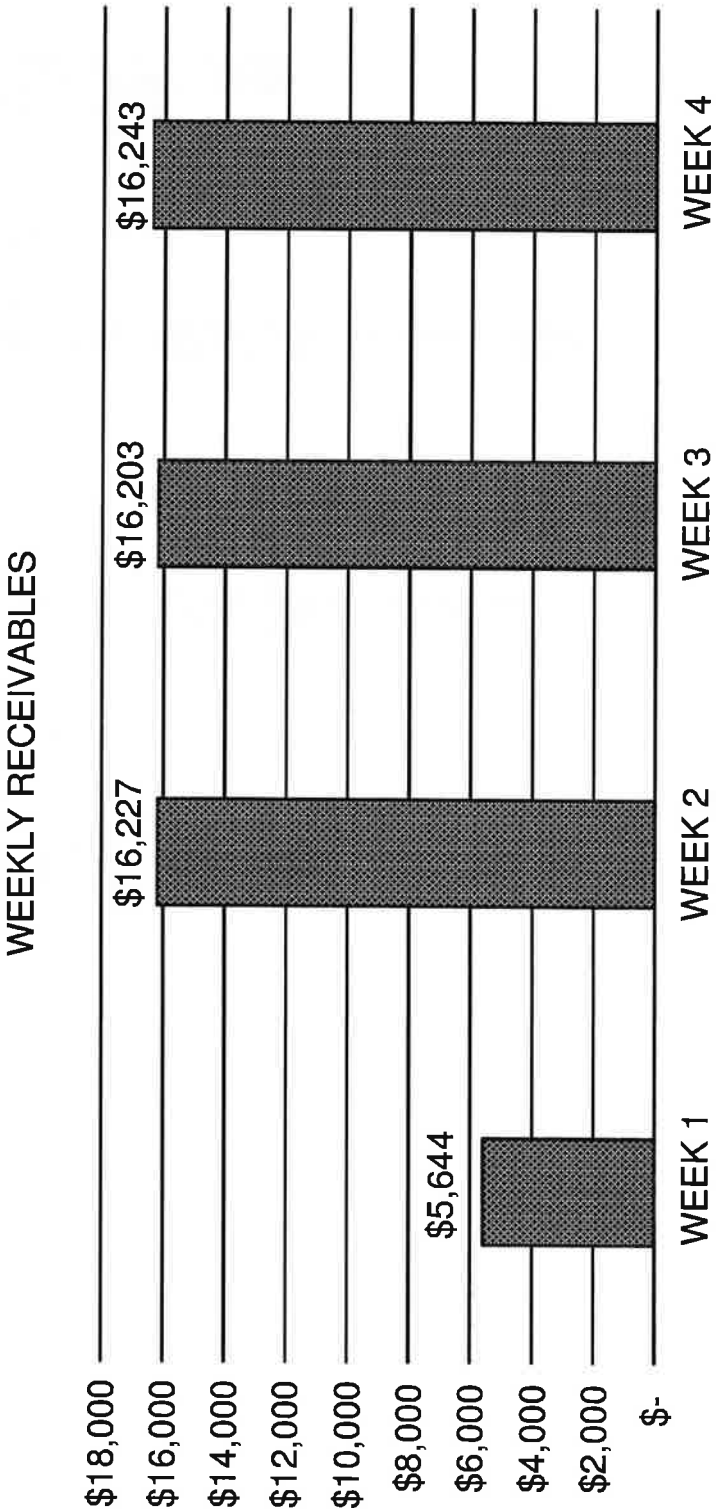

WEEKLY RECEIVABLES
$18,000
$16,000
$14,000
$12,000
$10,000
$8,000
$6,000
$4,000
$2,000
$-
$16,227
$16,203
$16,243
$5,644
WEEK 1
WEEK 2
WEEK 3
WEEK 4

FIG. 15

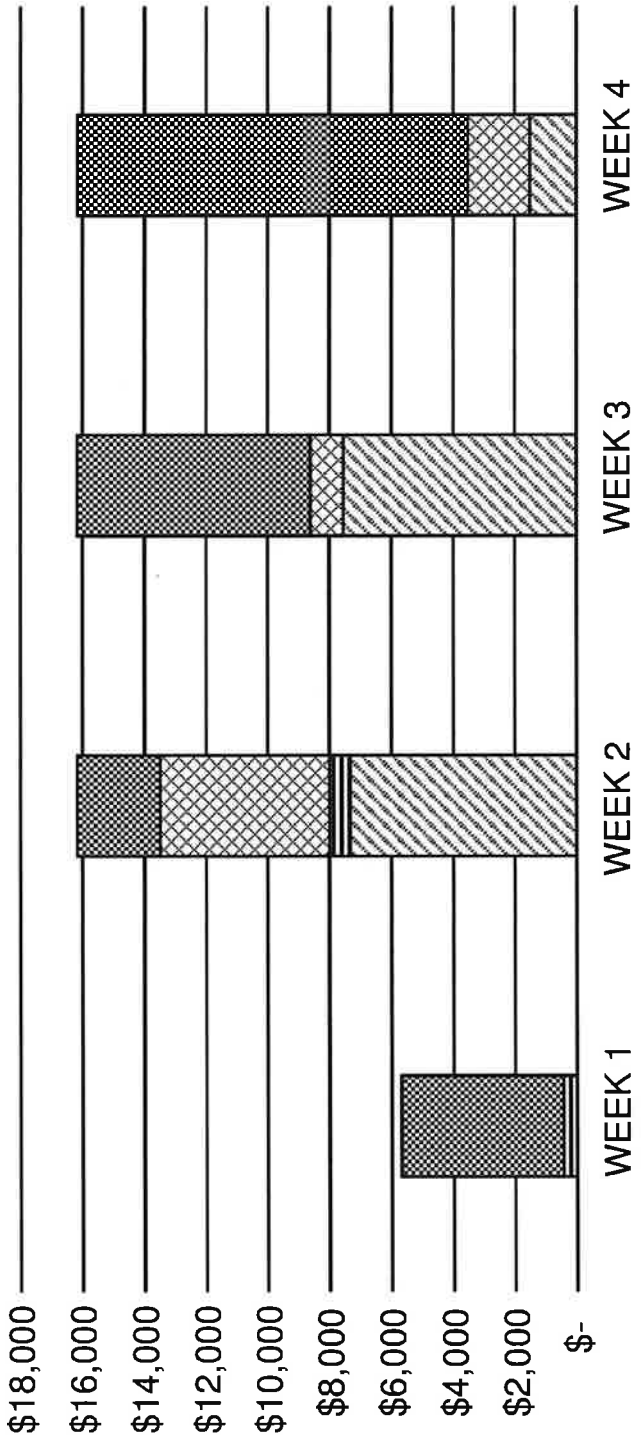

WEEKLY RISK BANDED RECEIVABLES
$18,000
$16,000
$14,000
$12,000
$10,000
$8,000
$6,000
$4,000
$2,000
$-
WEEK 1
WEEK 2
WEEK 3
WEEK 4

FIG. 16

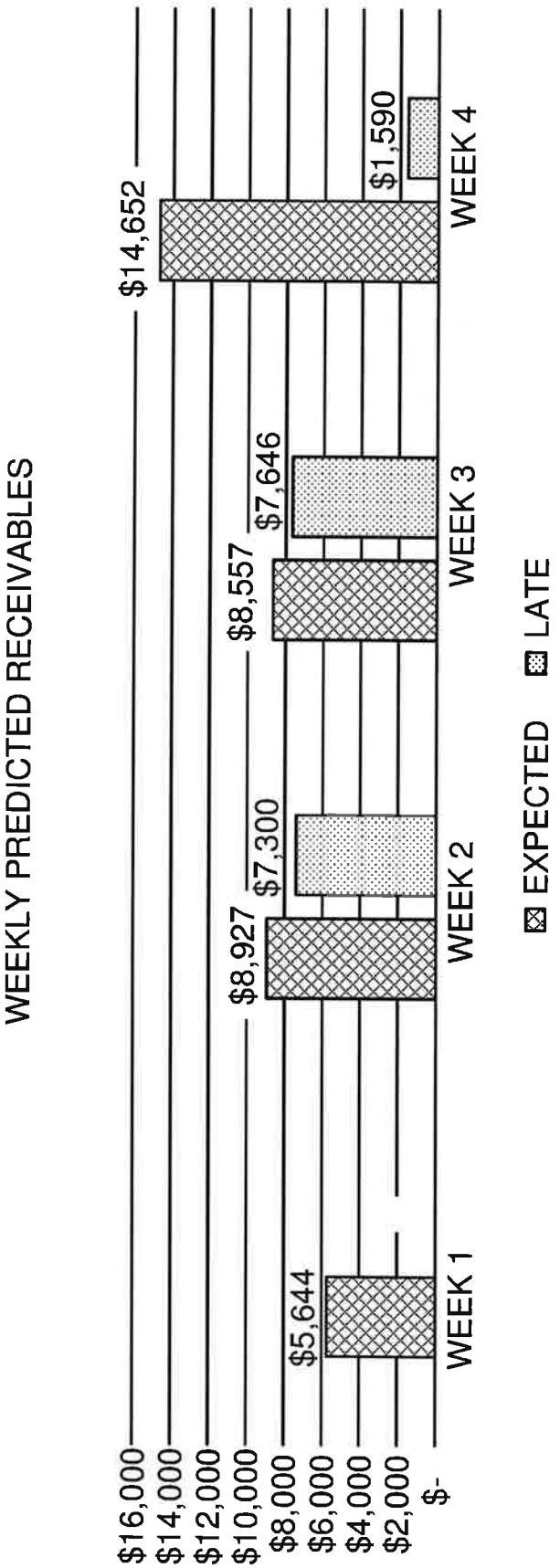

WEEKLY PREDICTED RECEIVABLES
$16,000
$14,000
$12,000
$10,000
$8,000
$6,000
$4,000
$2,000
$-
$5,644
$8,927
$7,300
$8,557
$7,646
$14,652
$1,590
WEEK 1
WEEK 2
WEEK 3
WEEK 4
EXPECTED
LATE

FIG. 17

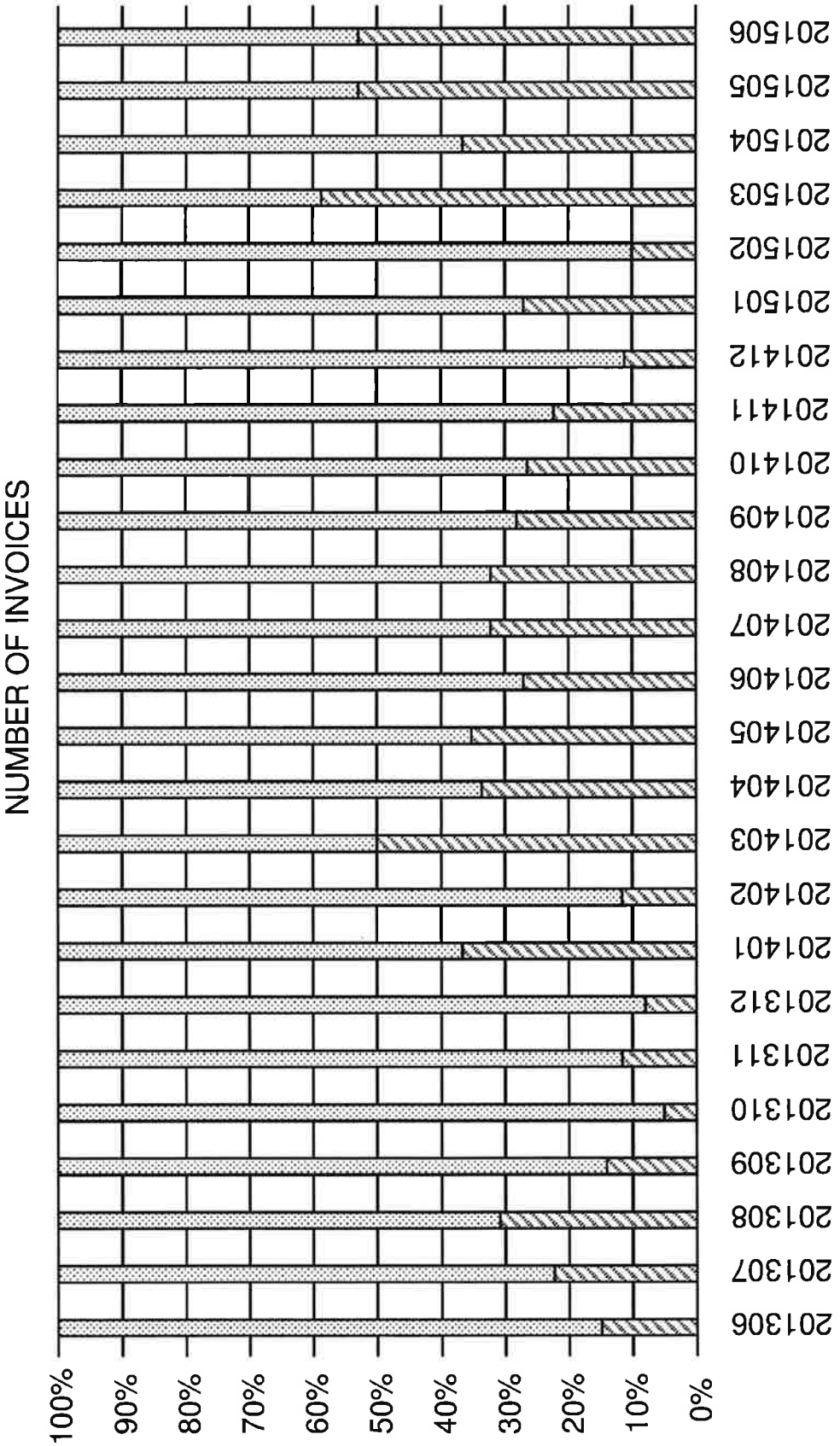

NUMBER OF INVOICES
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
201306
201307
201308
201309
201310
201311
201312
201401
201402
201403
201404
201405
201406
201407
201408
201409
201410
201411
201412
201501
201502
201503
201504
201505
201506
HIGH RISK COUNT
LOW RISK COUNT

FIG. 18

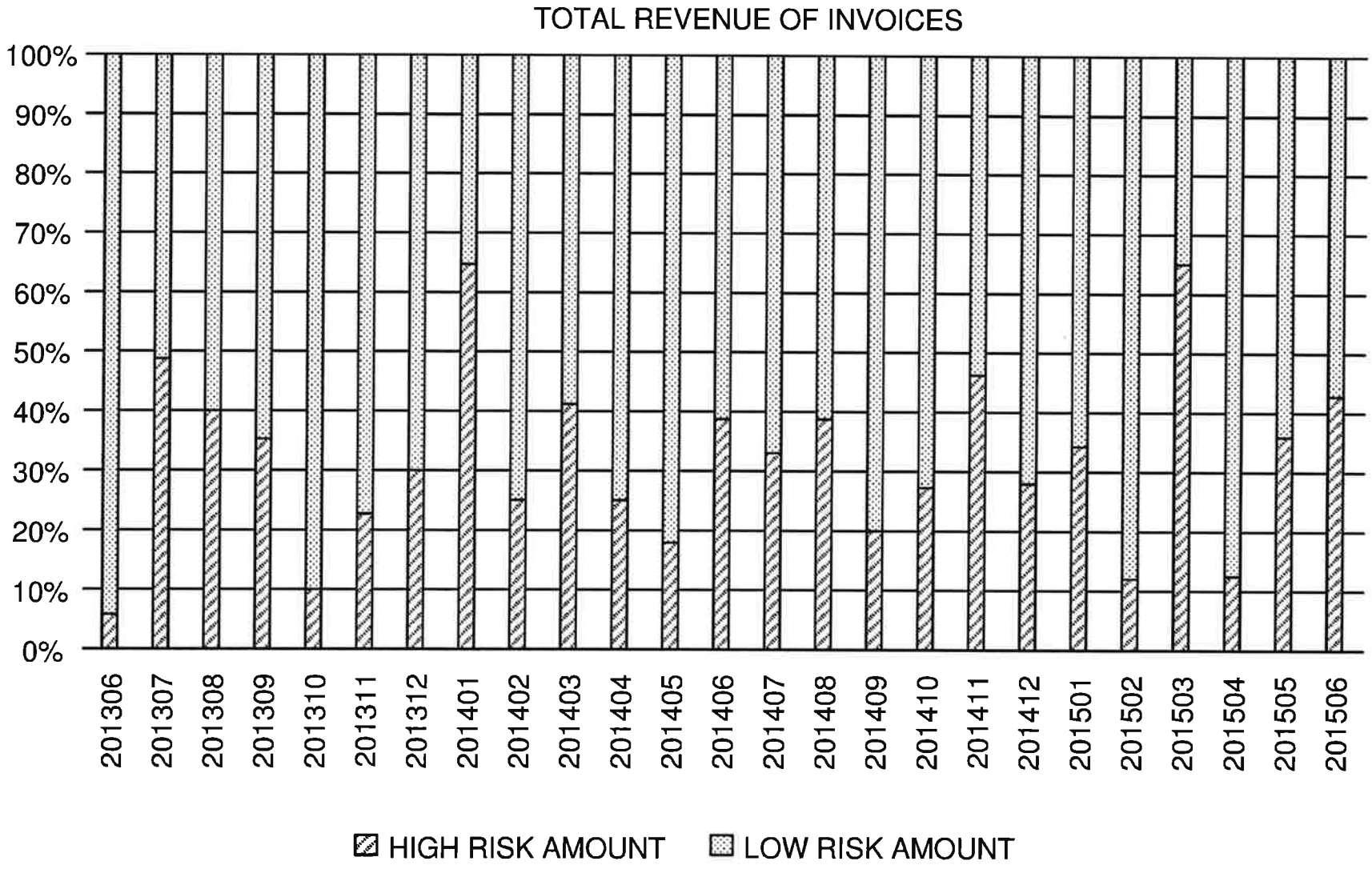

TOTAL REVENUE OF INVOICES
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
201306
201307
201308
201309
201310
201311
201312
201401
201402
201403
201404
201405
201406
201407
201408
201409
201410
201411
201412
201501
201502
201503
201504
201505
201506
HIGH RISK AMOUNT
LOW RISK AMOUNT

FIG. 19

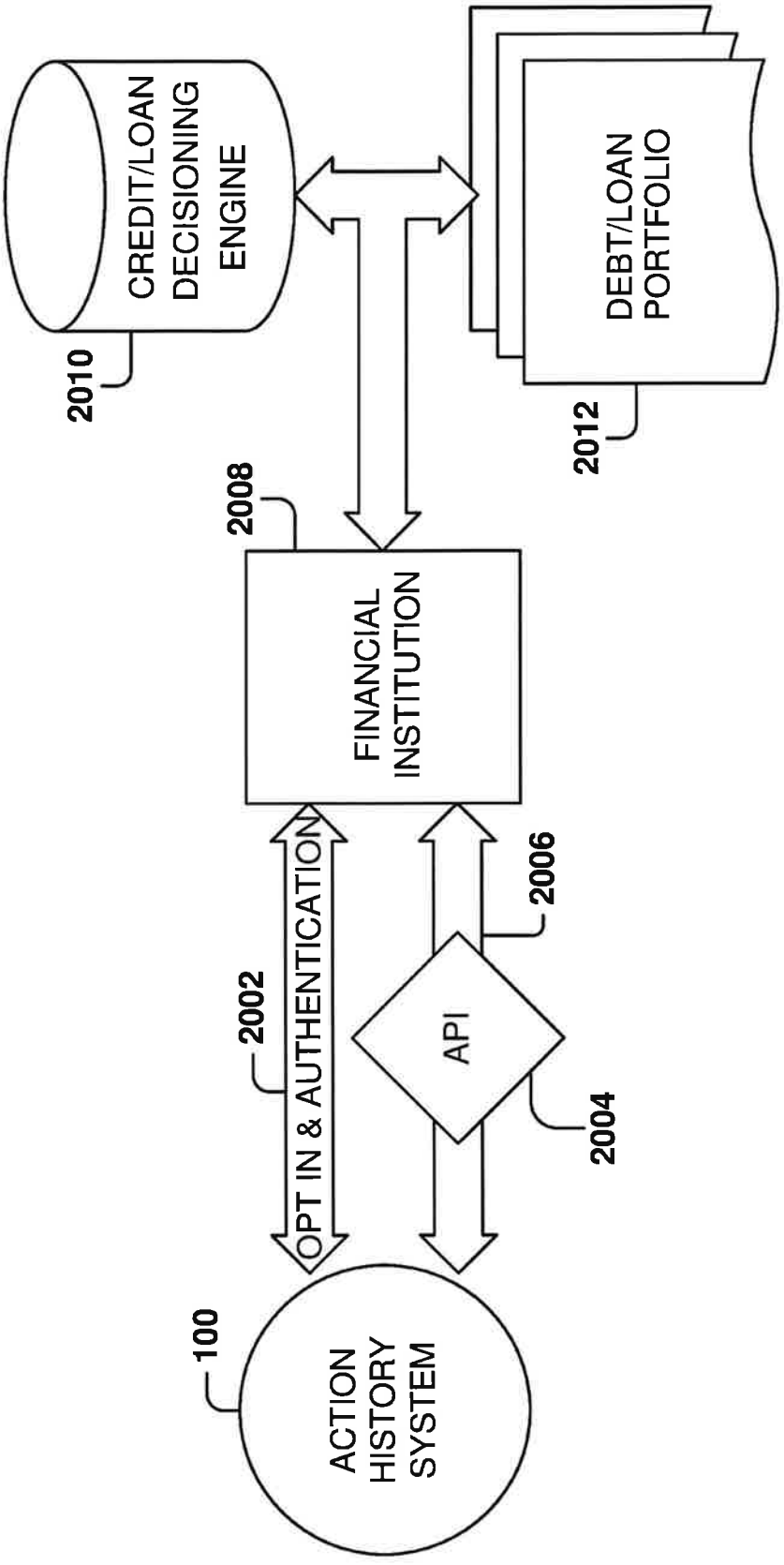
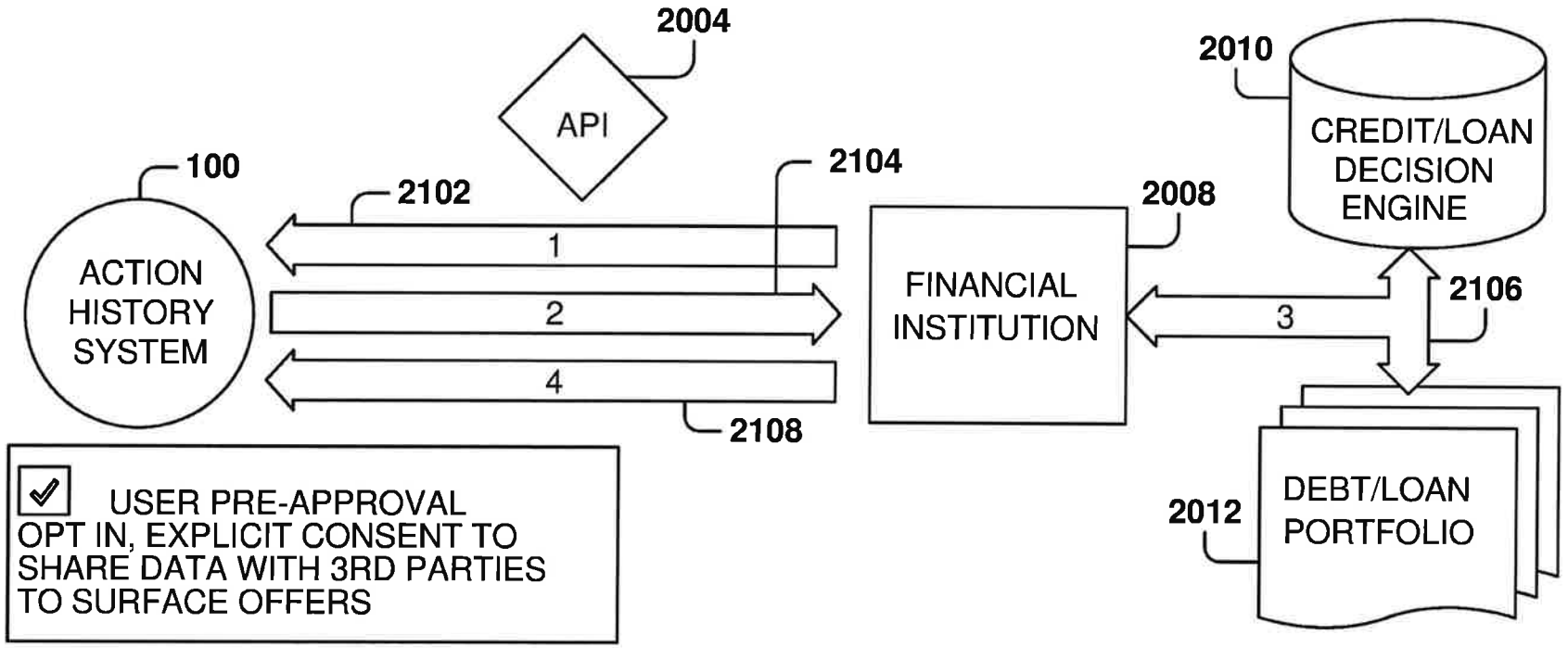

CREDIT/LOAN DECISIONING ENGINE
2010
DEBT/LOAN PORTFOLIO
2012
2008
FINANCIAL INSTITUTION
OPT IN & AUTHENTICATION
2002
API
2006
2004
ACTION HISTORY SYSTEM
100

FIG. 20

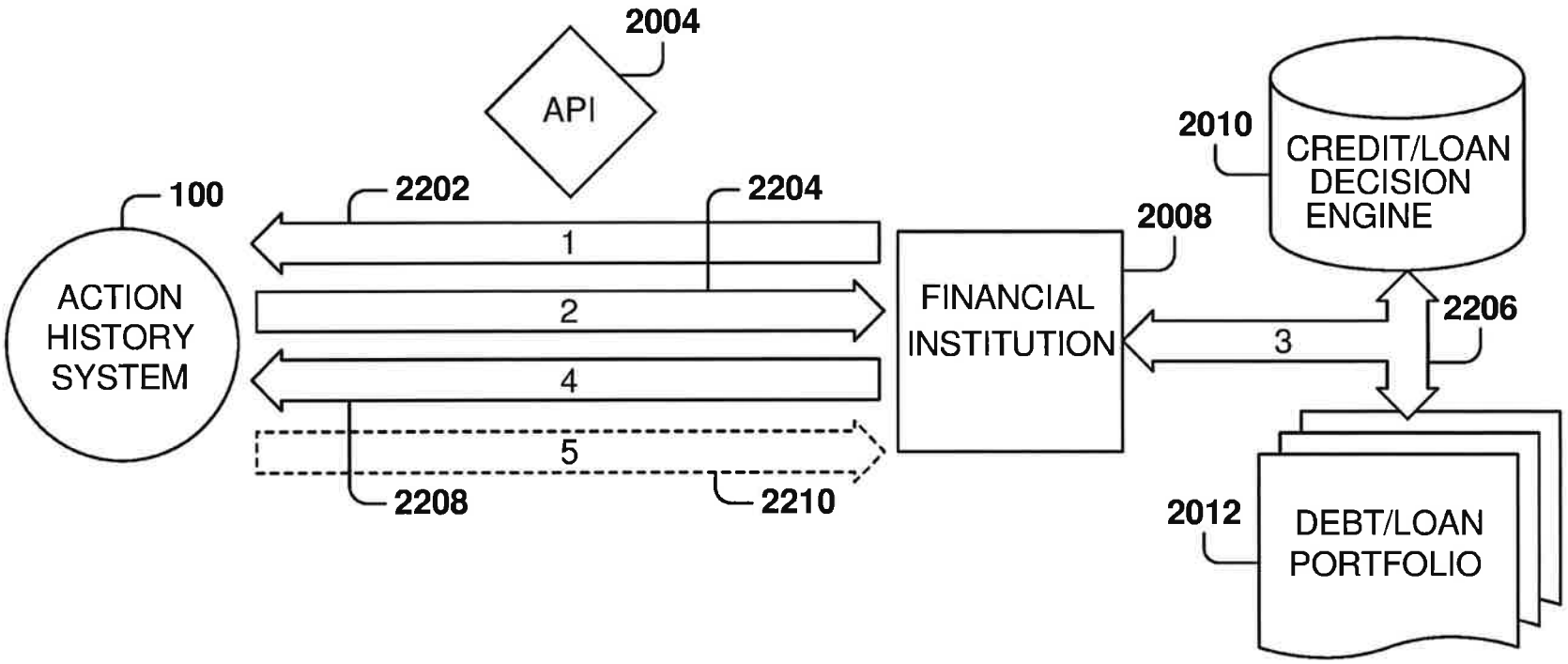
FINANCIAL SERVICES PROSPECTING USE CASE



1. REQUEST FOR OPTED-IN USERS THAT FIT LENDER'S CRITERIA
2. RETURN LIST ALL CONSENTING USERS, WITH ACTION SCORES
3. FI DETERMINES CREDITWORTHINESS OF USER
4. FI SENDS OFFER DIRECT TO XERO USER

FIG. 21

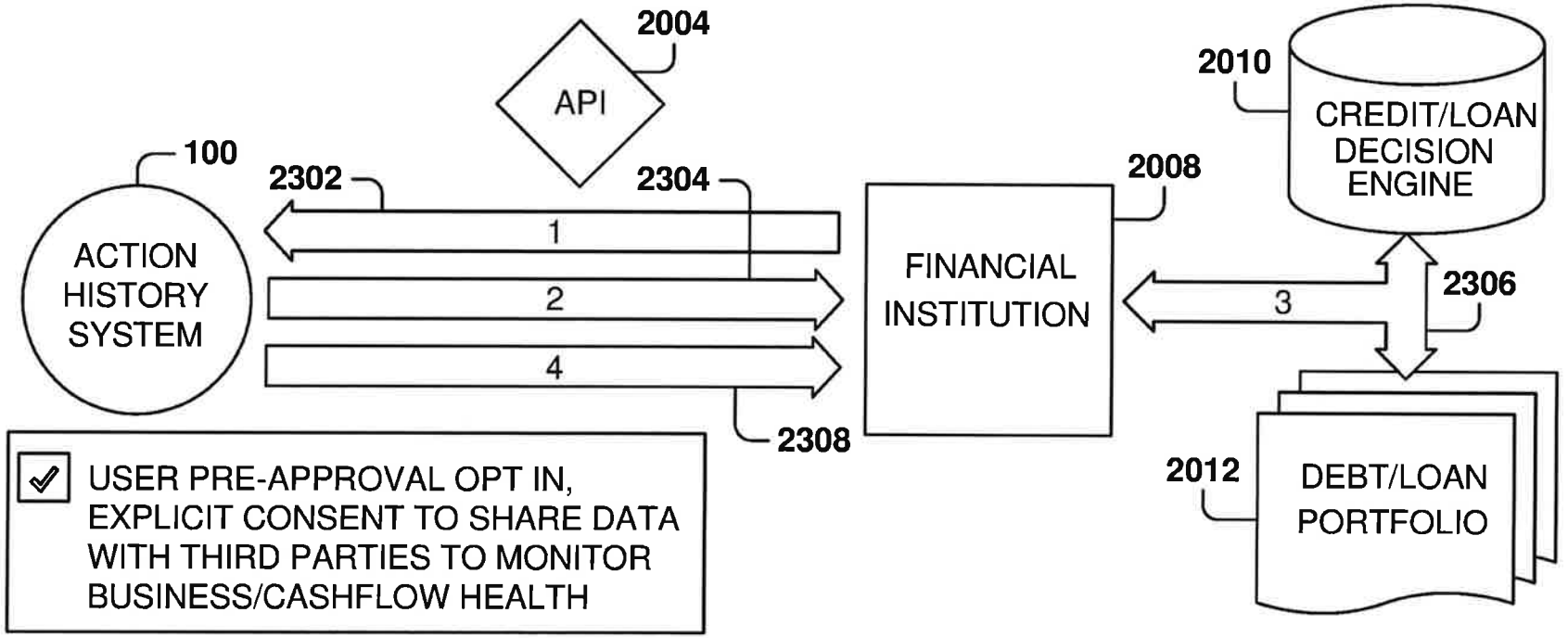
LOAD ASSESSMENT DATA USE



1. USER OPTS IN AND AUTHENTICATES TO THEIR ACCOUNT
2. PUSH ALL REQUIRED FINANCIAL AND USER DATA, ALONG WITH ACTION SCORES
3. FI DETERMINES CREDITWORTHINESS OF USER AND CREDIT TERMS
4. FI SENDS OFFER DIRECT TO USER, WRITES BACK ANY LIABILITIES AND PAYMENTS TO PLATFORM
5. OPTIONAL - FI REMAINS CONNECTED TO PLATFORM FOR FUTURE LOAN OPPORTUNITIES

FIG. 22

HEALTH AND TRADE SCORE ANALYTICS USE



1. REQUEST FOR OPTED-IN USERS THAT FIT FI'S CRITERIA
2. RETURN LIST ALL CONSENTING USERS, WITH NPC VALUE
3. FI USES DATA FOR REPORTING, DECISION MAKING, PORTFOLIO MANAGEMENT, ETC.
4. FI REMAINS CONNECTED ON AN ONGOING BASIS TO MONITOR NPC

FIG. 23

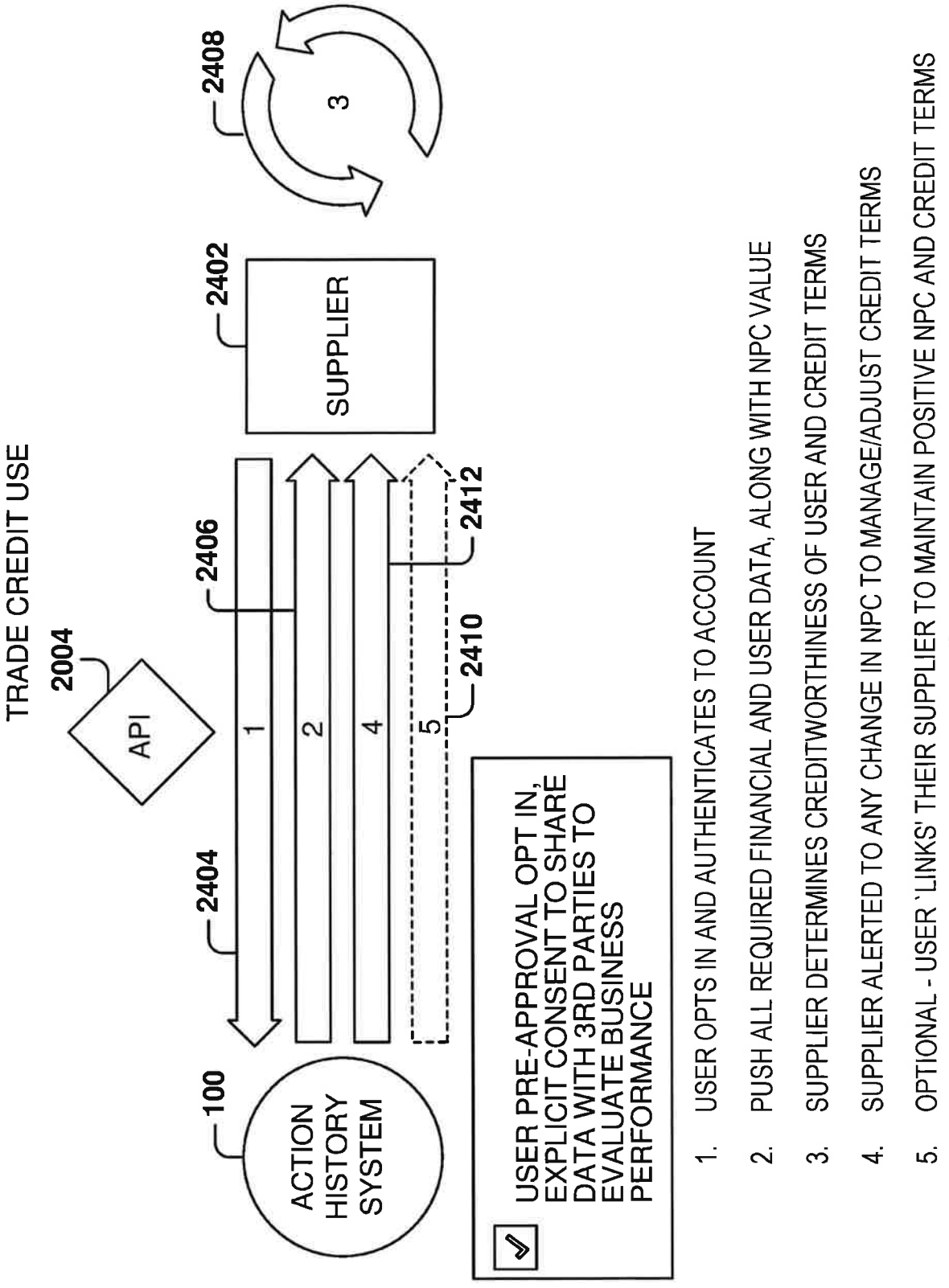
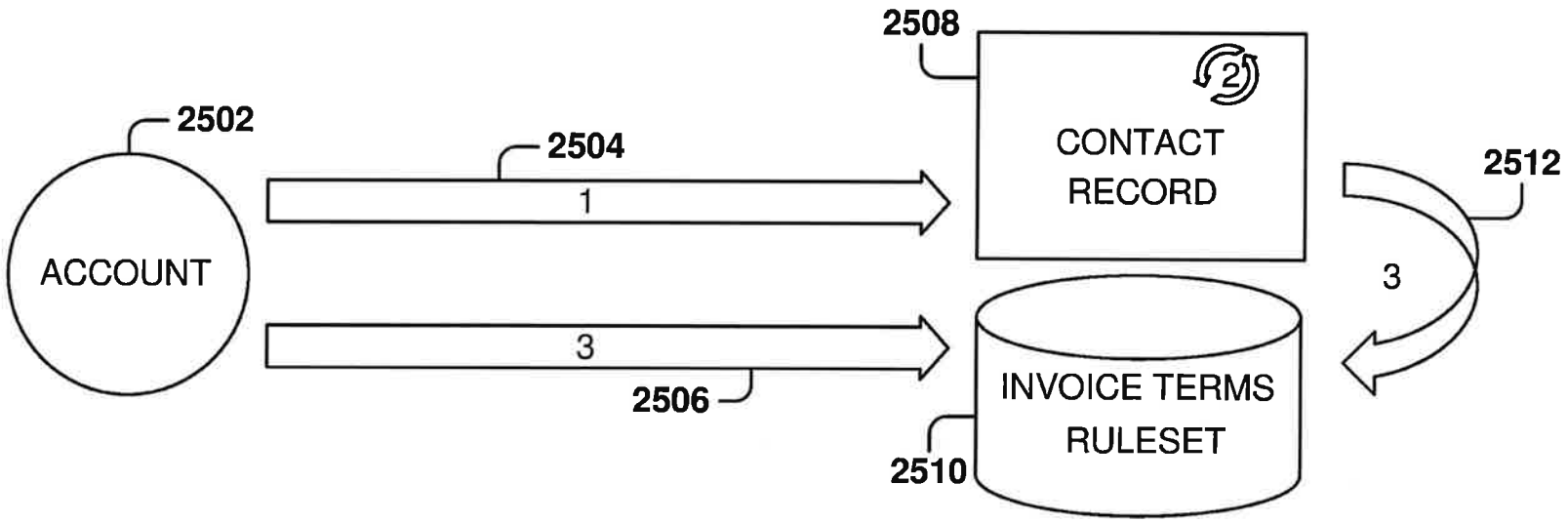

TRADE CREDIT USE
2004
API
2406
2404
100
ACTION HISTORY SYSTEM
1
2
4
5
2410
2412
2402
SUPPLIER
2408
3
USER PRE-APPROVAL OPT IN, EXPLICIT CONSENT TO SHARE DATA WITH 3RD PARTIES TO EVALUATE BUSINESS PERFORMANCE
1. USER OPTS IN AND AUTHENTICATES TO ACCOUNT
2. PUSH ALL REQUIRED FINANCIAL AND USER DATA, ALONG WITH NPC VALUE
3. SUPPLIER DETERMINES CREDITWORTHINESS OF USER AND CREDIT TERMS
4. SUPPLIER ALERTED TO ANY CHANGE IN NPC TO MANAGE/ADJUST CREDIT TERMS
5. OPTIONAL - USER 'LINKS' THEIR SUPPLIER TO MAINTAIN POSITIVE NPC AND CREDIT TERMS

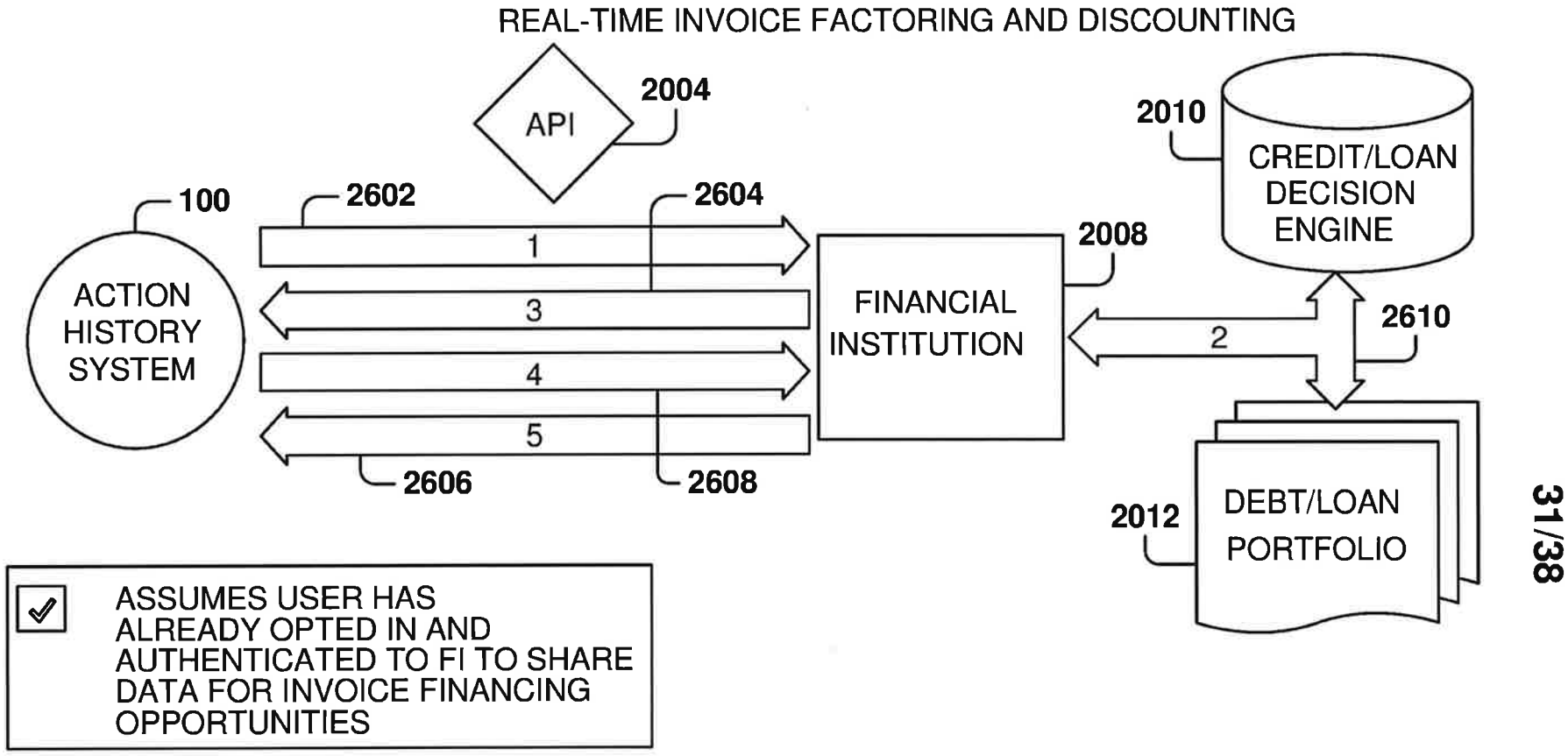
FIG. 24

DYNAMIC INVOICE PAYMENT TERMS SETTINGS



1. CREATE NEW CONTACT RECORD
2. CALCULATE NPC FOR CONTACT
3. TERMS AUTOMATICALLY APPLIED TO INVOICES BASED ON CONTACT ADDED

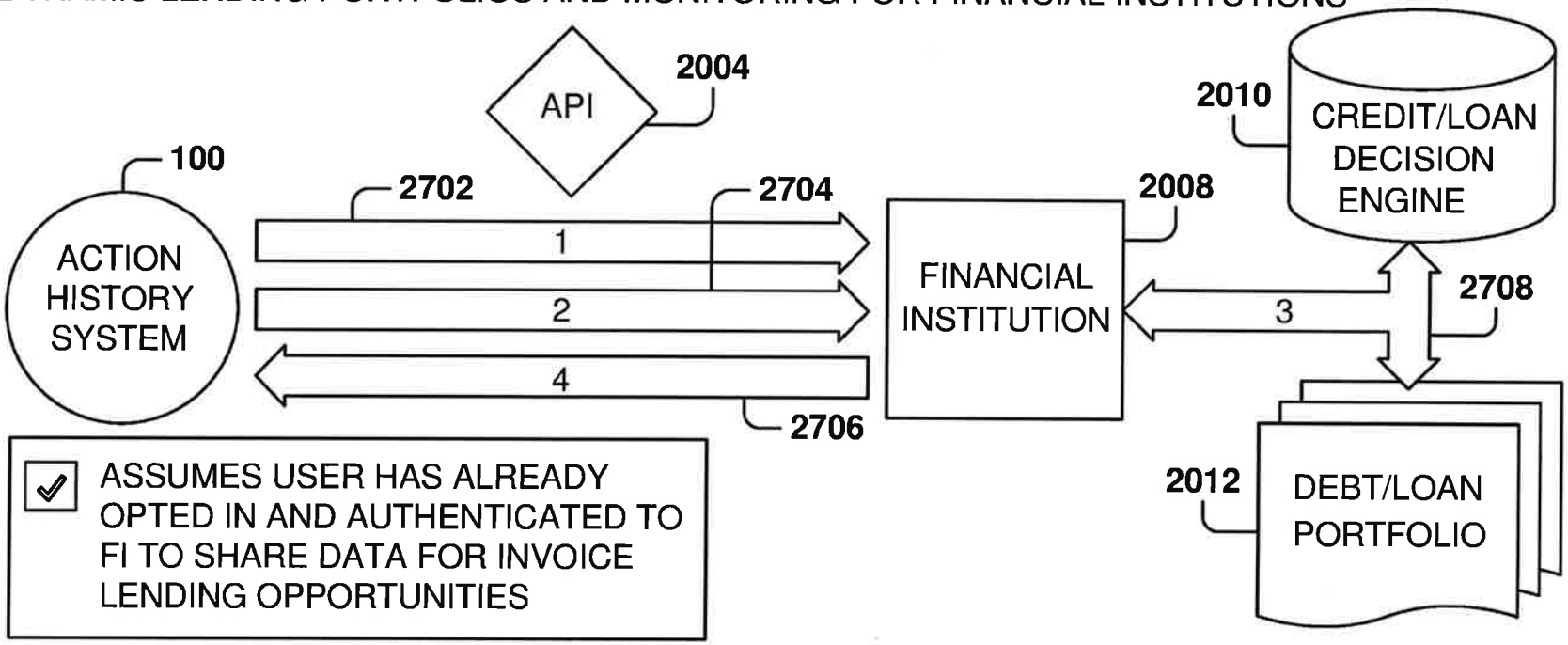
FIG. 25



1. ON A/R INVOICE CREATION, ALERT IS SENT TO FI WITH RELEVANT DETAILS (ACTION SCORES, AMOUNT, ETC.)
2. FI DETERMINES CREDITWORTHINESS OF USER AND CREDIT TERMS
3. RETURN OFFER FOR LINE OF CREDIT WITH TERMS AND RATES SPECIFIC TO THE INVOICE RAISED
4. USER CONFIRMS OFFER (OPTION TO AUTOMATE FOR AUTO FUNDING)
5. FI WRITES LIABILITY AND REPAYMENT SCHEDULE BACK TO PLATFORM AND DEPOSITS FUNDS TO USER'S BANK ACCOUNT

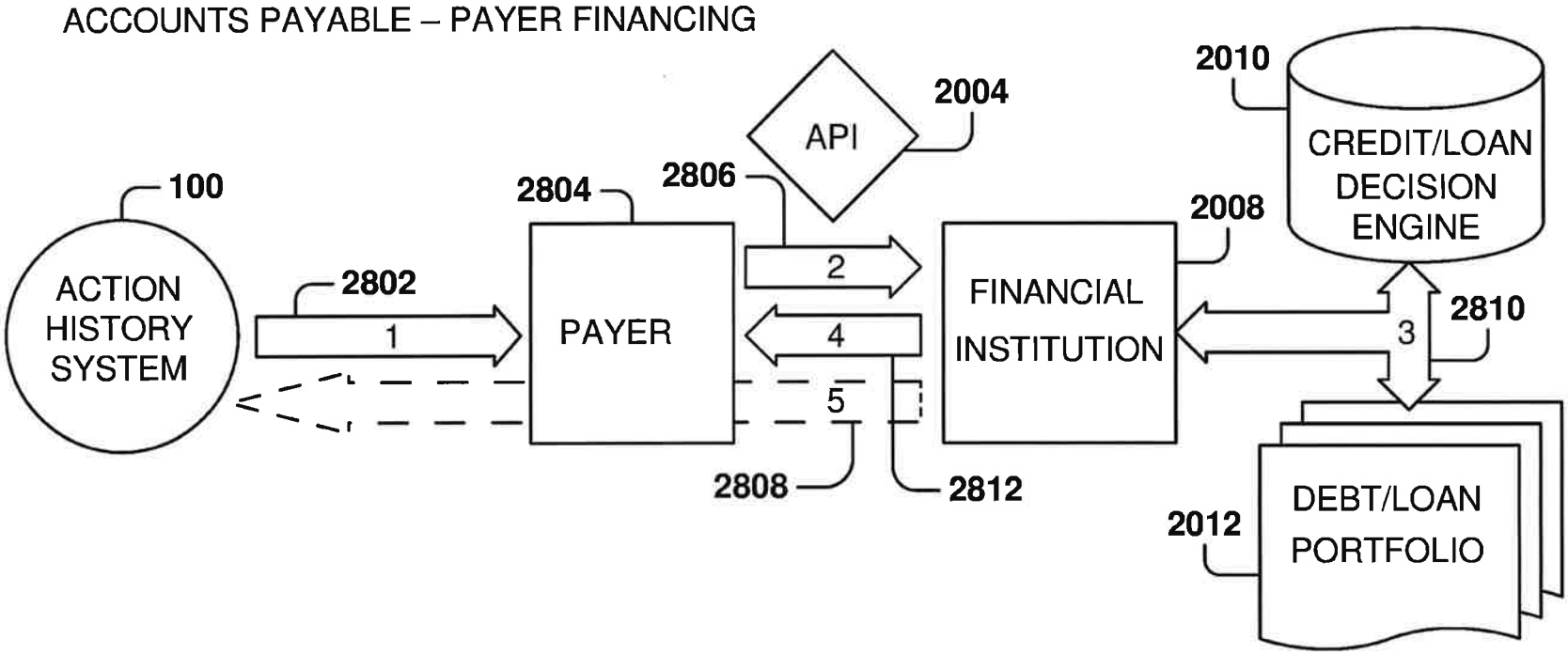
FIG. 26

DYNAMIC LENDING PORTFOLIOS AND MONITORING FOR FINANCIAL INSTITUTIONS



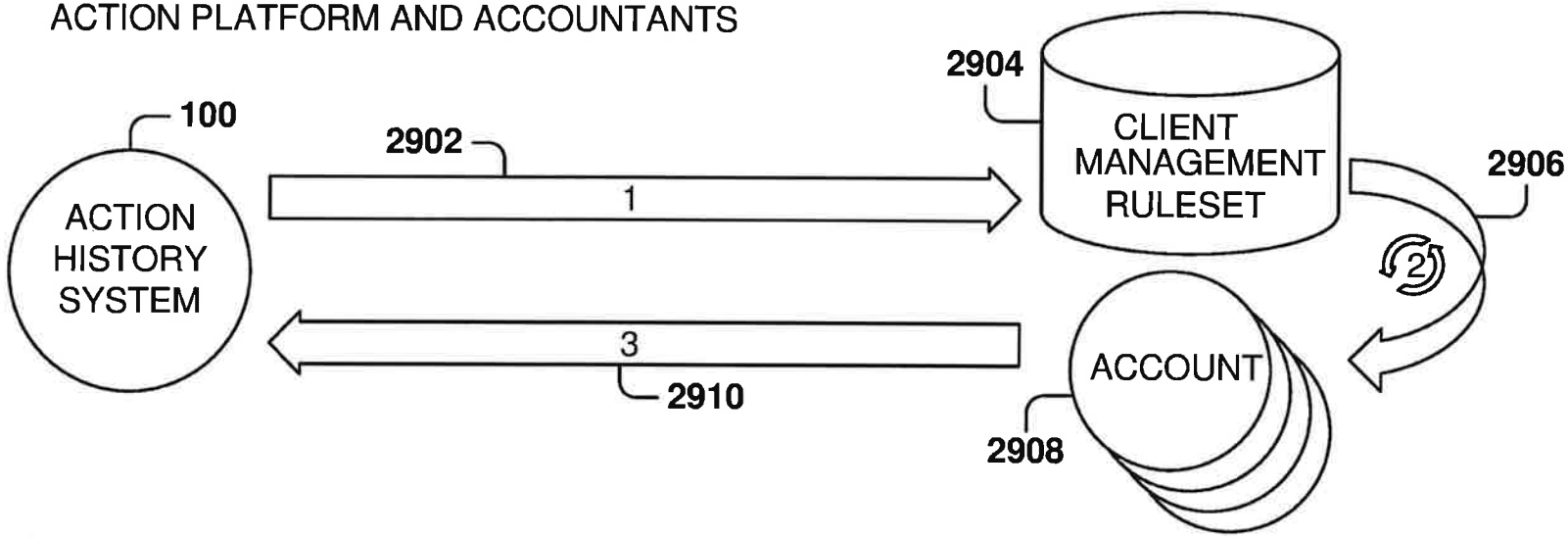
1. FI NOTIFIED OF CHANGE IN NPC
2. PULL ALL REQUIRED FINANCIAL AND USER DATA
3. FI USES DATA TO:
    A. PREDICT DEFAULT
    B. ANTICIPATE EARLY REPAYMENT
    C. OFFER EXTENDED LINES OF CREDIT
    D. PROVIDE SUPPORT FOR BUSINESSES WHO ARE FACING DISTRESS
    E. MANAGE CAPITAL HOLDING IN REAL-TIME; ALLOWING EFFICIENT ALLOCATION
    F. REDUCE RISK, AND THEREFORE LEND MORE
4. PROACTIVE REMEDIATION STEPS TAKEN BY FI

FIG. 27



1. USER ISSUES INVOICE IN THE PLATFORM WITH FINANCE OPTION FOR PAYER
2. PAYER APPLIES FOR FINANCING, PUSH NPC AND INVOICE DETAILS TO FI
3. FI DETERMINES CREDITWORTHINESS OF PAYER AND CREDIT TERMS
4. FI SENDS OFFER AND FUNDS DIRECT TO PAYER.
5. OPTIONAL - IF PAYER IS A PLATFORM USER (AND AUTHENTICATED/OPTED IN), FI WRITES BACK ANY LIABILITIES AND REPAYMENTS TO PLATFORM

FIG. 28



1. SETUP RULES/TRIGGERS INCLUDING:
   A. VARIATION FLAGS: FLUCTUATIONS TRIGGER WORKFLOWS TO REVIEW AND POSSIBLY CORRECT ANOMALIES. MISSING DATA, INCORRECT DATA, POOR QUALITY CONTACTS INFLUENCING POSITION
   B. CLIENT DISCIPLINE WORKFLOWS: ENCOURAGE CLIENTS TO ADD ALL CONTACTS, INVOICES TO XERO FOR FULL PICTURE, SUPERIOR NPC
   C. THRESHOLD MONITORING AND ALERTS DRIVEN BY ACTION SCORE ALGORITHMS, WITH THRESHOLDS FOR CASHFLOW AND/OR PAYMENT TERMS SET BY ACCOUNTANT OR ADVISOR
   D. ACTION SCORE AS A PREDICTIVE CASHFLOW BASELINE ON PLATFORM CASHFLOW FORECAST DASHBOARD
   E. AS FINETUNE - E.G., OPPORTUNITIES TO MODIFY TERMS BASED ON AS AND THE IMPACT TO CASHFLOW
   F. ACCOUNTANT PORTFOLIO - COMPARE AGGREGATED VIEW OF CLIENTS PORTFOLIO ACTION SCORES POSITION
2. REAL-TIME RULE/TRIGGERS APPLIED TO CLIENT ACCOUNTS
3. WORKFLOW(S) CREATED BASED ON RULE PARAMETERS

FIG. 29

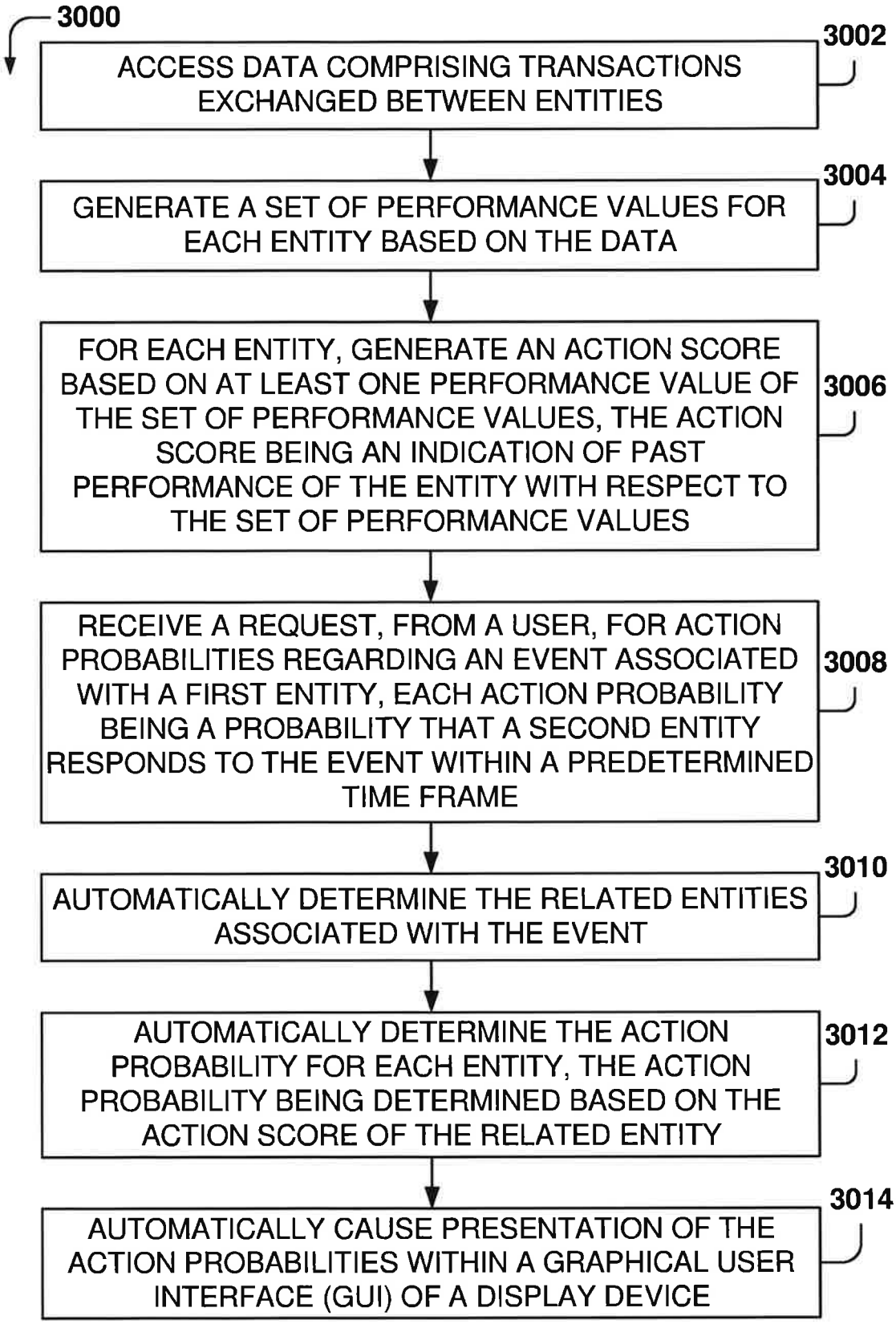

3000
ACCESS DATA COMPRISING TRANSACTIONS EXCHANGED BETWEEN ENTITIES
3002
GENERATE A SET OF PERFORMANCE VALUES FOR EACH ENTITY BASED ON THE DATA
3004
FOR EACH ENTITY, GENERATE AN ACTION SCORE BASED ON AT LEAST ONE PERFORMANCE VALUE OF THE SET OF PERFORMANCE VALUES, THE ACTION SCORE BEING AN INDICATION OF PAST PERFORMANCE OF THE ENTITY WITH RESPECT TO THE SET OF PERFORMANCE VALUES
3006
RECEIVE A REQUEST, FROM A USER, FOR ACTION PROBABILITIES REGARDING AN EVENT ASSOCIATED WITH A FIRST ENTITY, EACH ACTION PROBABILITY BEING A PROBABILITY THAT A SECOND ENTITY RESPONDS TO THE EVENT WITHIN A PREDETERMINED TIME FRAME
3008
AUTOMATICALLY DETERMINE THE RELATED ENTITIES ASSOCIATED WITH THE EVENT
3010
AUTOMATICALLY DETERMINE THE ACTION PROBABILITY FOR EACH ENTITY, THE ACTION PROBABILITY BEING DETERMINED BASED ON THE ACTION SCORE OF THE RELATED ENTITY
3012
AUTOMATICALLY CAUSE PRESENTATION OF THE ACTION PROBABILITIES WITHIN A GRAPHICAL USER INTERFACE (GUI) OF A DISPLAY DEVICE
3014

FIG. 30

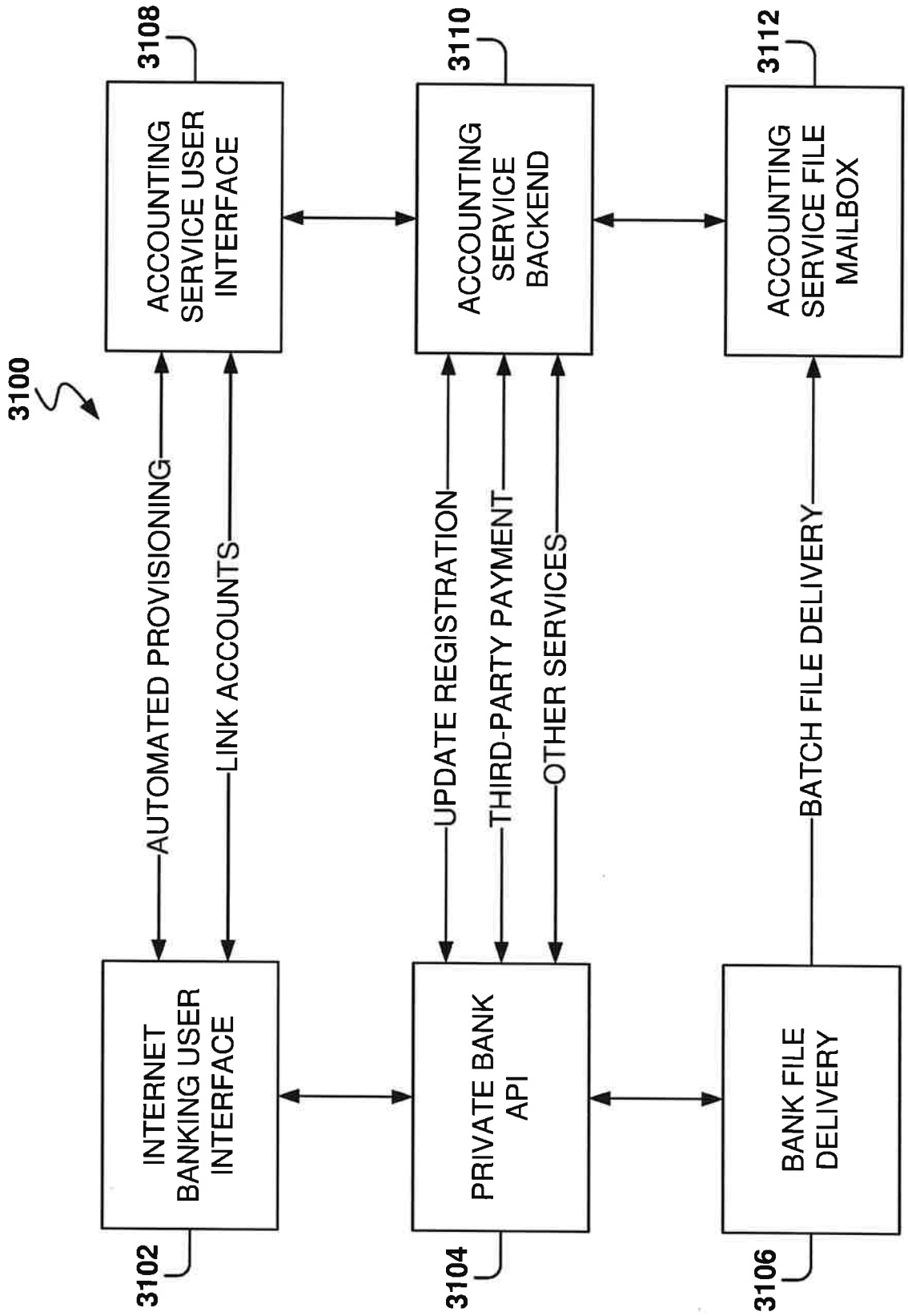

3100
3108
ACCOUNTING SERVICE USER INTERFACE
3110
ACCOUNTING SERVICE BACKEND
3112
ACCOUNTING SERVICE FILE MAILBOX
AUTOMATED PROVISIONING
LINK ACCOUNTS
UPDATE REGISTRATION
THIRD-PARTY PAYMENT
OTHER SERVICES
BATCH FILE DELIVERY
INTERNET BANKING USER INTERFACE
PRIVATE BANK API
BANK FILE DELIVERY
3102
3104
3106

Fig. 31

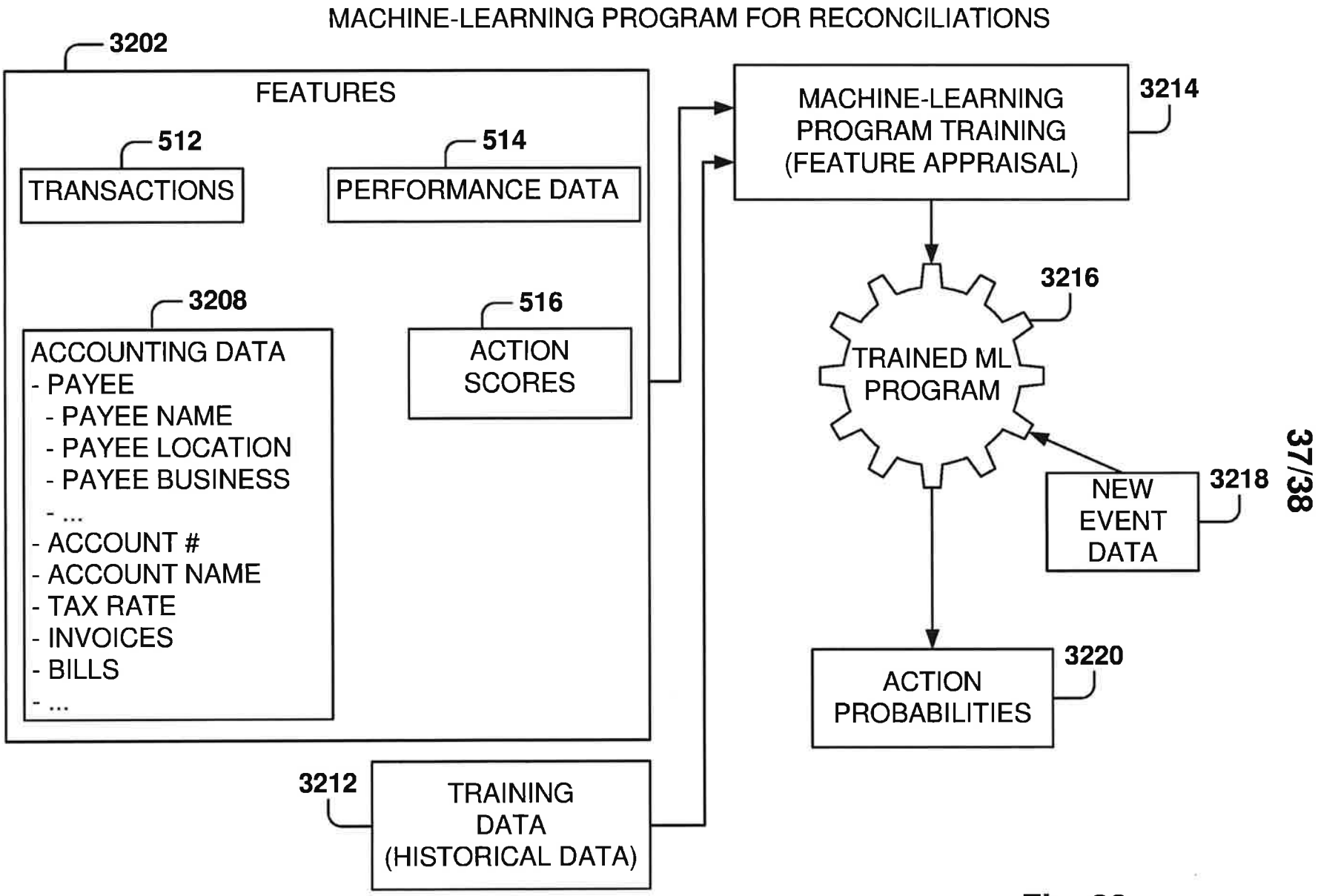

MACHINE-LEARNING PROGRAM FOR RECONCILIATIONS
3202
FEATURES
512
TRANSACTIONS
514
PERFORMANCE DATA
3208
ACCOUNTING DATA
- PAYEE
- PAYEE NAME
- PAYEE LOCATION
- PAYEE BUSINESS
- ...
- ACCOUNT #
- ACCOUNT NAME
- TAX RATE
- INVOICES
- BILLS
- ...
516
ACTION SCORES
3212
TRAINING DATA (HISTORICAL DATA)
MACHINE-LEARNING PROGRAM TRAINING (FEATURE APPRAISAL)
3214
3216
TRAINED ML PROGRAM
3218
NEW EVENT DATA
3220
ACTION PROBABILITIES

Fig. 32

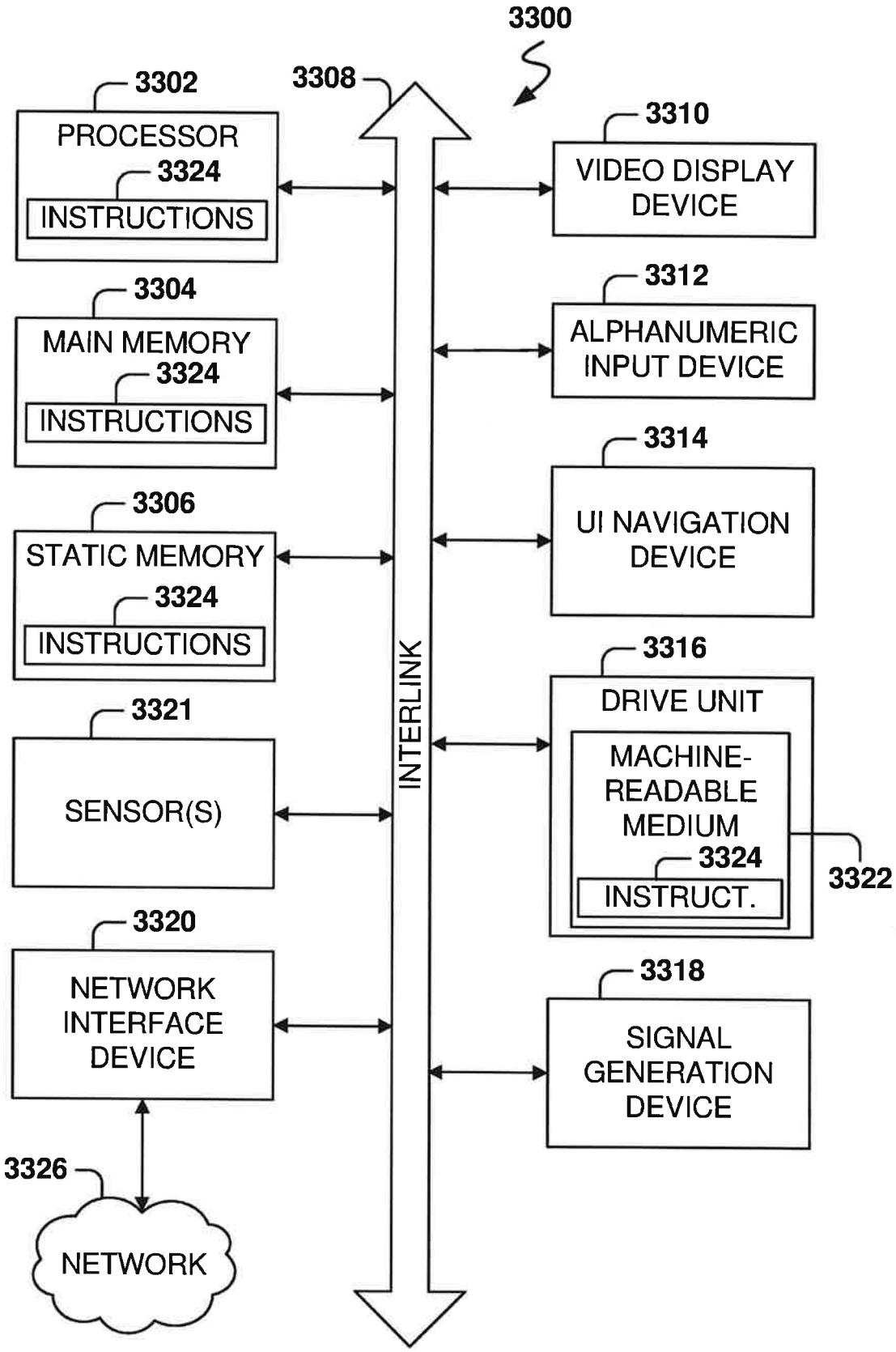

3300
3308
3302
PROCESSOR
3324
INSTRUCTIONS
3304
MAIN MEMORY
3324
INSTRUCTIONS
3306
STATIC MEMORY
3324
INSTRUCTIONS
3321
SENSOR(S)
3320
NETWORK INTERFACE DEVICE
3326
NETWORK
INTERLINK
3310
VIDEO DISPLAY DEVICE
3312
ALPHANUMERIC INPUT DEVICE
3314
UI NAVIGATION DEVICE
3316
DRIVE UNIT
MACHINE-READABLE MEDIUM
3324
INSTRUCT.
3322
3318
SIGNAL GENERATION DEVICE

FIG. 33