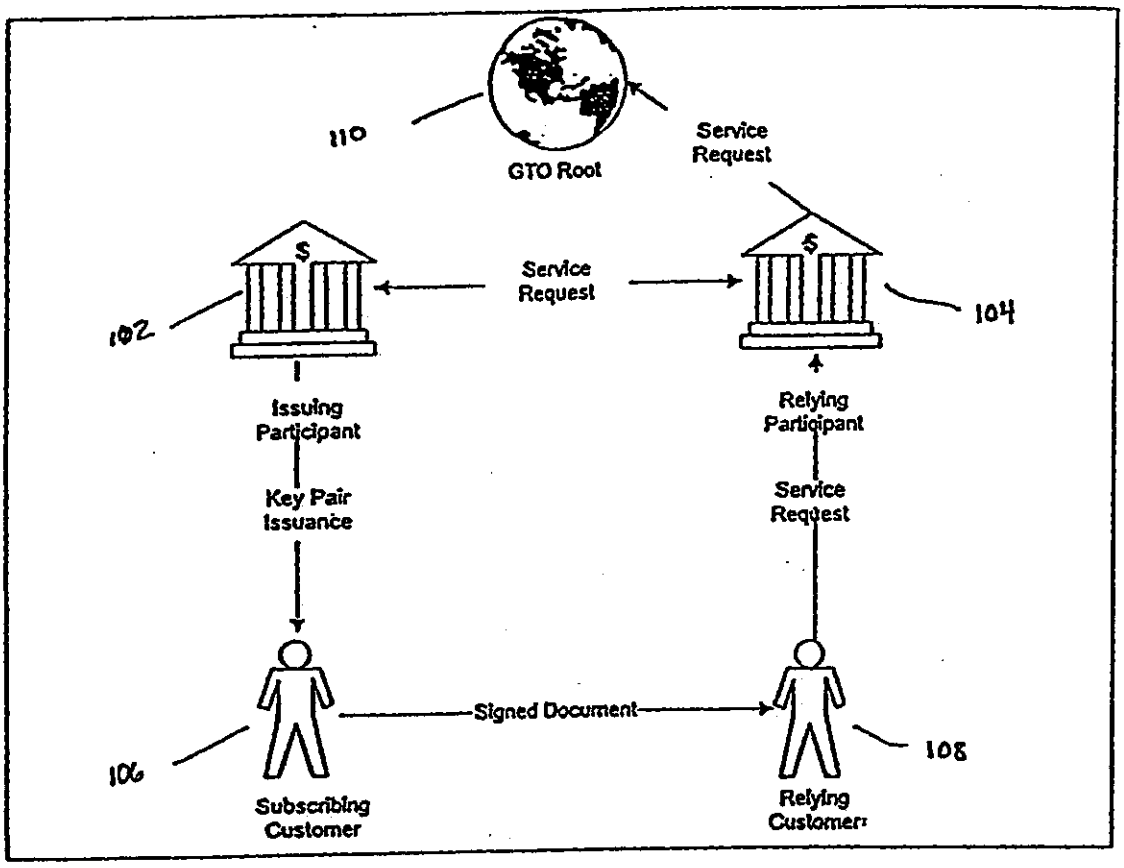

110
GTO Root
Service Request
Service Request
102
104
Issuing Participant
Relying Participant
Key Pair Issuance
Service Request
Signed Document
106
108
Subscribing Customer
Relying Customer

FIG. 1

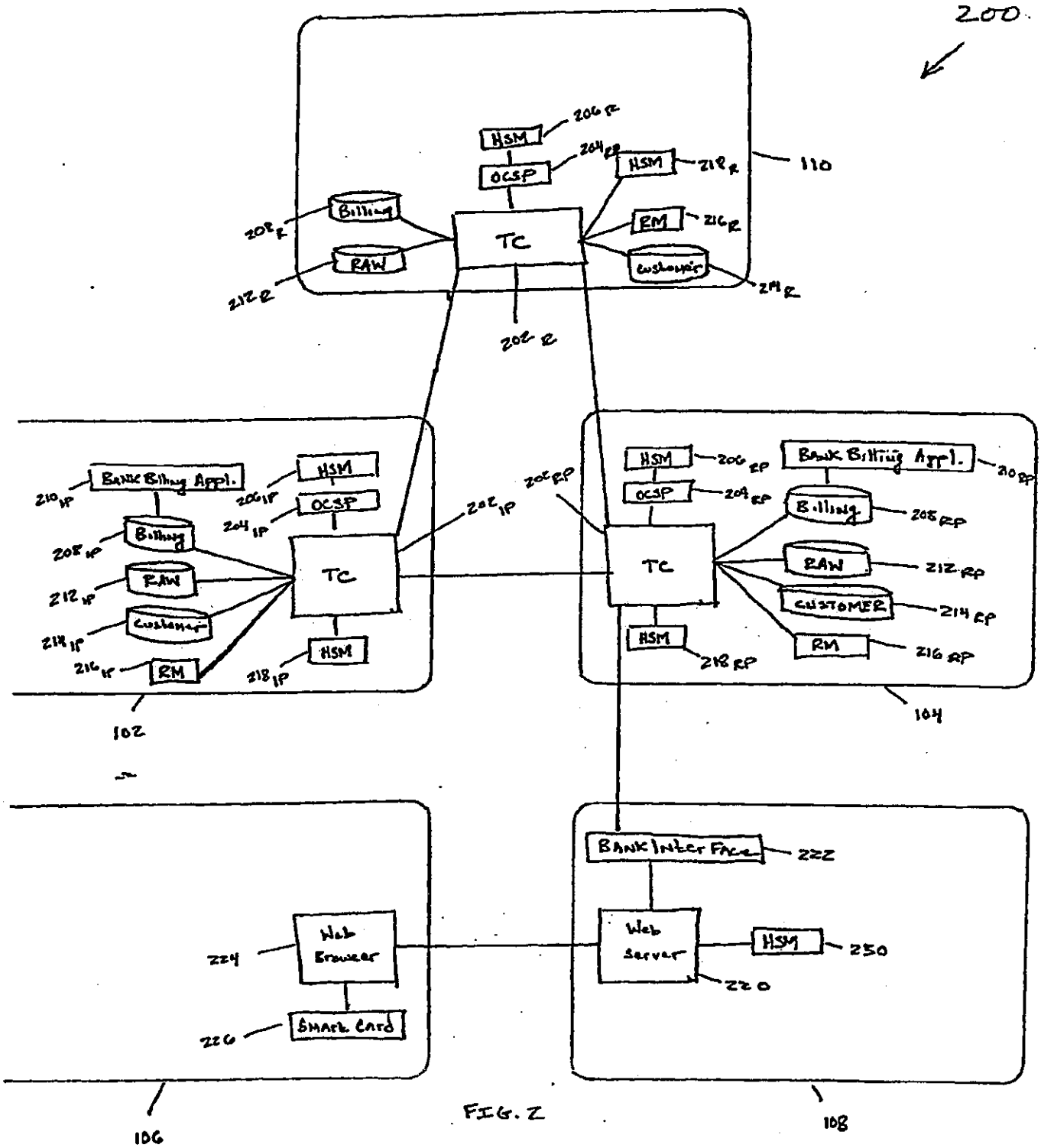

200
HSM
OCSP
HSM
110
Billing
TC
RM
RAW
Customer
TC
Bank Billing Appl.
HSM
OCSP
Billing
RAW
Customer
RM
TC
HSM
102
HSM
OCSP
Bank Billing Appl.
Billing
RAW
CUSTOMER
RM
HSM
104
Bank Inter Face
Web Browser
Smart Card
Web Server
HSM
106
108

FIG. 2

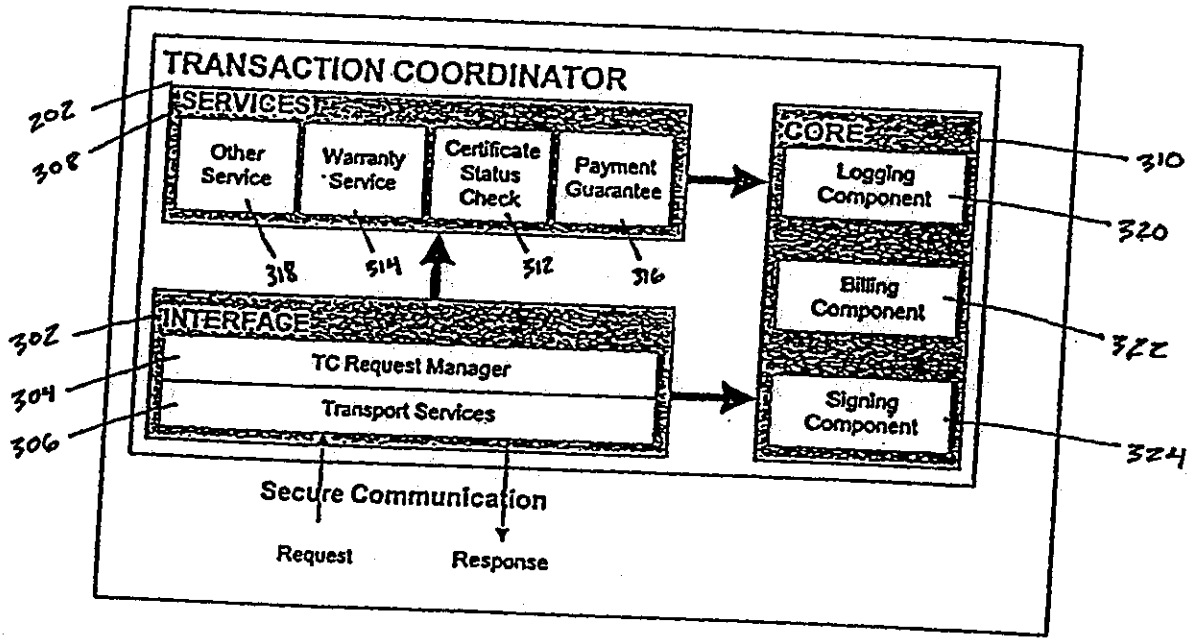

TRANSACTION COORDINATOR
SERVICES
Other Service
Warranty Service
Certificate Status Check
Payment Guarantee
CORE
Logging Component
Billing Component
Signing Component
INTERFACE
TC Request Manager
Transport Services
Secure Communication
Request
Response
202
308
318
314
312
316
310
320
322
324
302
304
306

Fig. 3

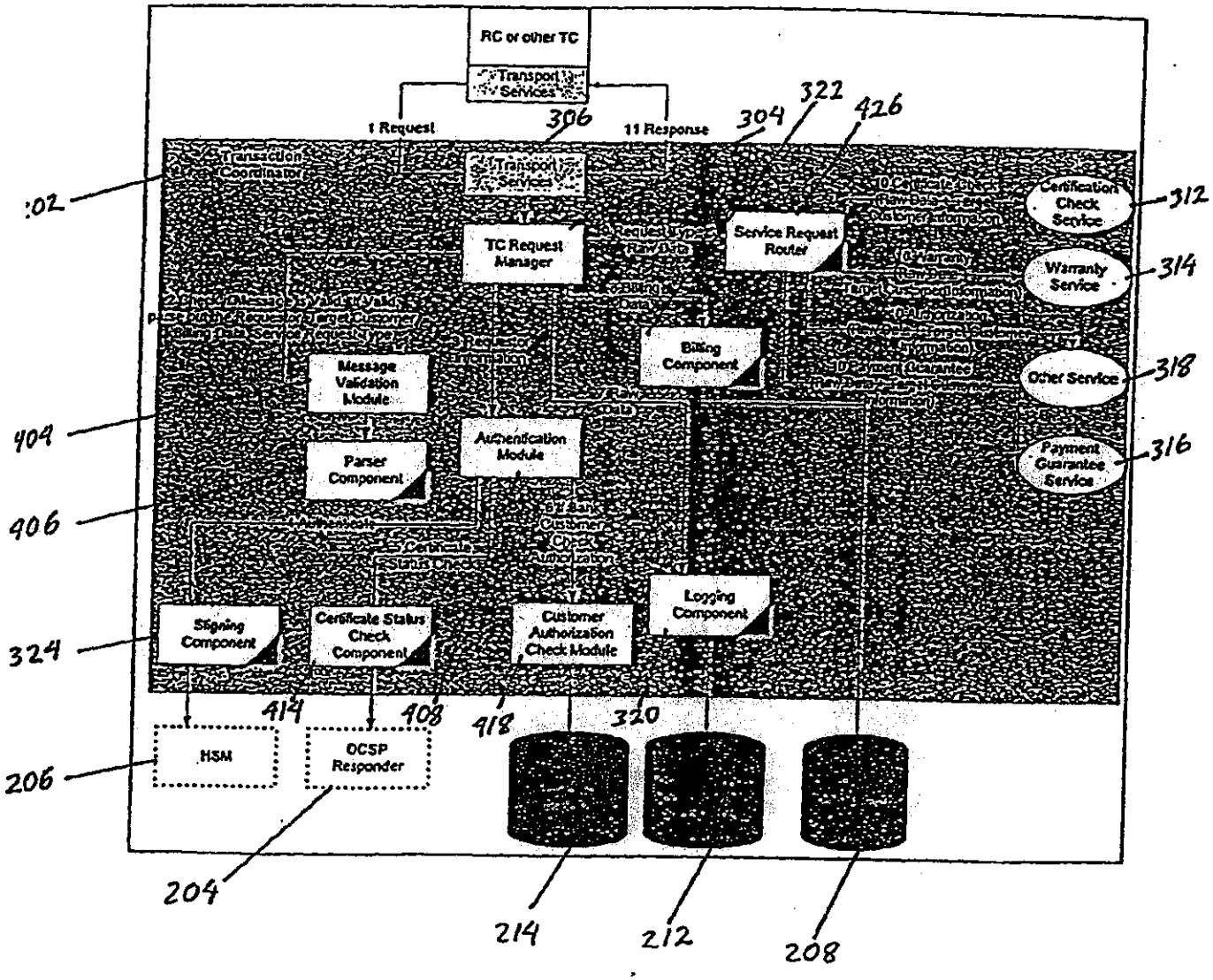

RC or other TC
Transport Services
1 Request
11 Response
306
304
322
426
Transaction Coordinator
Transport Services
TC Request Manager
Service Request Router
Certification Check Service
Warranty Service
Other Service
Payment Guarantee Service
Billing Component
Message Validation Module
Parser Component
Authentification Module
Signing Component
Certificate Status Check Component
Customer Authorization Check Module
Logging Component
HSM
OCSP Responder
202
404
406
324
414
408
418
320
206
204
214
212
208
312
314
318
316

FIG. 4

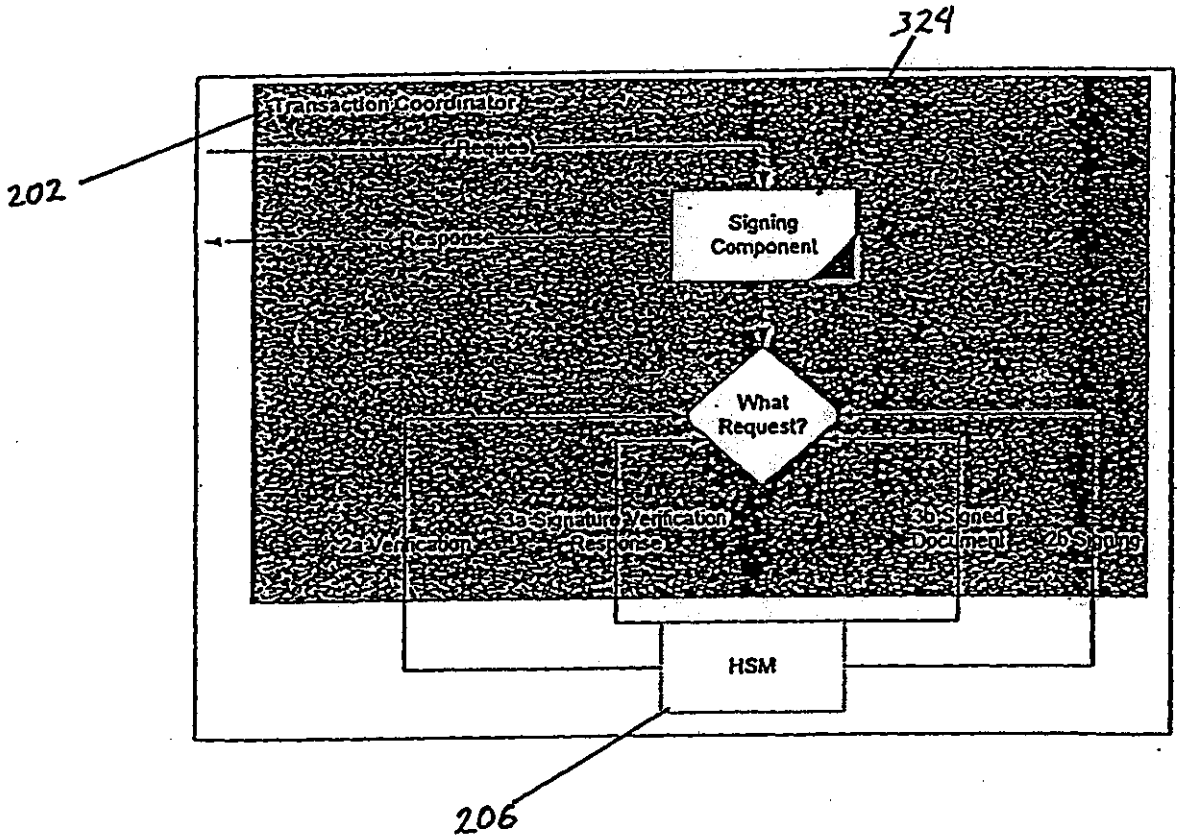

329
202
Transaction Coordinator
Request
Response
Signing Component
What Request?
3a Signature Verification
Response
3b Signed Document
2b Signing
HSM
206

FIG. 5

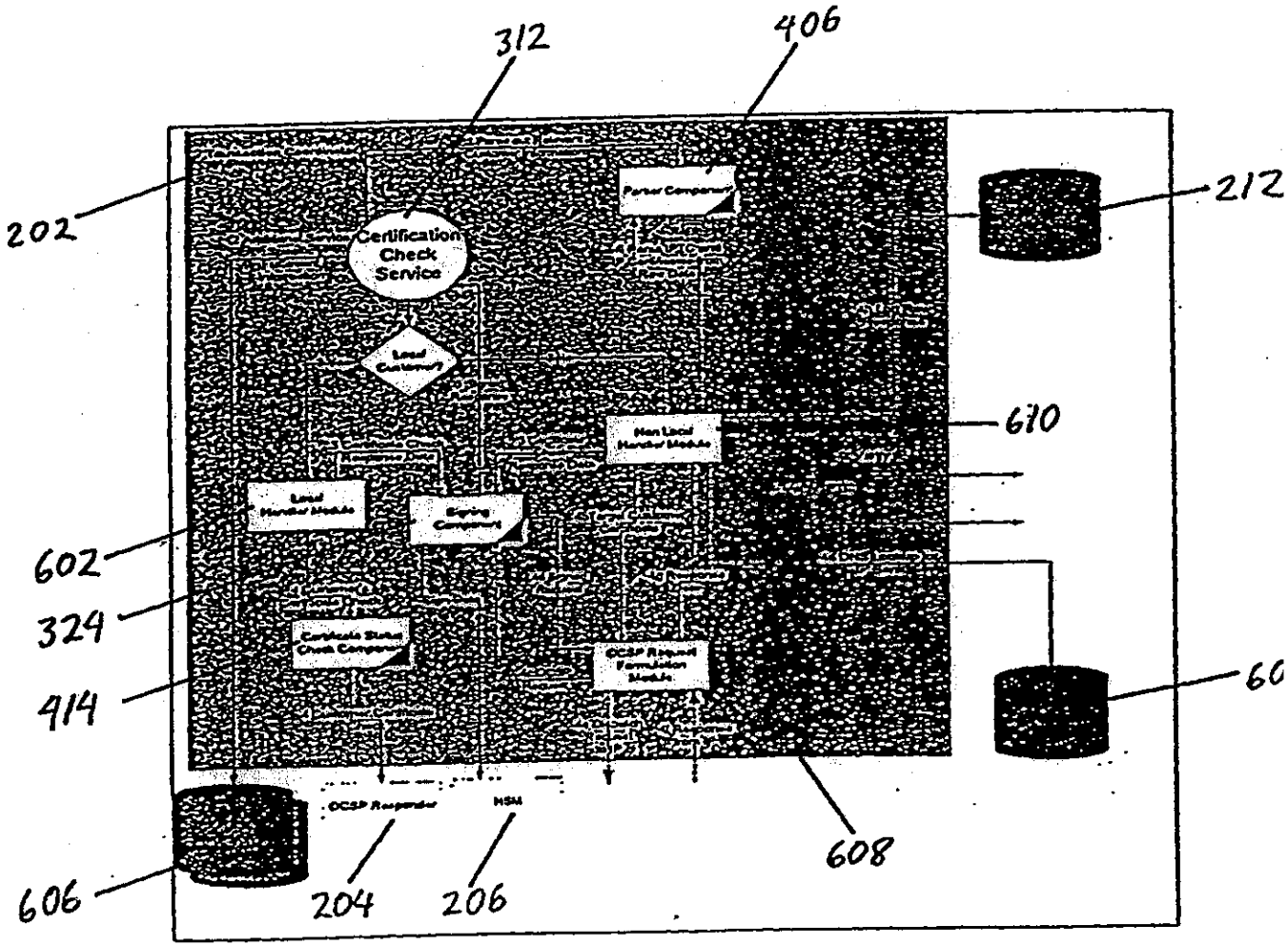

312
406
202
212
Certification Check Service
610
602
324
414
606
204
206
608

FIG. 6

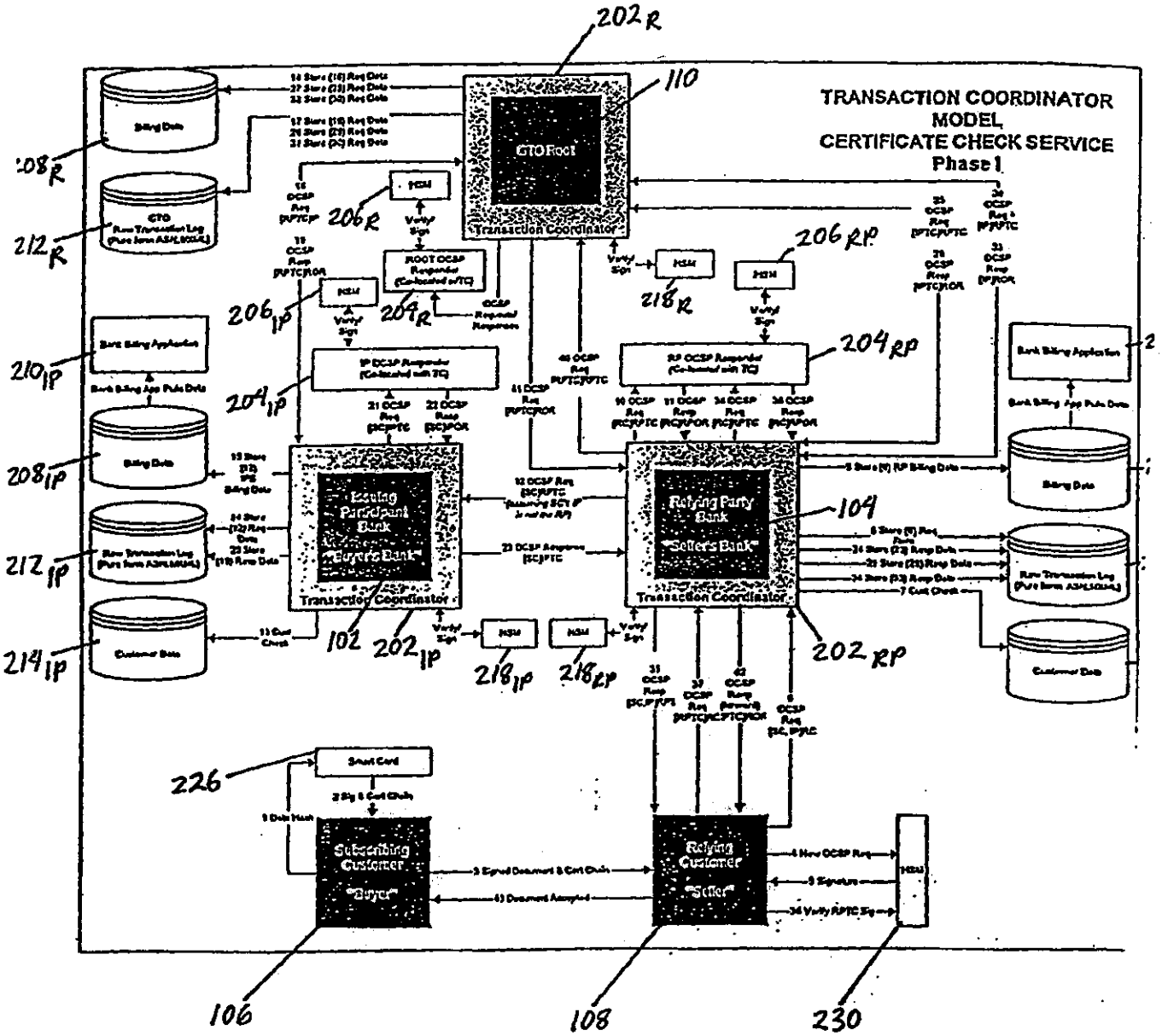

TRANSACTION COORDINATOR
MODEL
CERTIFICATE CHECK SERVICE
Phase 1
202R
110
GTO Root
Transaction Coordinator
208R
212R
206R
206RP
218R
204RP
206IP
209R
210IP
204IP
208IP
212IP
214IP
Issuing Participant Bank
"Buyer's Bank"
Transaction Coordinator
Relying Party Bank
"Seller's Bank"
Transaction Coordinator
104
102
202IP
218IP
218RP
202RP
226
Subscribing Customer
"Buyer"
Relying Customer
"Seller"
106
108
230

FIG. 7

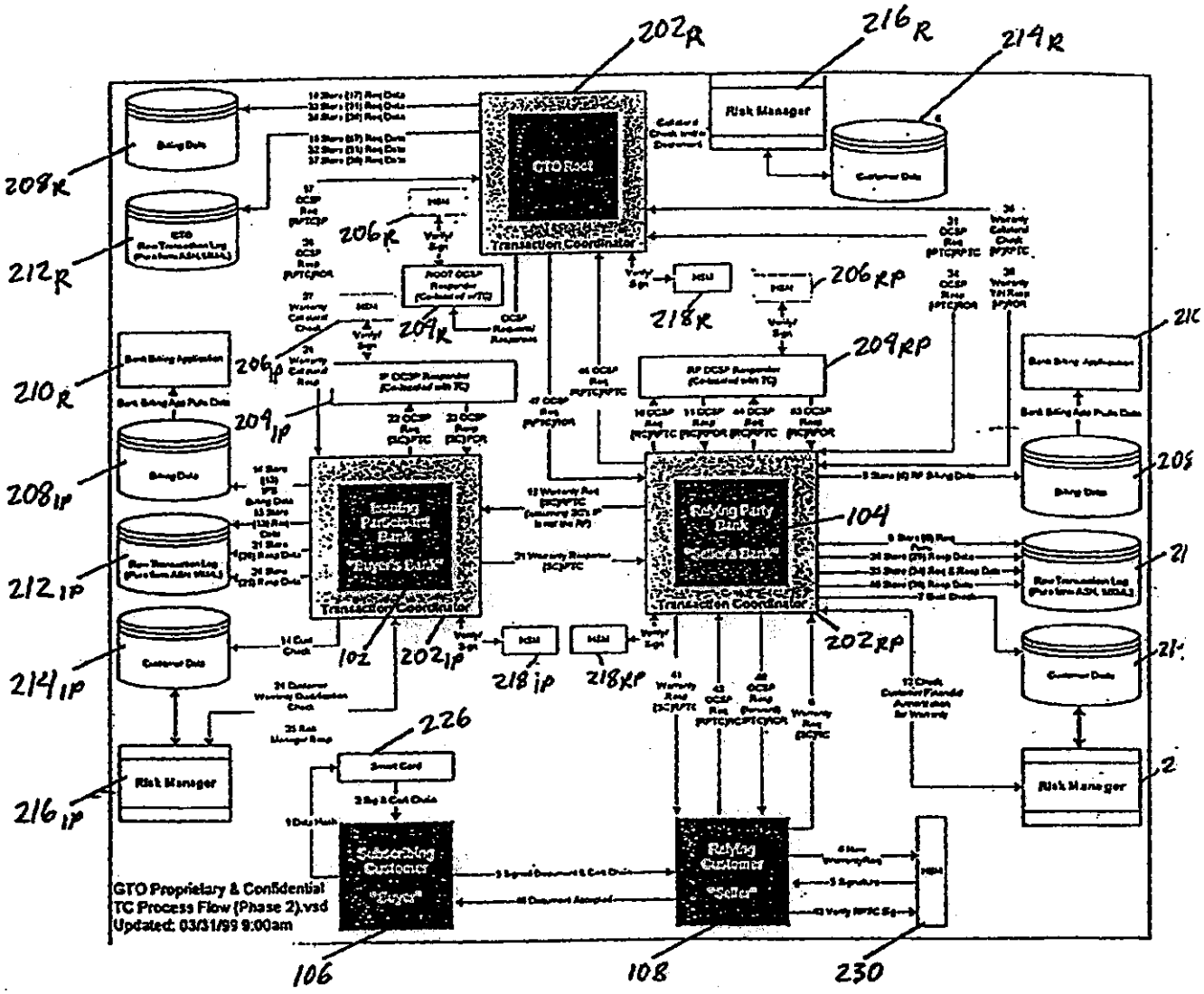

202R
216R
214R
208R
212R
206R
206RP
218R
209R
209RP
210R
206IP
209IP
208IP
212IP
214IP
216IP
218IP
218RP
202IP
202RP
102
104
226
106
108
230
GTO Root
Transaction Coordinator
Risk Manager
Issuing Participant Bank "Buyer's Bank"
Relying Party Bank "Seller's Bank"
Subscribing Customer "Buyer"
Relying Customer "Seller"
GTO Proprietary & Confidential
TC Process Flow (Phase 2).vsd
Updated: 03/31/99 9:00am

FIG. 8

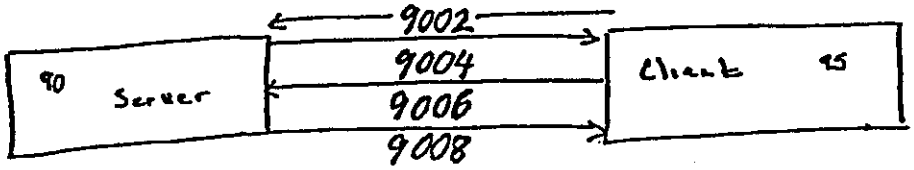

9002
9004
9006
9008
90
Server
Client
95

FIG. 9

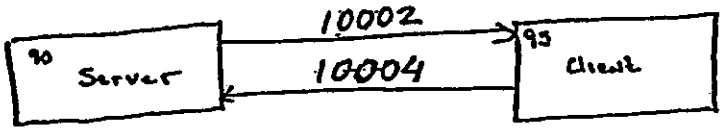

10002
10004
90
Server
95
Client

FIG. 10

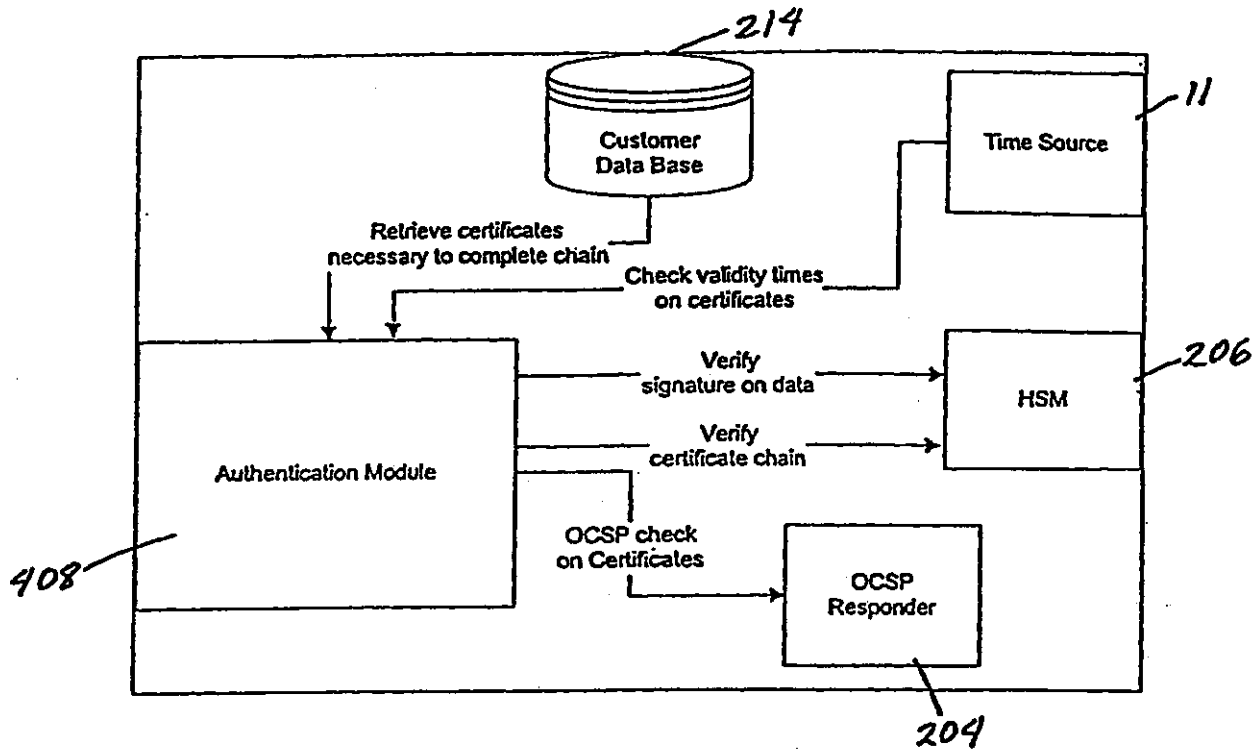

214
Customer Data Base
Time Source
11
Retrieve certificates necessary to complete chain
Check validity times on certificates
Verify signature on data
Verify certificate chain
HSM
206
Authentication Module
OCSP check on Certificates
OCSP Responder
408
204

FIG. 11

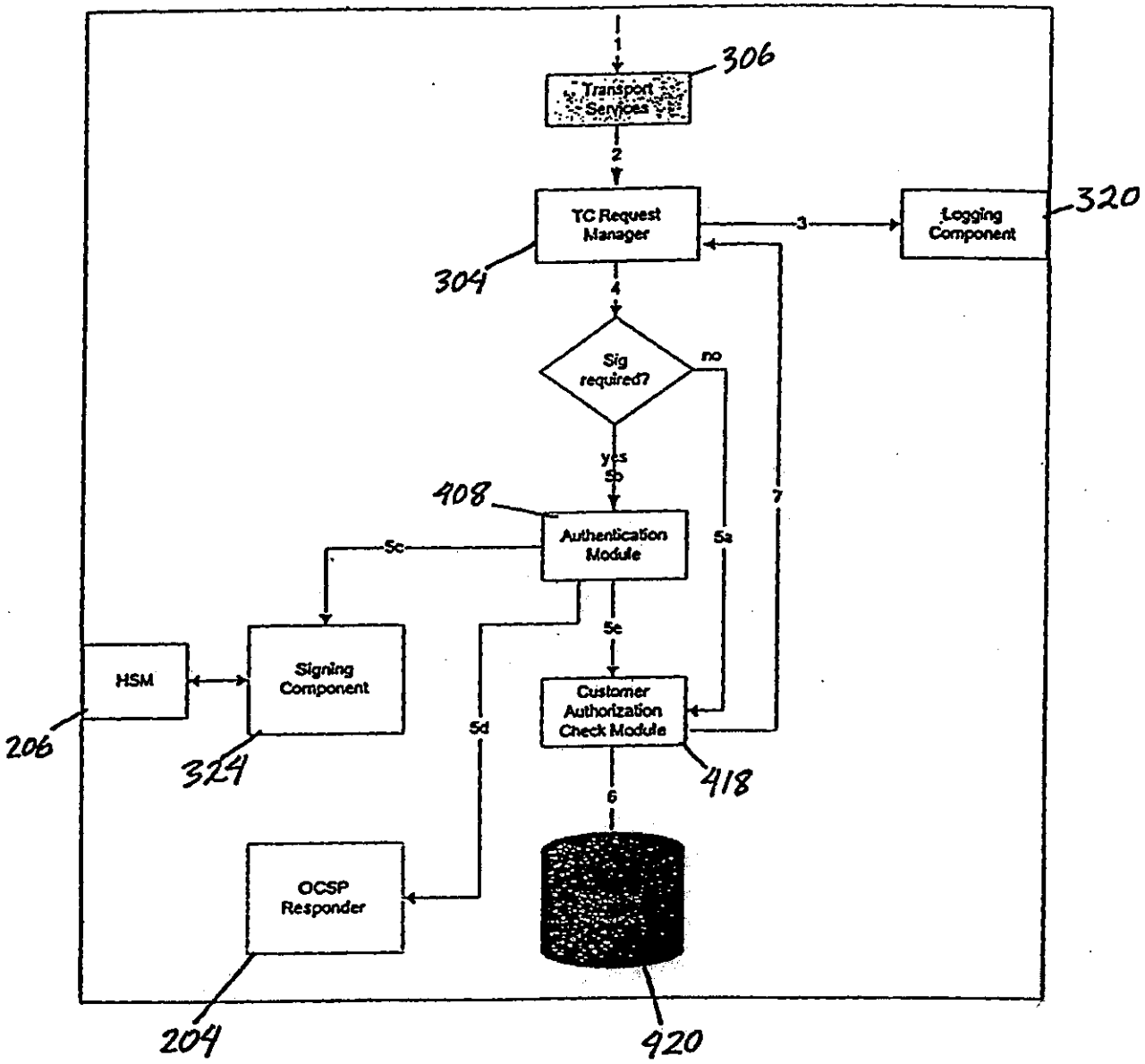

1
Transport Services
306
2
TC Request Manager
3
Logging Component
320
304
4
Sig required?
no
yes
5b
408
Authentication Module
5c
5a
7
5e
HSM
Signing Component
Customer Authorization Check Module
5d
418
206
324
6
OCSP Responder
204
920

FIG. 12

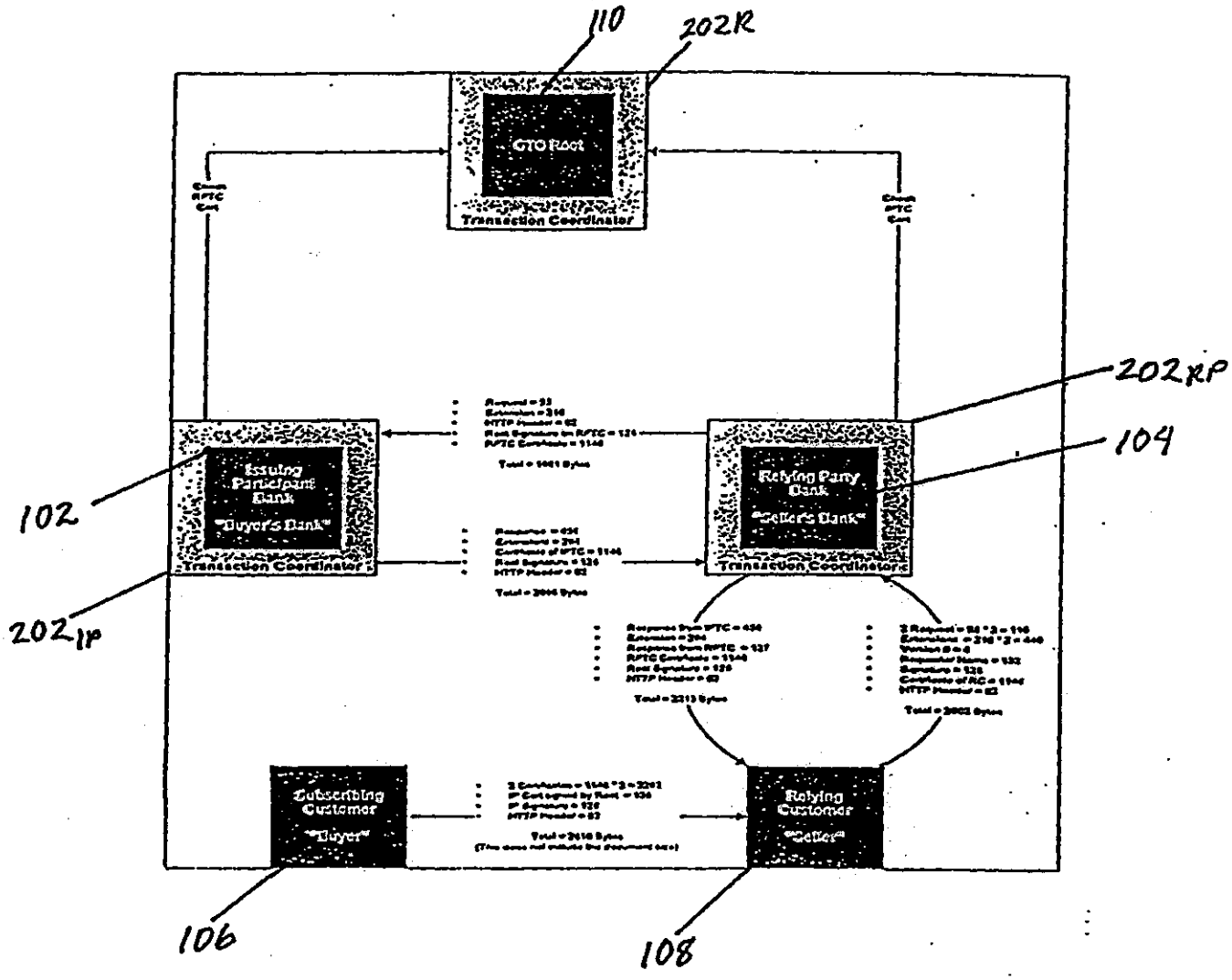

110
202R
GTO Root
Transaction Coordinator
202RP
104
102
Issuing Participant Bank
"Buyer's Bank"
Transaction Coordinator
Relying Party Bank
"Seller's Bank"
Transaction Coordinator
202IP
Subscribing Customer
"Buyer"
Relying Customer
"Seller"
106
108

FIG. 13

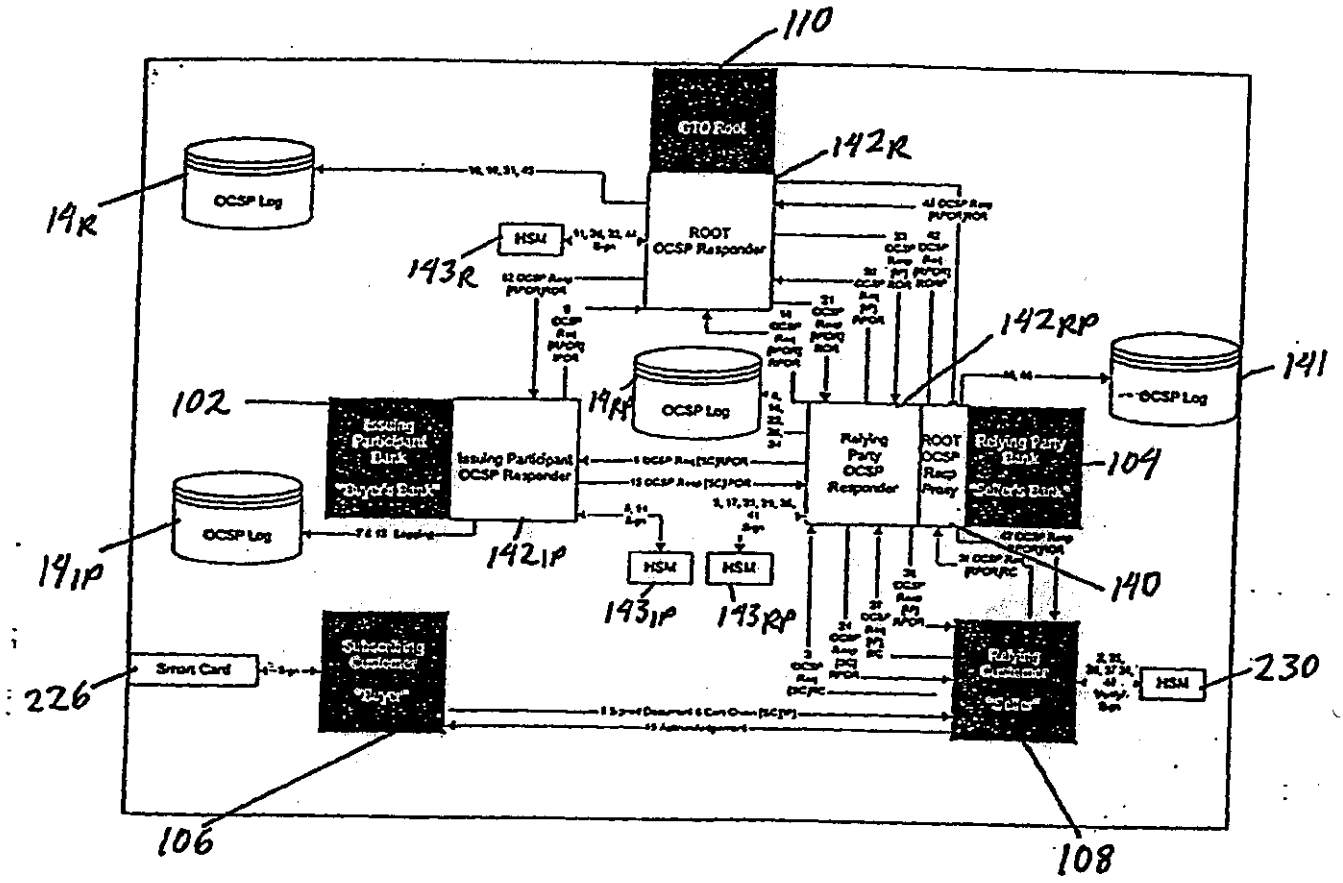

110
GTO Root
142R
OCSP Log
19R
HSM
143R
ROOT
OCSP Responder
142RP
141
102
OCSP Log
19RP
Issuing
Participant
Bank
"Buyer's Bank"
Issuing Participant
OCSP Responder
Relying
Party
OCSP
Responder
ROOT
OCSP
Resp
Proxy
Relying Party
Bank
"Seller's Bank"
104
OCSP Log
19IP
142IP
HSM
HSM
143IP
143RP
140
Subscribing
Customer
"Buyer"
Smart Card
226
Relying
Customer
"Seller"
HSM
230
106
108

FIG. 14