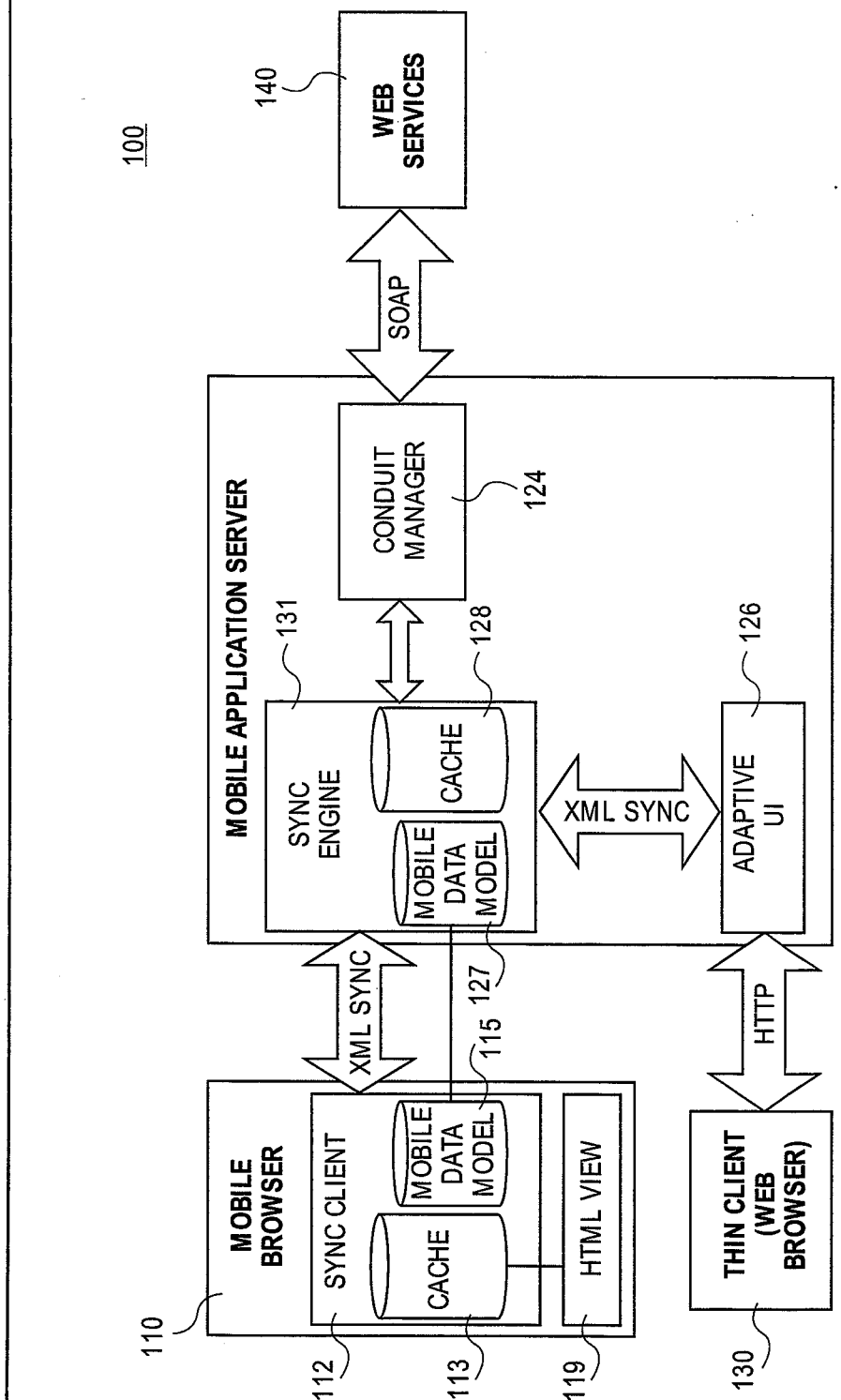

100
140
WEB SERVICES
SOAP
MOBILE APPLICATION SERVER
CONDUIT MANAGER
124
131
128
126
SYNC ENGINE
CACHE
MOBILE DATA MODEL
XML SYNC
ADAPTIVE UI
XML SYNC
127
115
HTTP
MOBILE BROWSER
SYNC CLIENT
MOBILE DATA MODEL
CACHE
HTML VIEW
THIN CLIENT (WEB BROWSER)
110
112
113
119
130

FIG. 1A

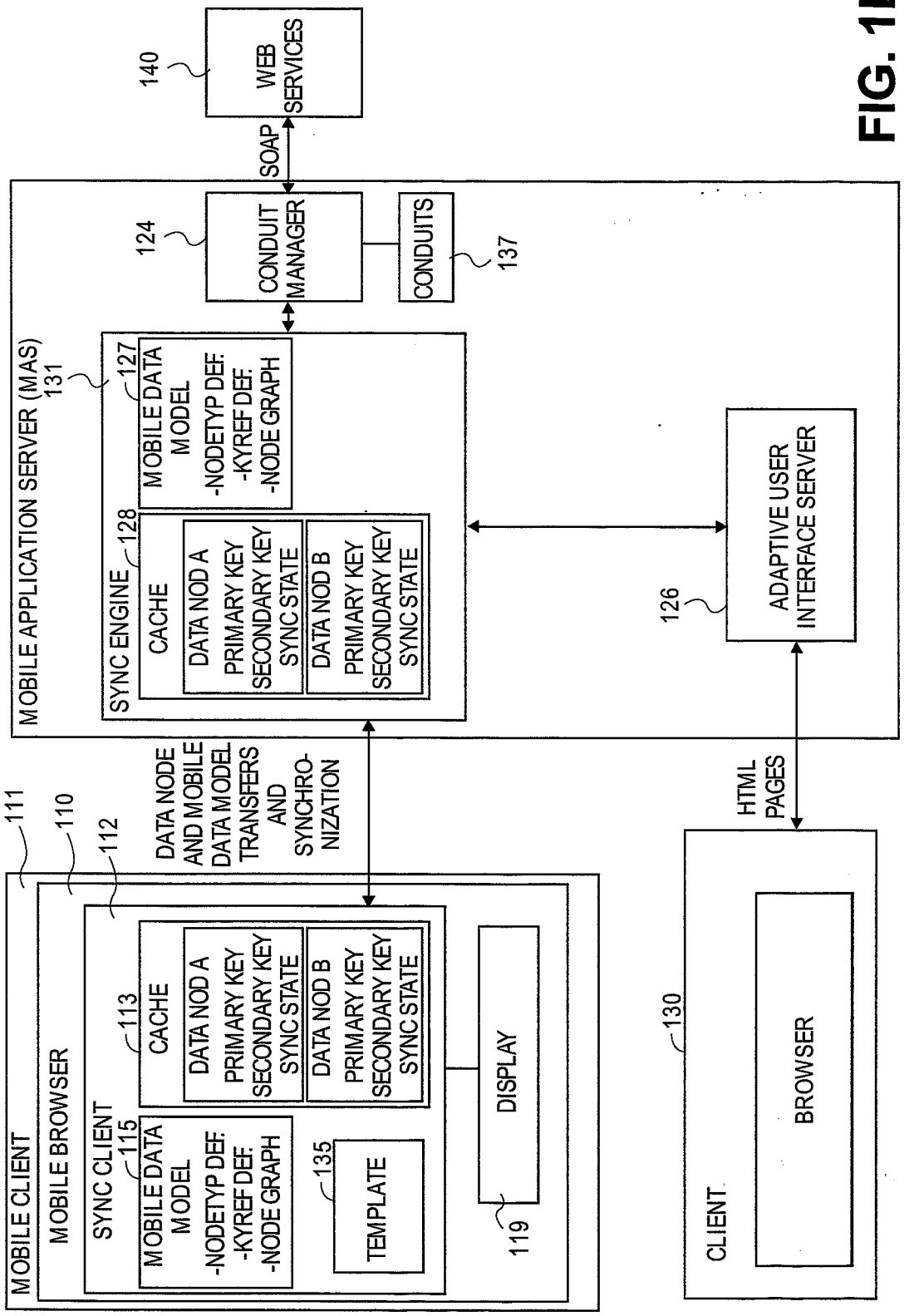

140
WEB SERVICES
SOAP
124
CONDUIT MANAGER
CONDUITS
137
MOBILE APPLICATION SERVER (MAS)
131
127
MOBILE DATA MODEL
-NODETYP DEF.
-KYREF DEF.
-NODE GRAPH
SYNC ENGINE
128
CACHE
DATA NOD A
PRIMARY KEY
SECONDARY KEY
SYNC STATE
DATA NOD B
PRIMARY KEY
SECONDARY KEY
SYNC STATE
126
ADAPTIVE USER INTERFACE SERVER
DATA NODE AND MOBILE DATA MODEL TRANSFERS AND SYNCHRO-NIZATION
HTML PAGES
111
110
112
MOBILE CLIENT
MOBILE BROWSER
SYNC CLIENT
115
113
CACHE
DATA NOD A
PRIMARY KEY
SECONDARY KEY
SYNC STATE
DATA NOD B
PRIMARY KEY
SECONDARY KEY
SYNC STATE
MOBILE DATA MODEL
-NODETYP DEF.
-KYREF DEF.
-NODE GRAPH
135
TEMPLATE
DISPLAY
119
130
CLIENT
BROWSER

FIG. 1B

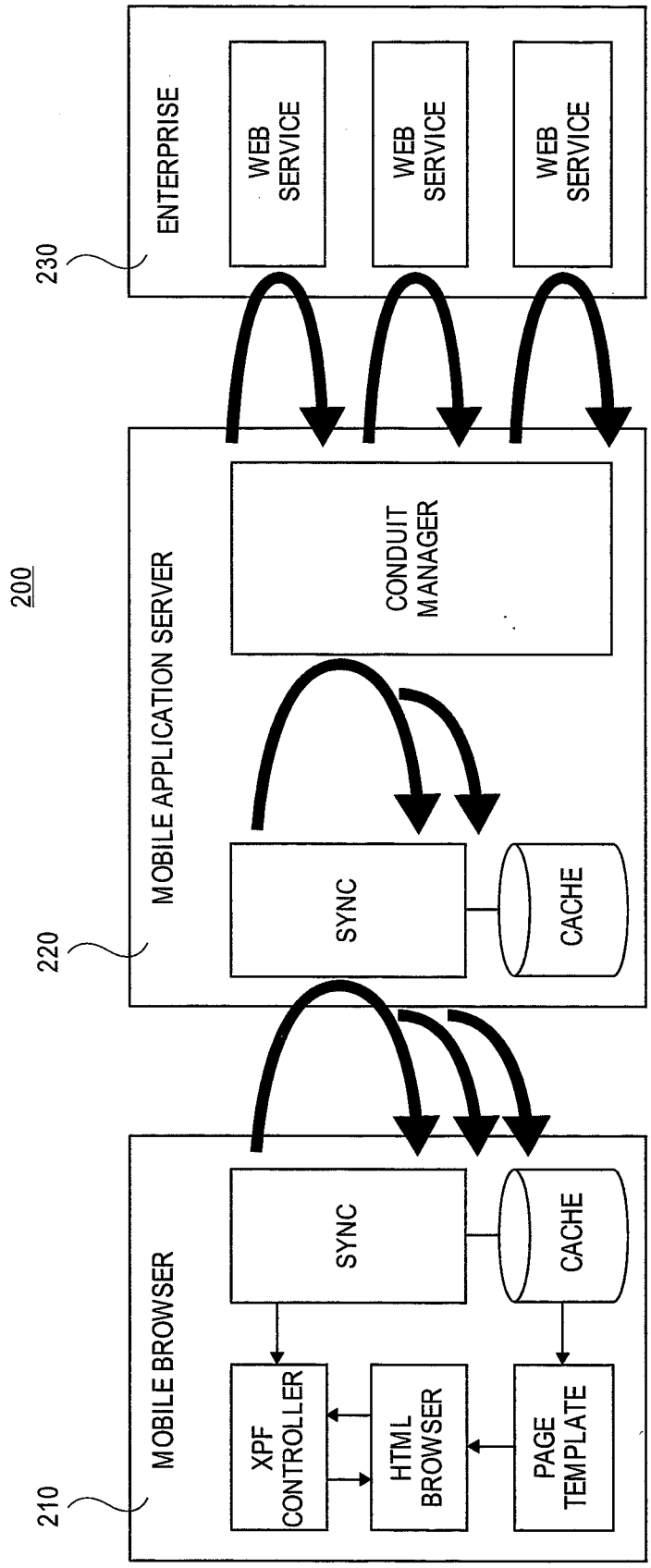

200
230
ENTERPRISE
WEB SERVICE
WEB SERVICE
WEB SERVICE
220
MOBILE APPLICATION SERVER
CONDUIT MANAGER
SYNC
CACHE
210
MOBILE BROWSER
SYNC
CACHE
XPF CONTROLLER
HTML BROWSER
PAGE TEMPLATE

FIG. 2

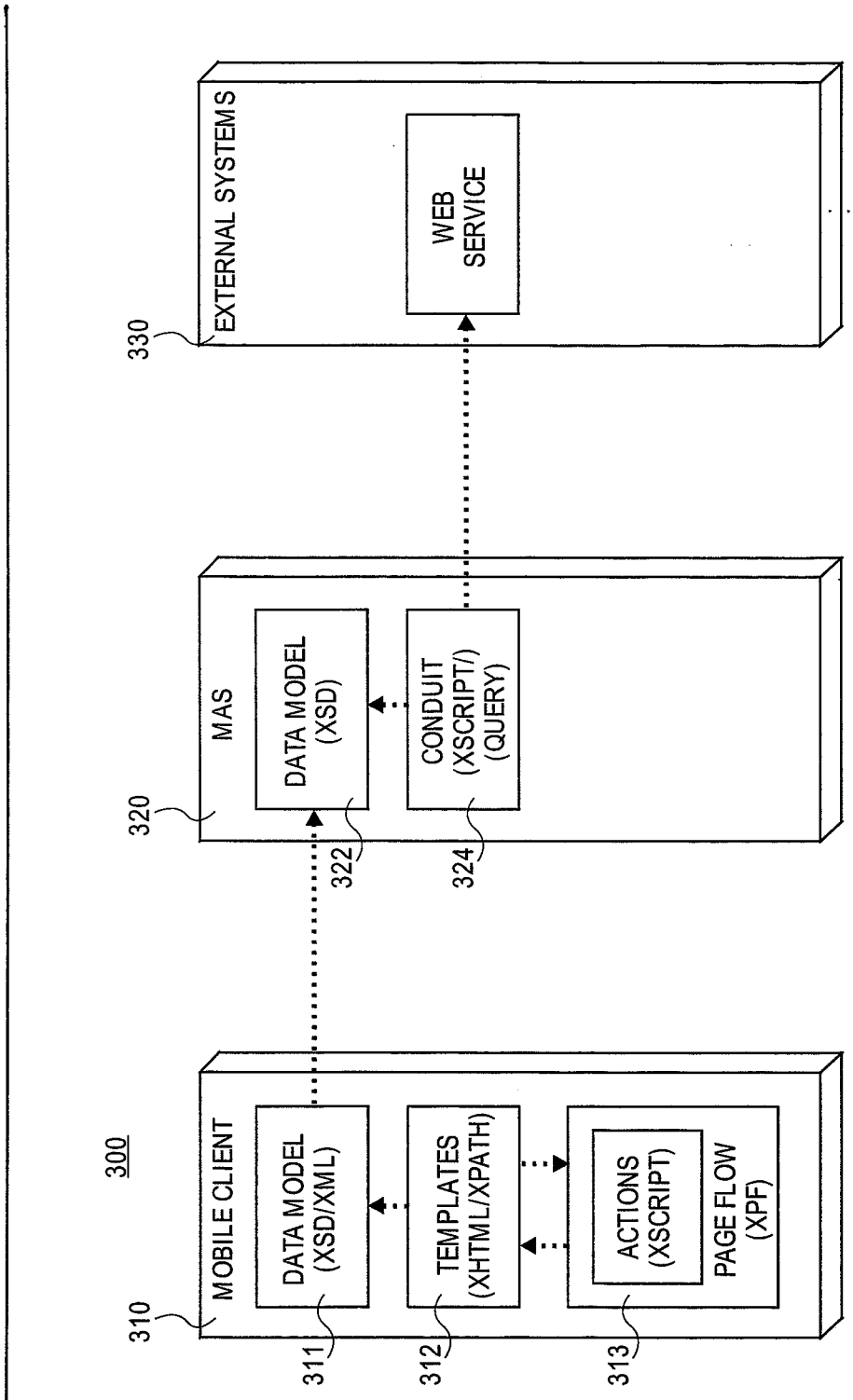

300
MOBILE CLIENT
310
DATA MODEL (XSD/XML)
311
TEMPLATES (XHTML/XPATH)
312
ACTIONS (XSCRIPT)
PAGE FLOW (XPF)
313
MAS
320
DATA MODEL (XSD)
322
CONDUIT (XSCRIPT/) (QUERY)
324
EXTERNAL SYSTEMS
330
WEB SERVICE

FIG. 3

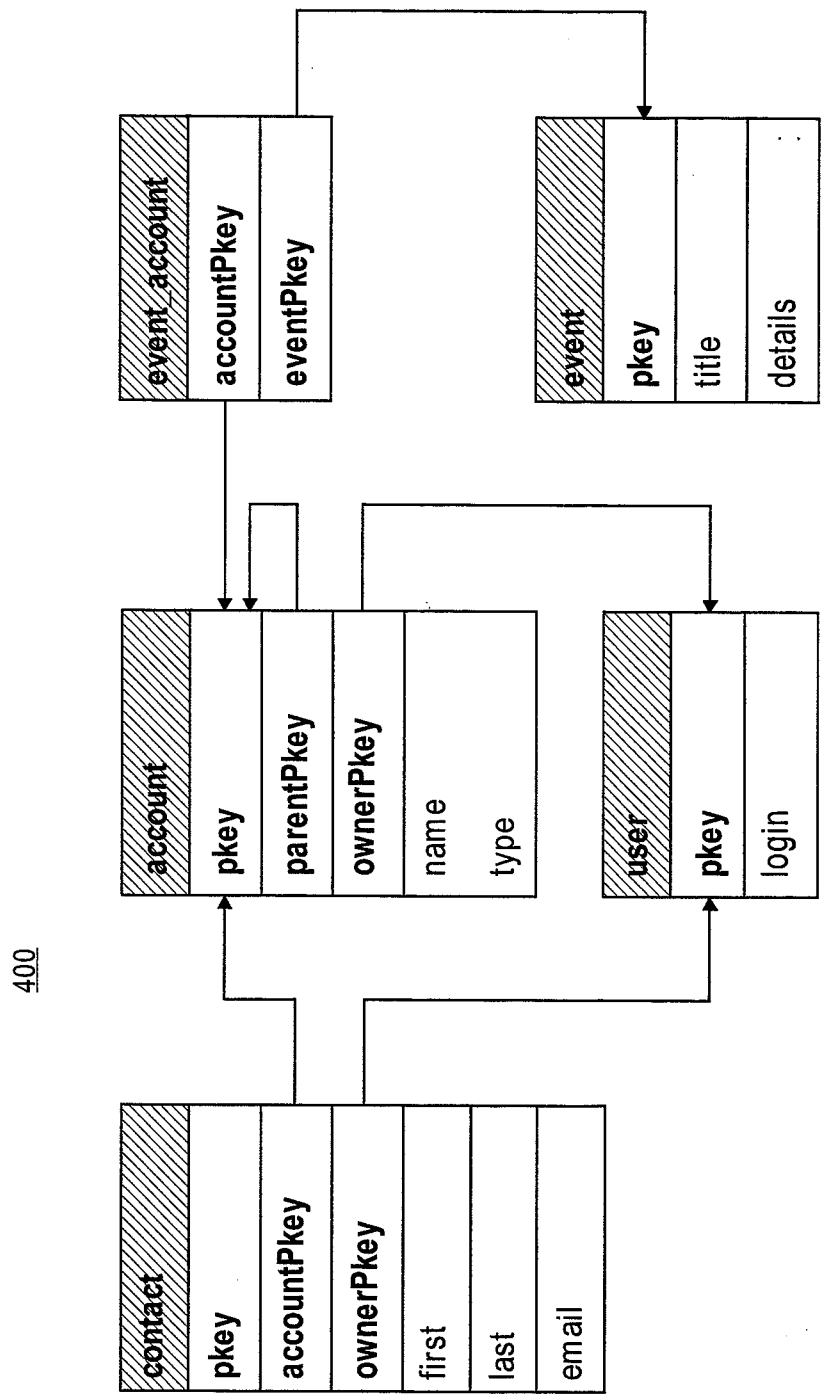

400
event_account
accountPkey
eventPkey
event
pkey
title
details
account
pkey
parentPkey
ownerPkey
name
type
user
pkey
login
contact
pkey
accountPkey
ownerPkey
first
last
email

FIG. 4

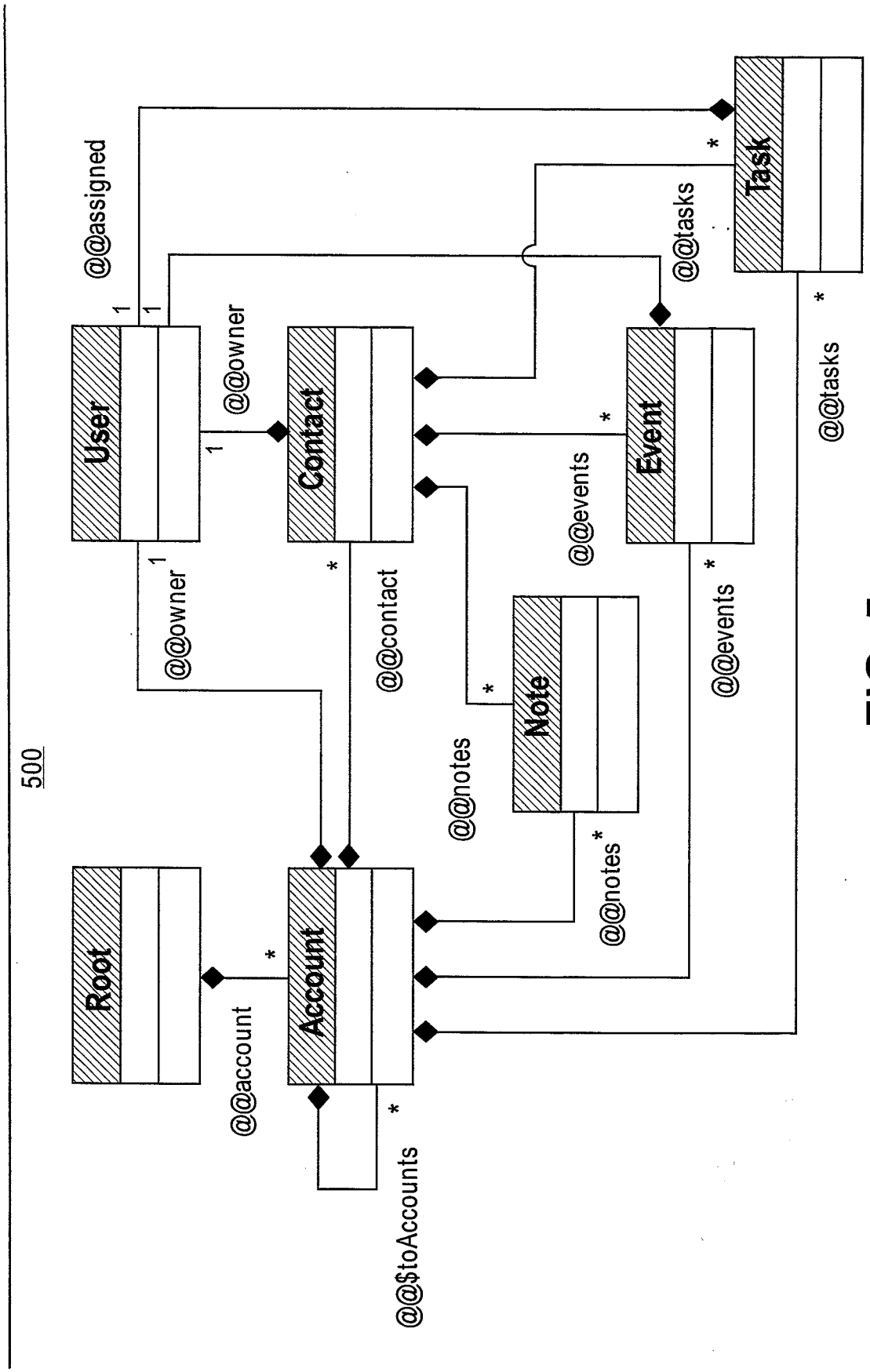

500
Root
Account
User
Contact
Event
Task
Note
@@account
@@$toAccounts
@@assigned
@@owner
@@owner
@@contact
@@events
@@events
@@tasks
@@tasks
@@notes
@@notes
1
*

FIG. 5

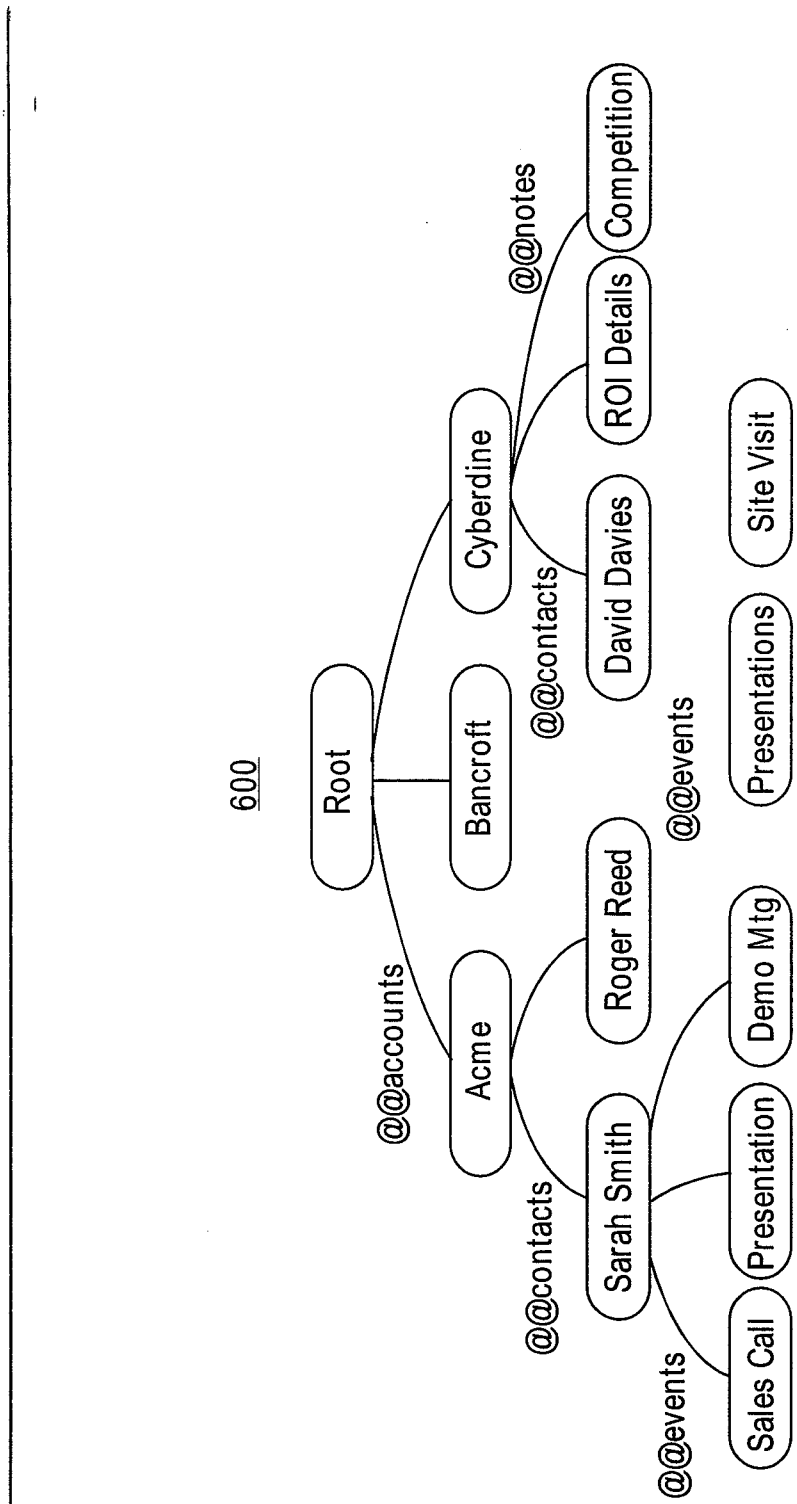

600
Root
@@accounts
Acme
Bancroft
@@contacts
Sarah Smith
Roger Reed
@@events
Sales Call
Presentation
Demo Mtg
Cyberdine
@@contacts
David Davies
ROI Details
@@notes
Competition
@@events
Presentations
Site Visit

FIG. 6

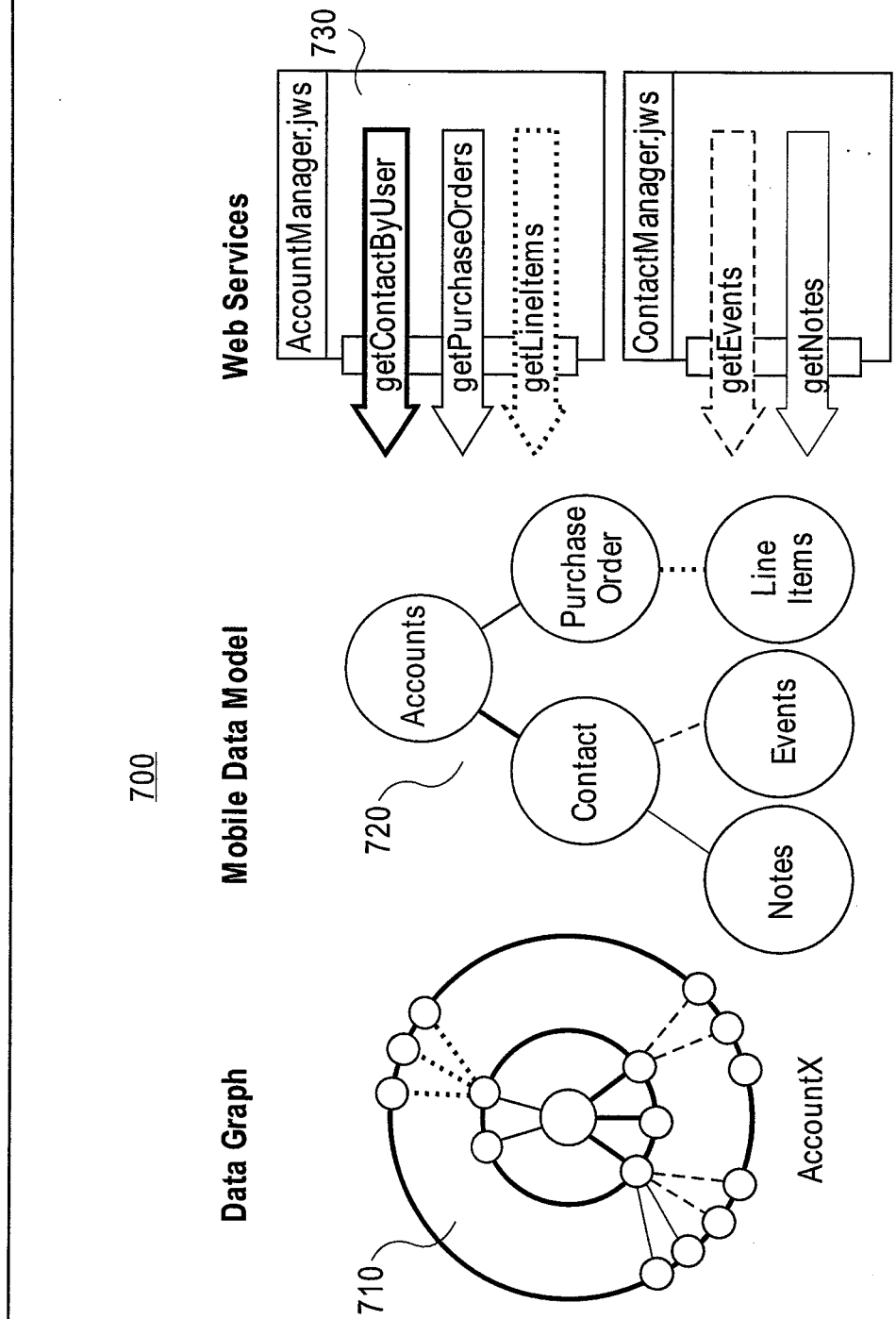

700
Data Graph
Mobile Data Model
Web Services
730
AccountManager.jws
getContactByUser
getPurchaseOrders
getLineItems
ContactManager.jws
getEvents
getNotes
720
Accounts
Contact
Purchase Order
Line Items
Events
Notes
710
AccountX

FIG. 7

REPLACEMENT SHEET
09 FEB 2007

800

		Input	
		Temporary	Permanent
Output	Temporary	**Custom operations**	**n/a**
	Permanent	**Custom objects**	**Keyref/CRUD operations**

output = operation(input);

FIG. 8

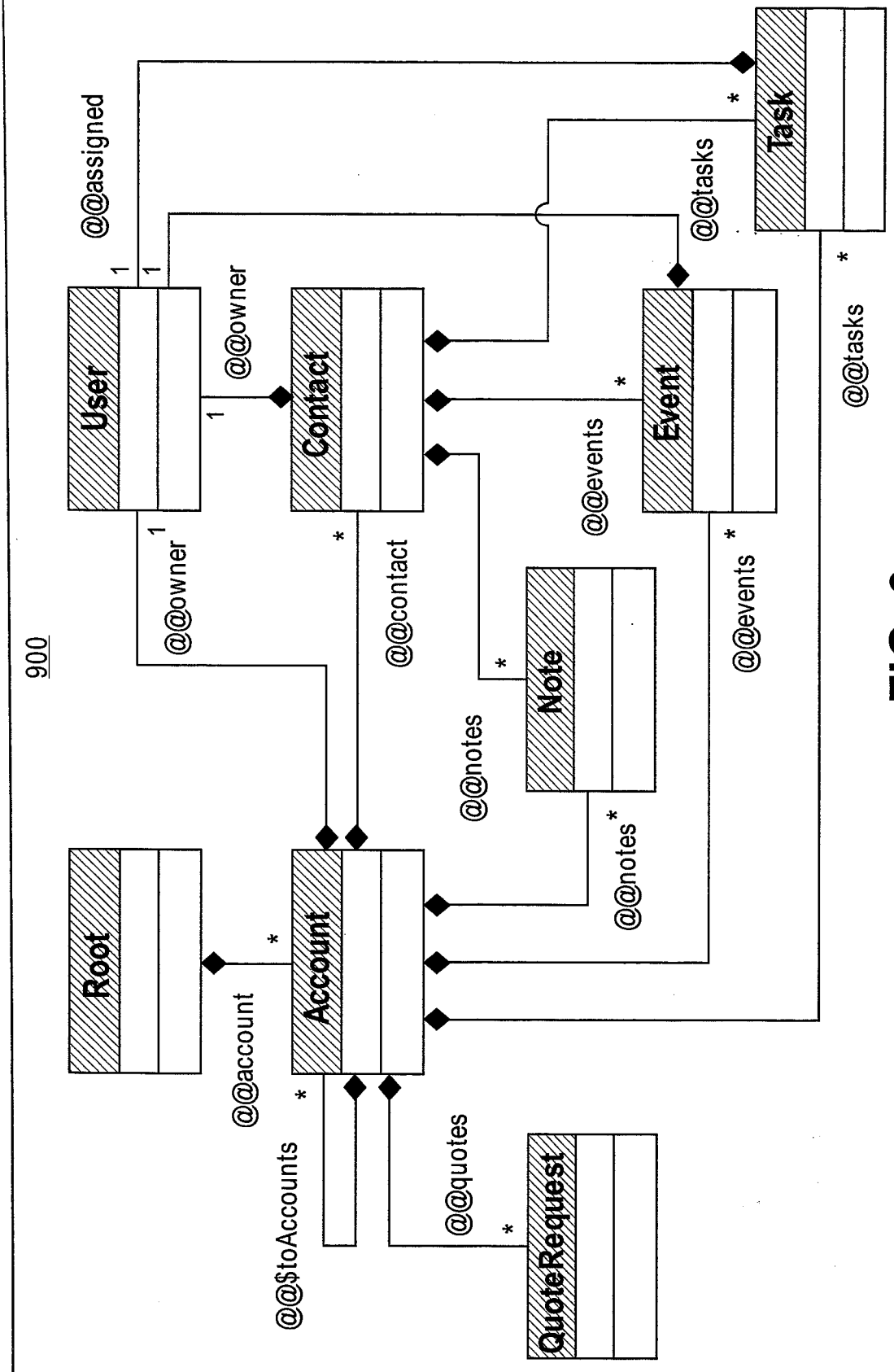

900
User
Contact
Event
Task
Note
Root
Account
QuoteRequest
@@assigned
@@owner
@@tasks
@@events
@@contact
@@notes
@@account
@@$toAccounts
@@quotes
1
*

FIG. 9

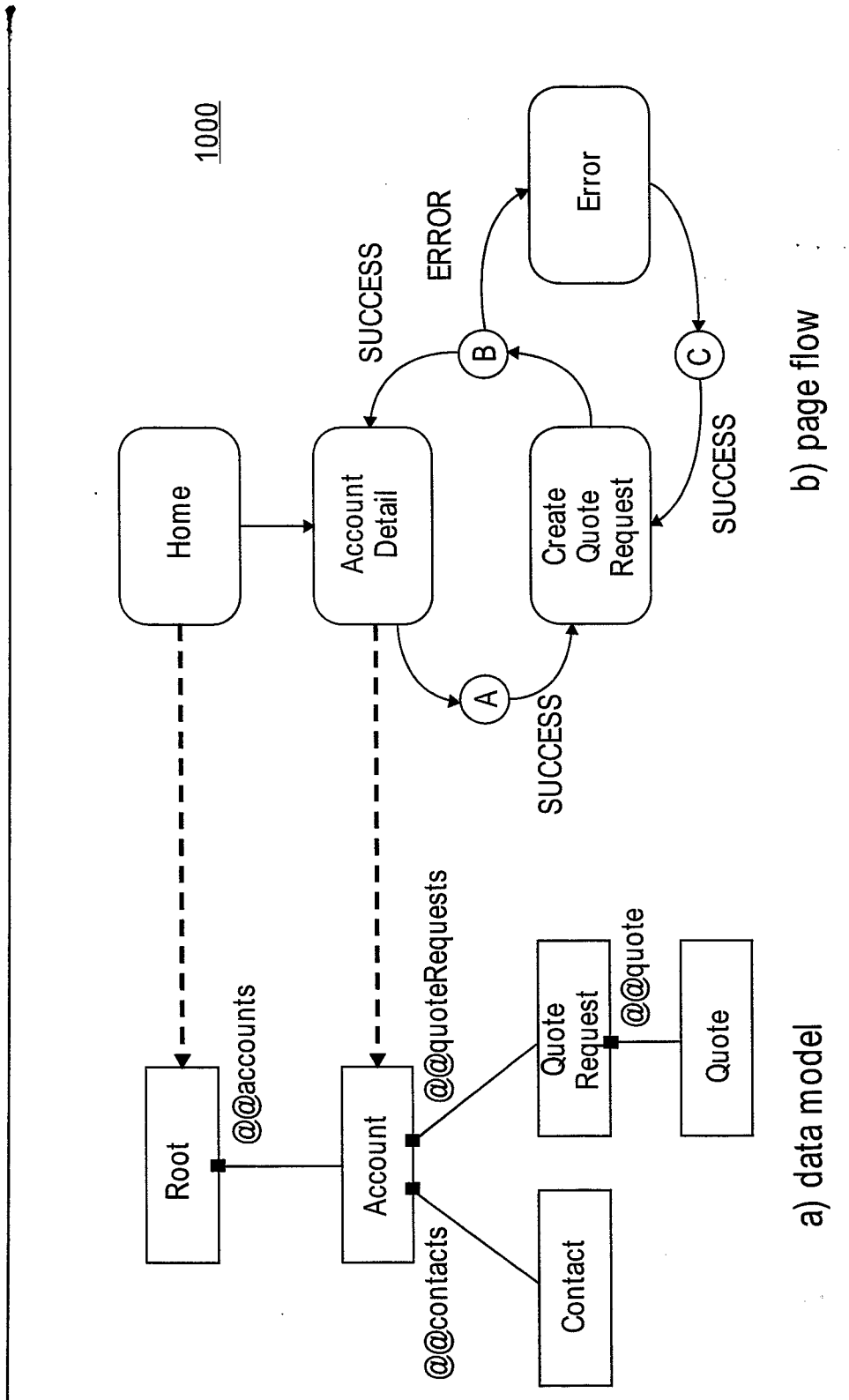

1000
Home
Account Detail
Create Quote Request
Error
SUCCESS
ERROR
SUCCESS
SUCCESS
A
B
C
b) page flow
Root
@@accounts
Account
@@quoteRequests
@@contacts
Quote Request
@@quote
Quote
Contact
a) data model

FIG. 10

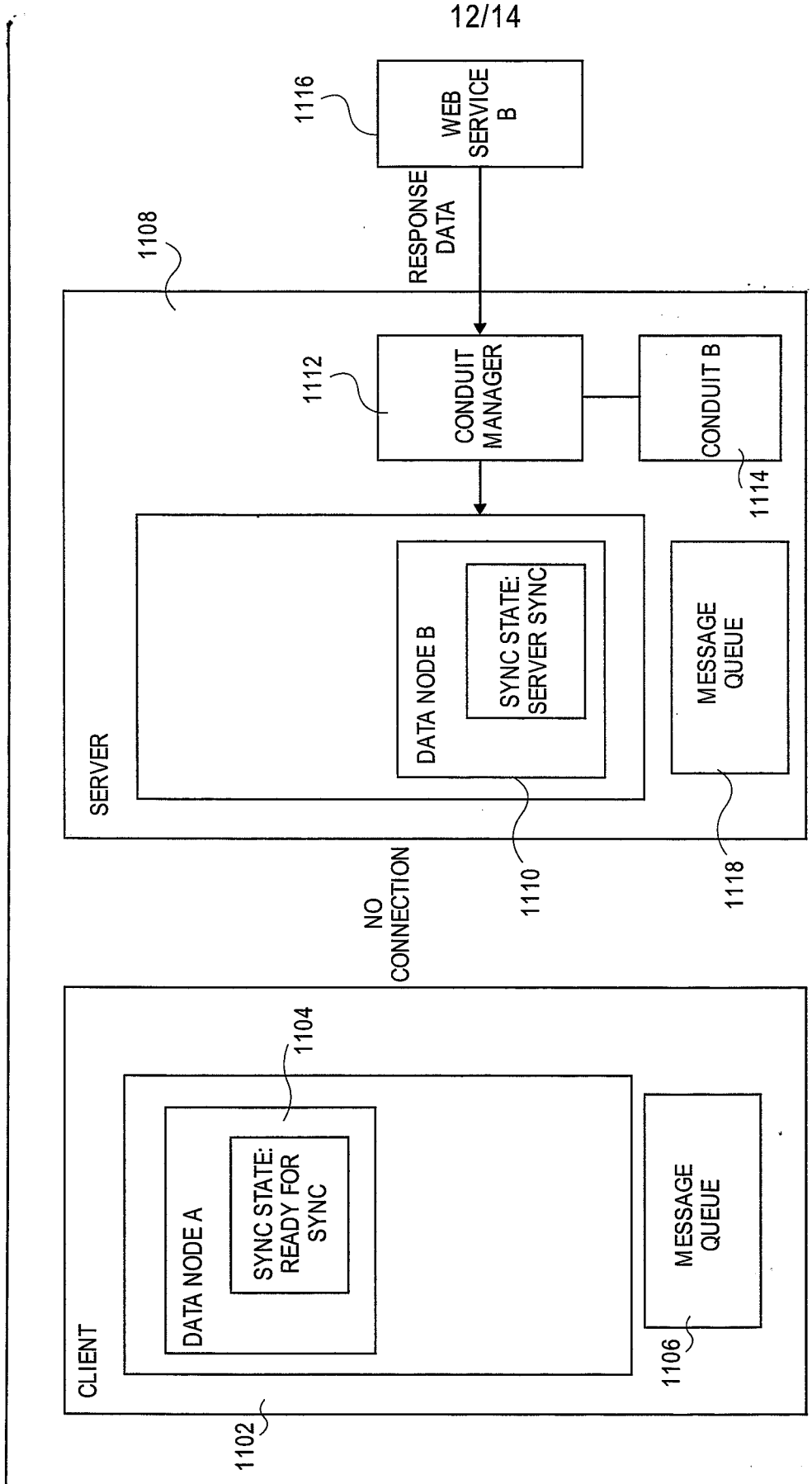

1116
WEB SERVICE B
RESPONSE DATA
1108
1112
CONDUIT MANAGER
CONDUIT B
1114
SERVER
DATA NODE B
SYNC STATE: SERVER SYNC
MESSAGE QUEUE
NO CONNECTION
1110
1118
1104
CLIENT
DATA NODE A
SYNC STATE: READY FOR SYNC
MESSAGE QUEUE
1106
1102

FIG. 11A

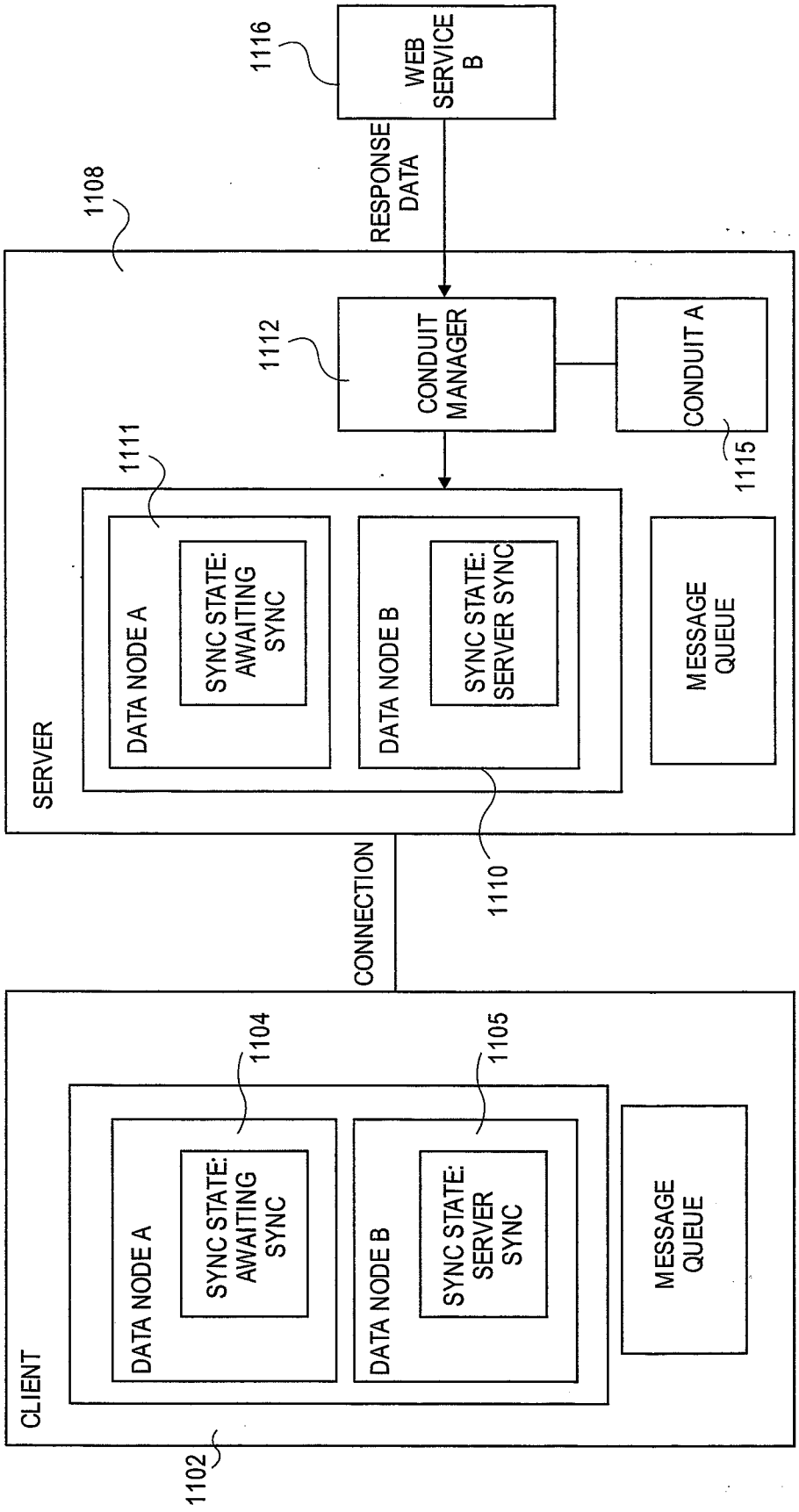

1116
WEB SERVICE B
RESPONSE DATA
1108
1112
CONDUIT MANAGER
CONDUIT A
1115
1111
SERVER
DATA NODE A
SYNC STATE: AWAITING SYNC
DATA NODE B
SYNC STATE: SERVER SYNC
MESSAGE QUEUE
CONNECTION
1110
1104
1105
CLIENT
DATA NODE A
SYNC STATE: AWAITING SYNC
DATA NODE B
SYNC STATE: SERVER SYNC
MESSAGE QUEUE
1102

FIG. 11B

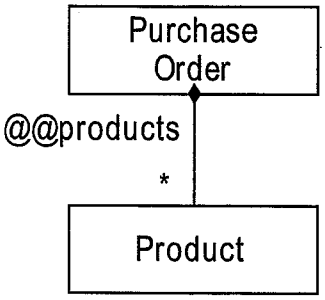


FIG. 12A

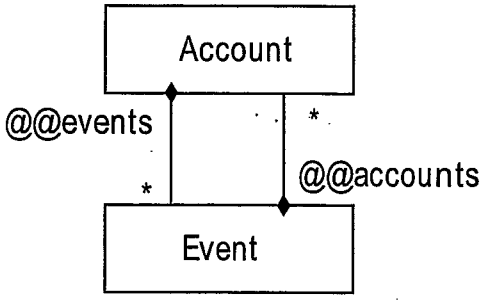


FIG. 12B

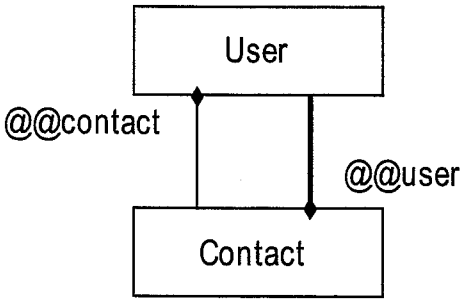


FIG. 12C

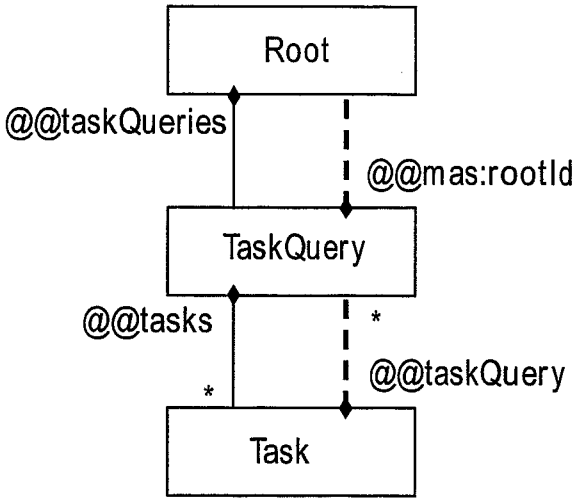


FIG. 12D

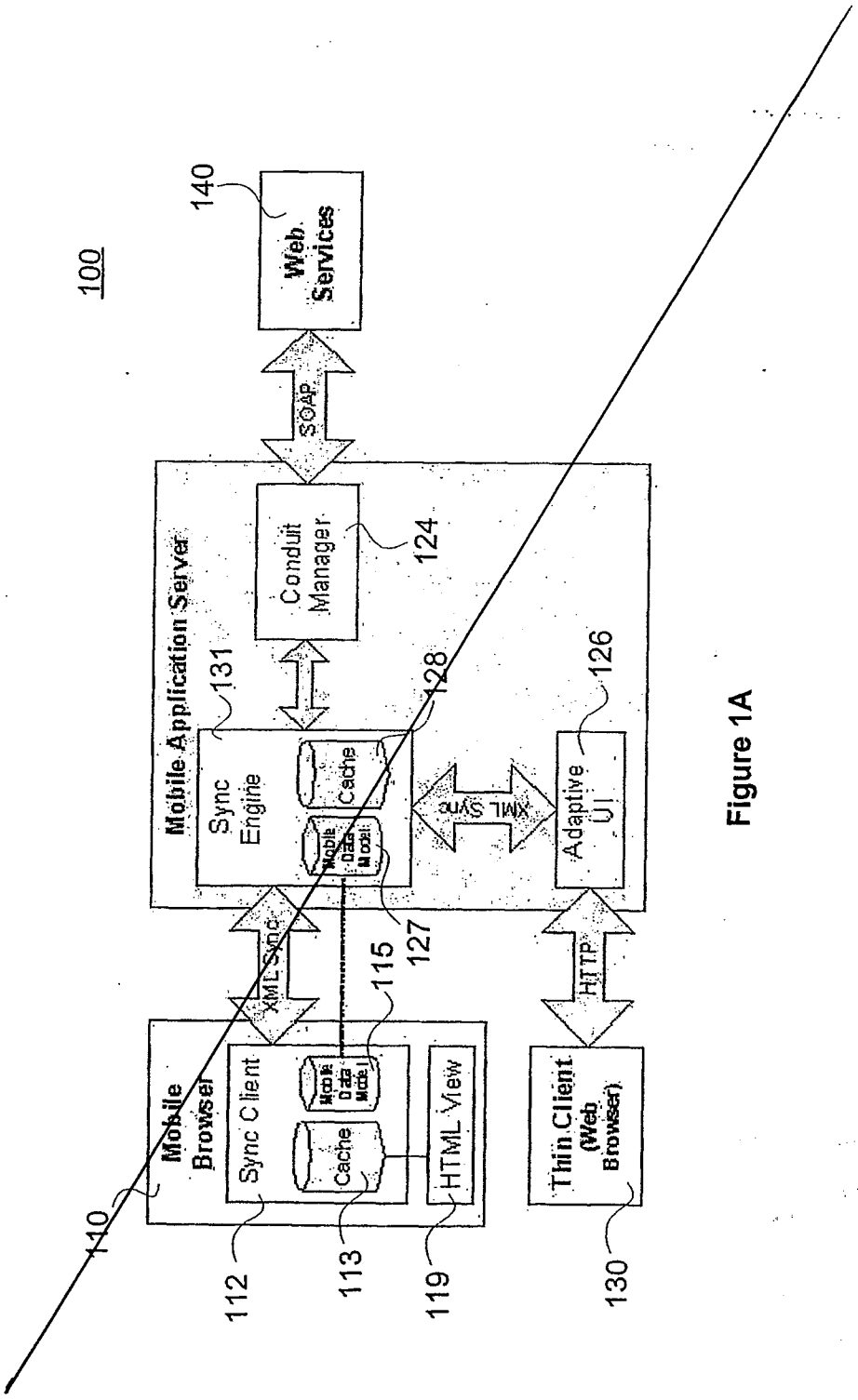

100
140
Web Services
SOAP
Mobile Application Server
Conduit Manager
124
131
Sync Engine
Cache
128
Mobile Data Model
126
Adaptive UI
XML Sync
127
115
XML Sync
HTTP
Mobile Browser
Sync Client
Cache
Mobile Data Model
HTML View
Thin Client (Web Browser)
110
112
113
119
130

Figure 1A

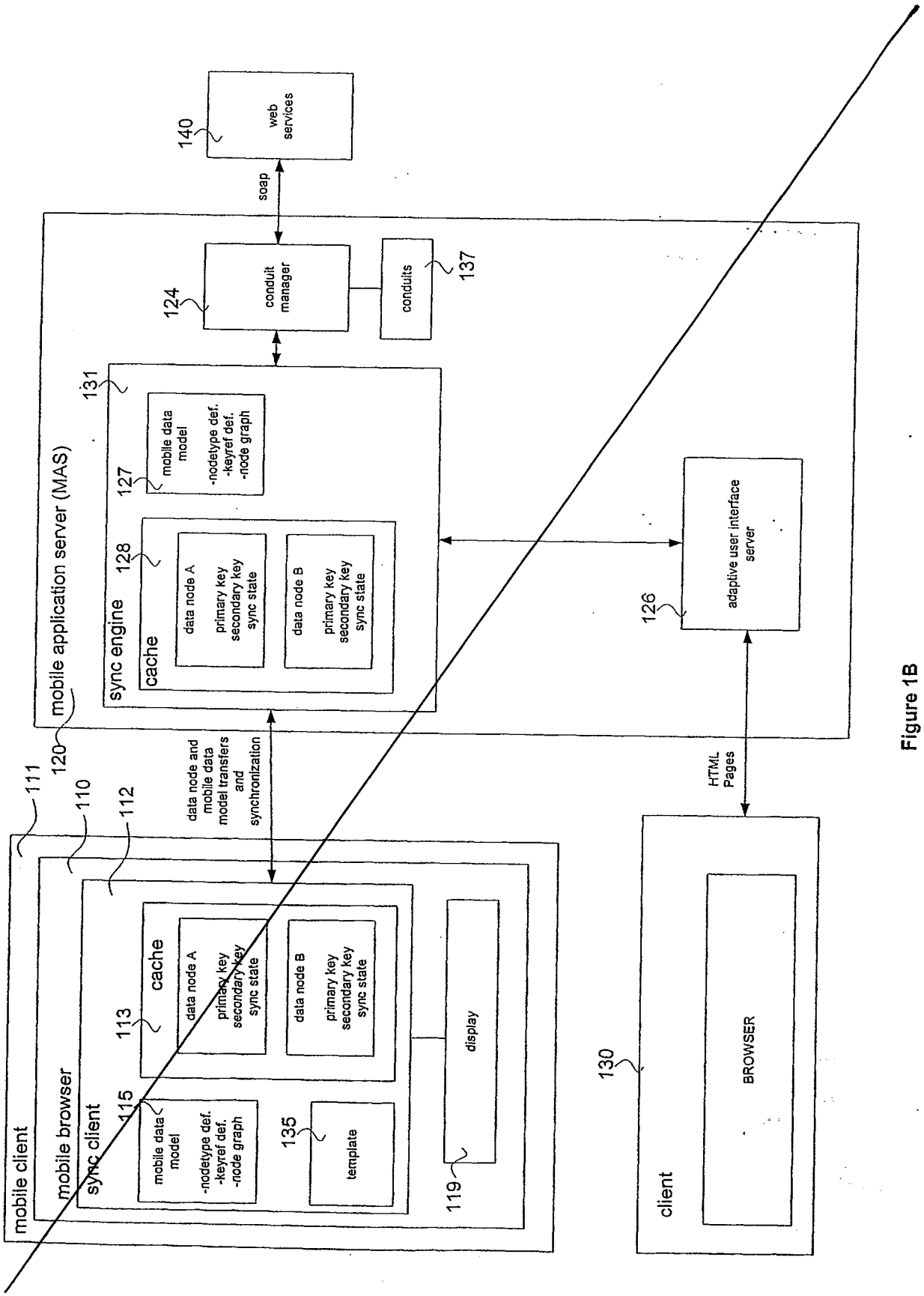

mobile client
111
mobile browser
110
sync client
112
cache
113
data node A
primary key
secondary key
sync state
data node B
primary key
secondary key
sync state
mobile data model
-nodetype def.
-keyref def.
-node graph
115
template
135
display
119
data node and mobile data model transfers and synchronization
120
mobile application server (MAS)
sync engine
128
cache
data node A
primary key
secondary key
sync state
data node B
primary key
secondary key
sync state
131
mobile data model
-nodetype def.
-keyref def.
-node graph
127
conduit manager
124
conduits
137
soap
web services
140
adaptive user interface server
126
HTML Pages
client
130
BROWSER

Figure 1B

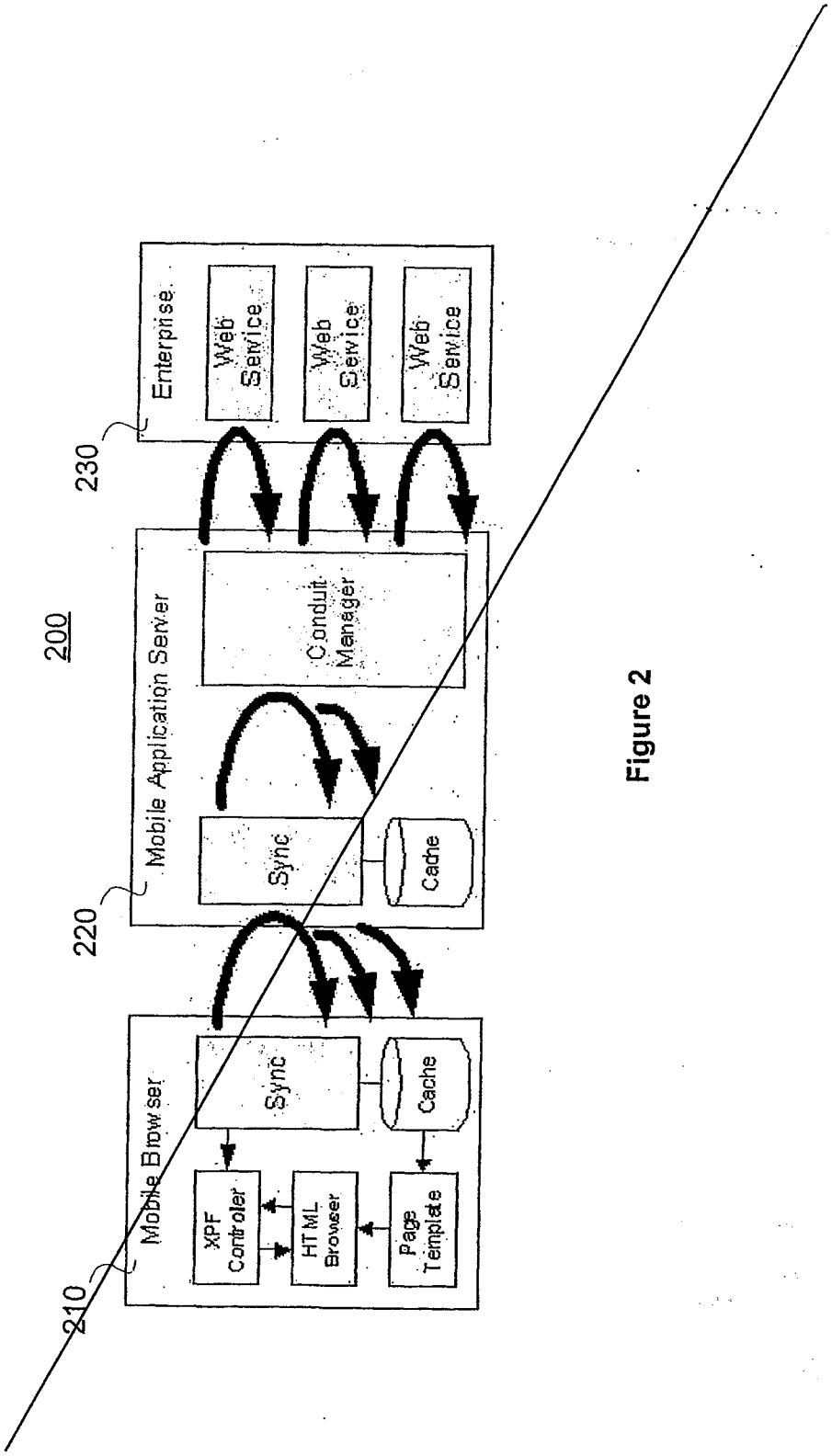

200
Enterprise
Web Service
Web Service
Web Service
230
Mobile Application Server
Conduit Manager
Sync
Cache
220
Mobile Browser
Sync
Cache
XPF Controller
HTML Browser
Page Template
210

Figure 2

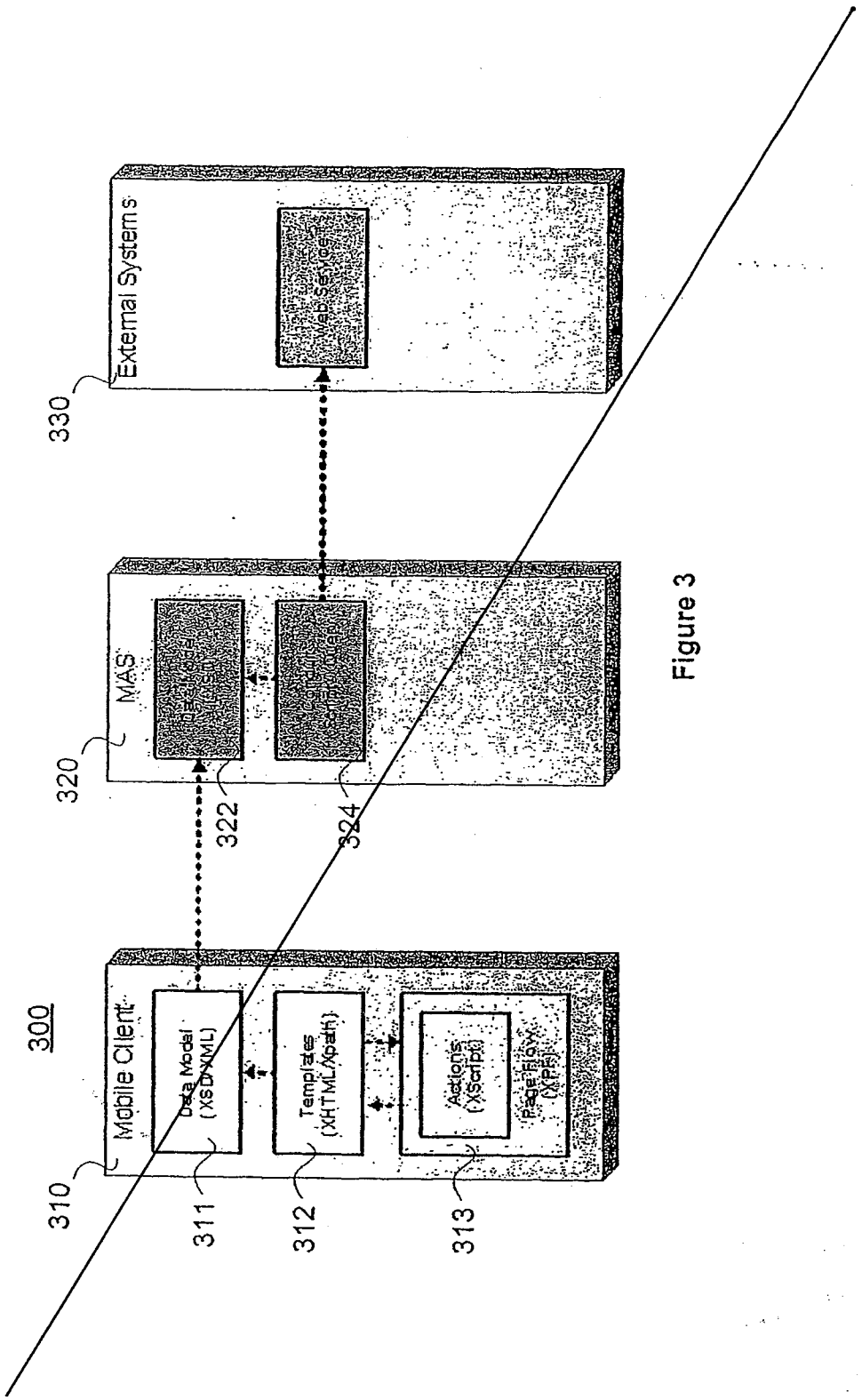

300
Mobile Client
Data Model (XSD/XML)
Templates (XHTML/Xpath)
Actions (XScript)
Page Flow (XPFL)
310
311
312
313
MAS
Data Model
Templates
320
322
324
External Systems
Web Service
330

Figure 3

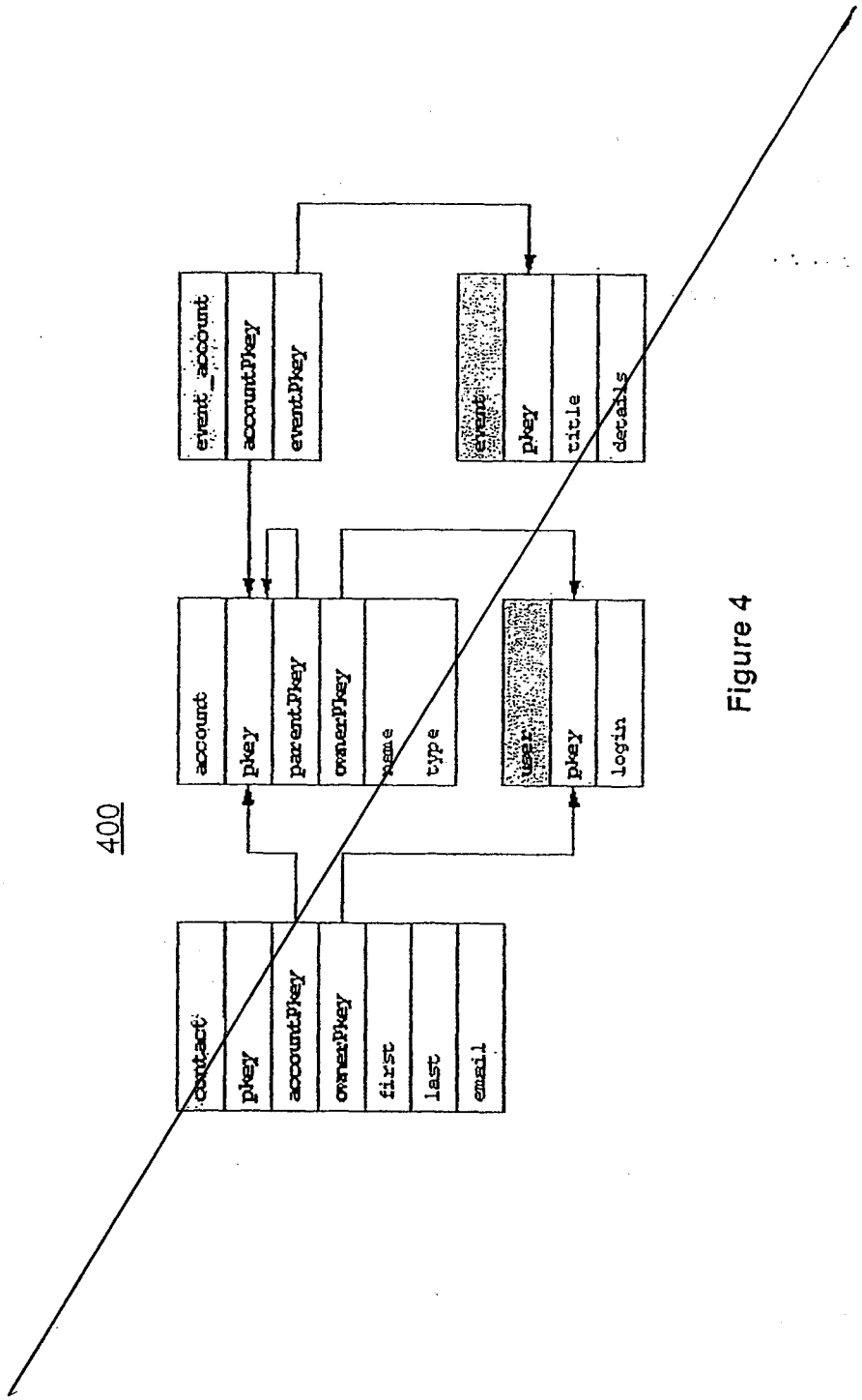

400
event_account
accountPkey
eventPkey
event
pkey
title
details
account
pkey
parentPkey
ownerPkey
name
type
user
pkey
login
contact
pkey
accountPkey
ownerPkey
first
last
email

Figure 4

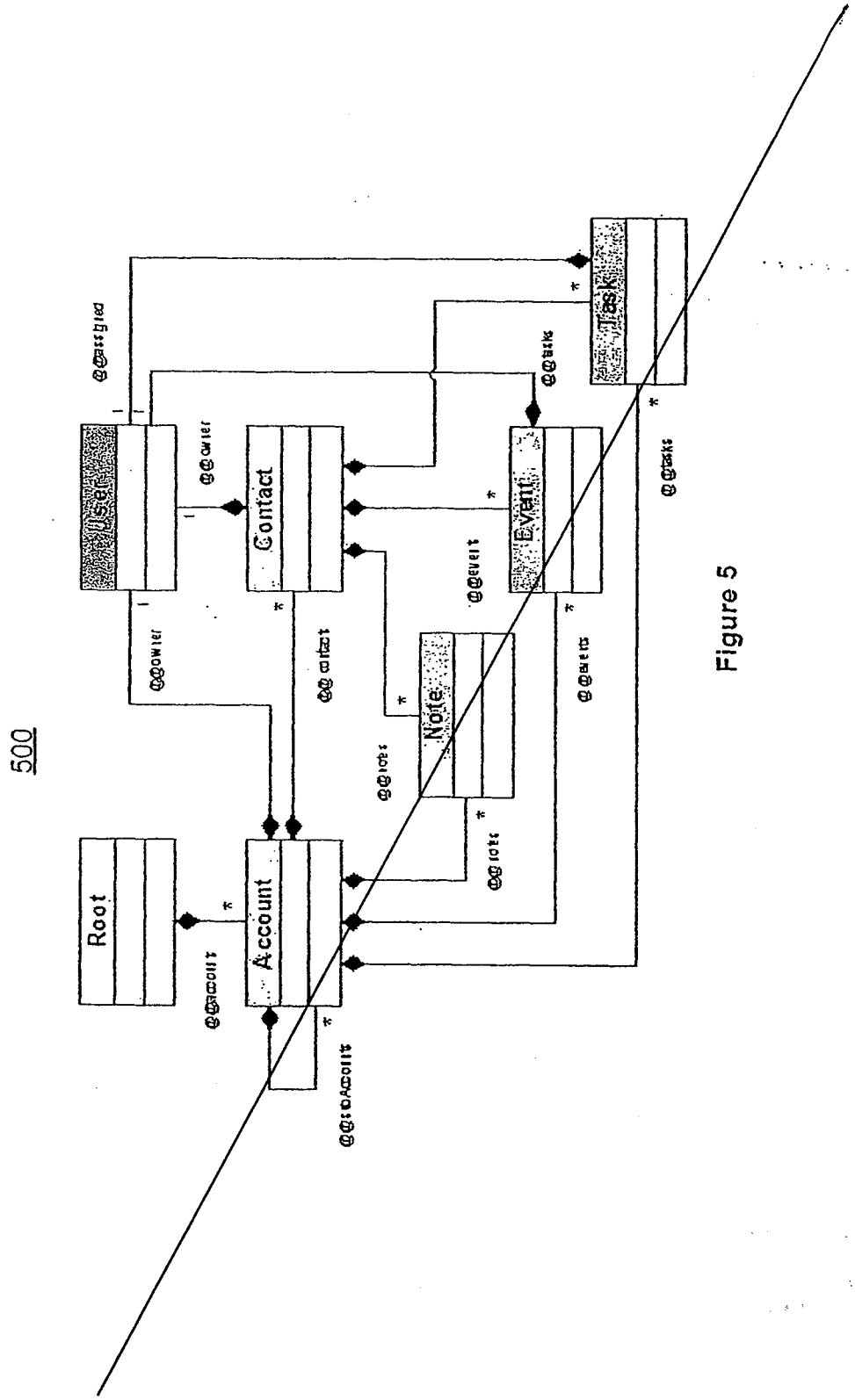

500
Root
Account
Contact
User
Event
Task
Note
@@accounts
@@owner
@@contact
@@events
@@tasks
@@notes
@@assigned

Figure 5

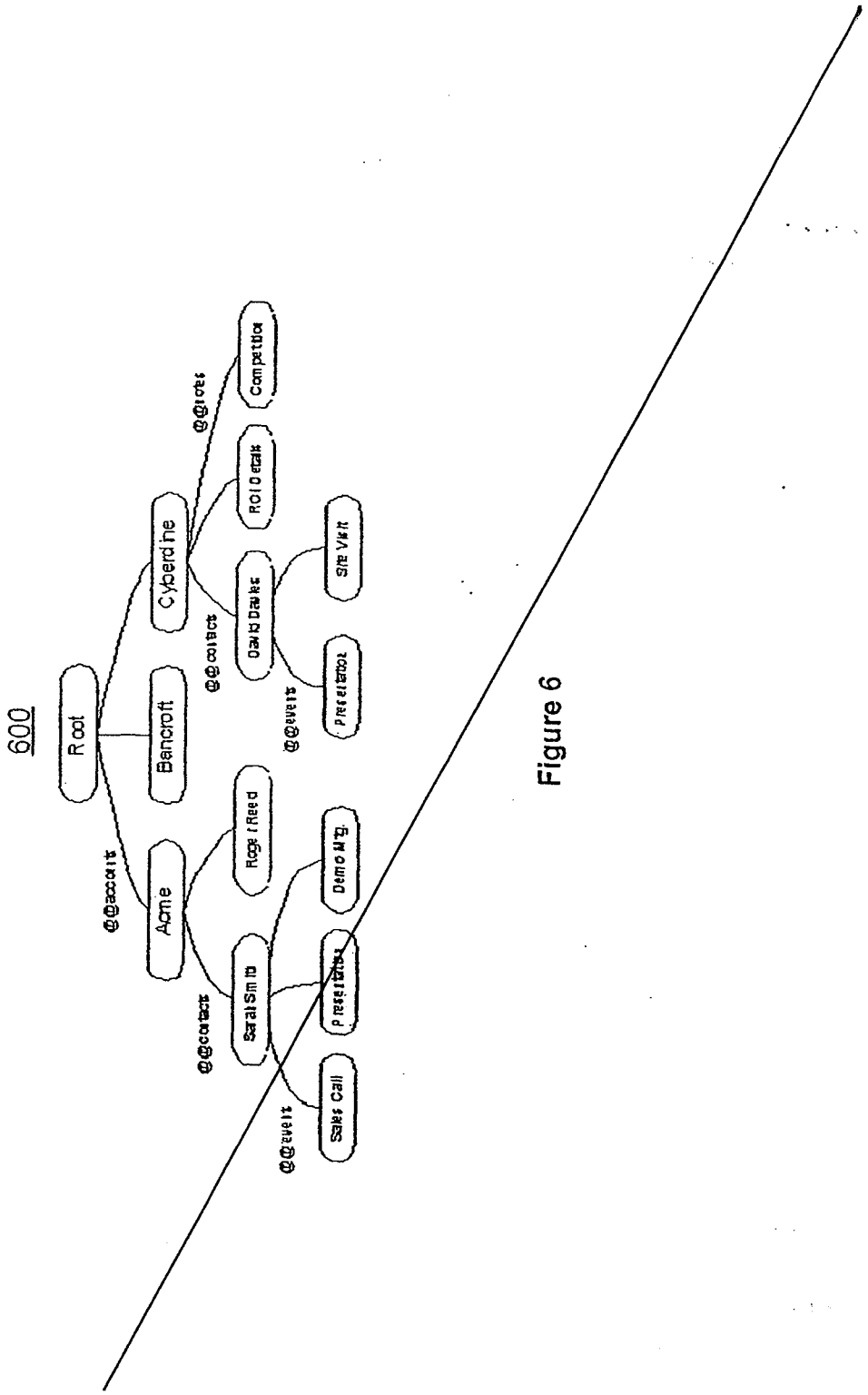

600
Root
Bancroft
Acme
Cyberdine
Competitor
ROI Graph
David Drawkes
Site Visit
Presentation
@@accounts
@@clients
@@contacts
@@events
Roger Reed
Sarah Smith
Demo Mtg.
Presentation
Sales Call

Figure 6

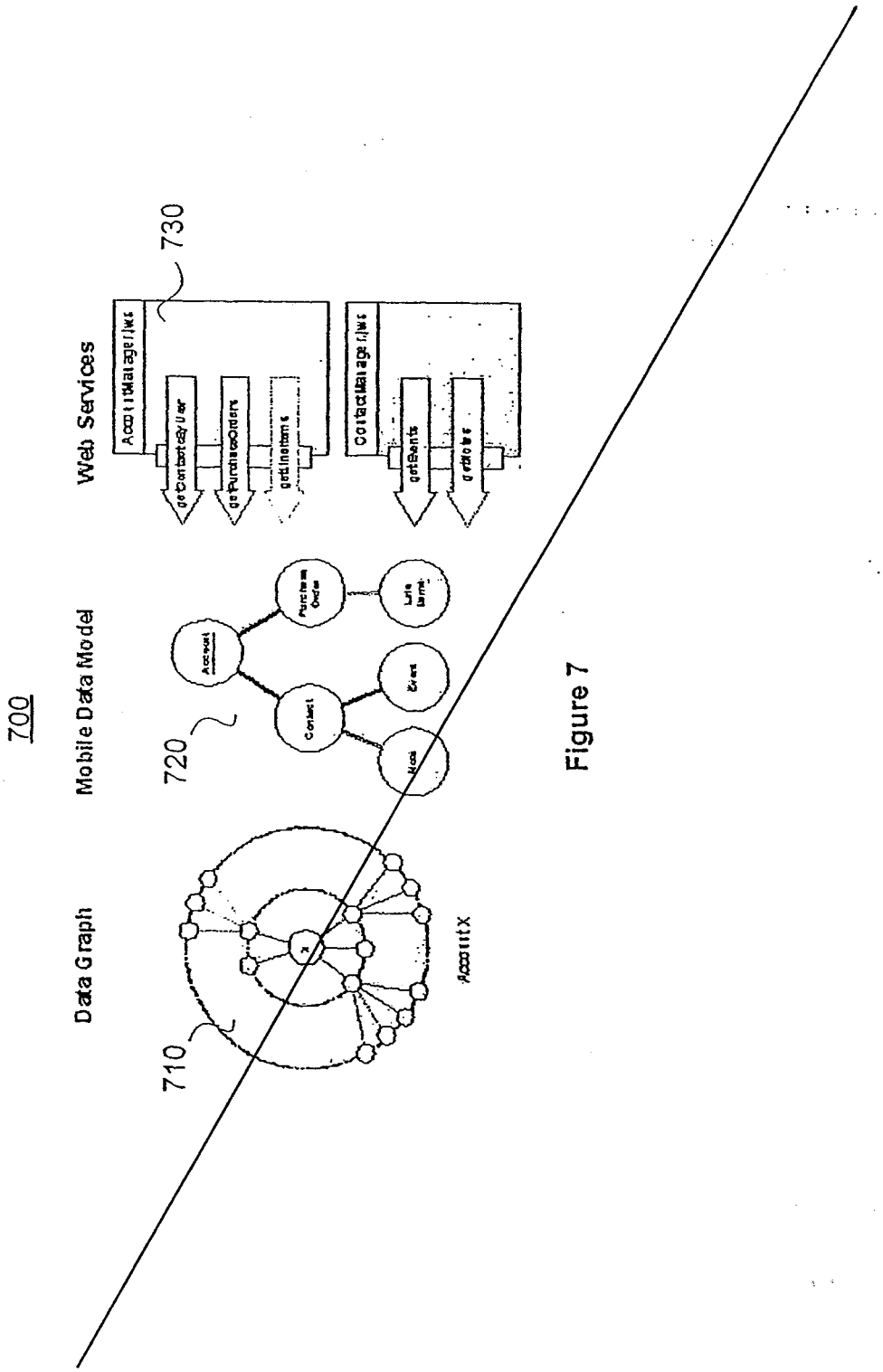

700
Data Graph
Mobile Data Model
Web Services
710
720
730
Account
Contact
Event
Task
Purchase Order
Line Item
AccountX
AccountManagerJws
getContactsByUser
getPurchaseOrders
getLineItems
ContactManagerJws
getEvents
getTasks

Figure 7

REPLACEMENT SHEET
09 FEB 2007

800

		Input	
		Temporary	Permanent
Output	Temporary	Custom operations	n/a
	Permanent	Custom objects	Keyref/CRUD operations

```
output = operation(input);
```

Figure 8

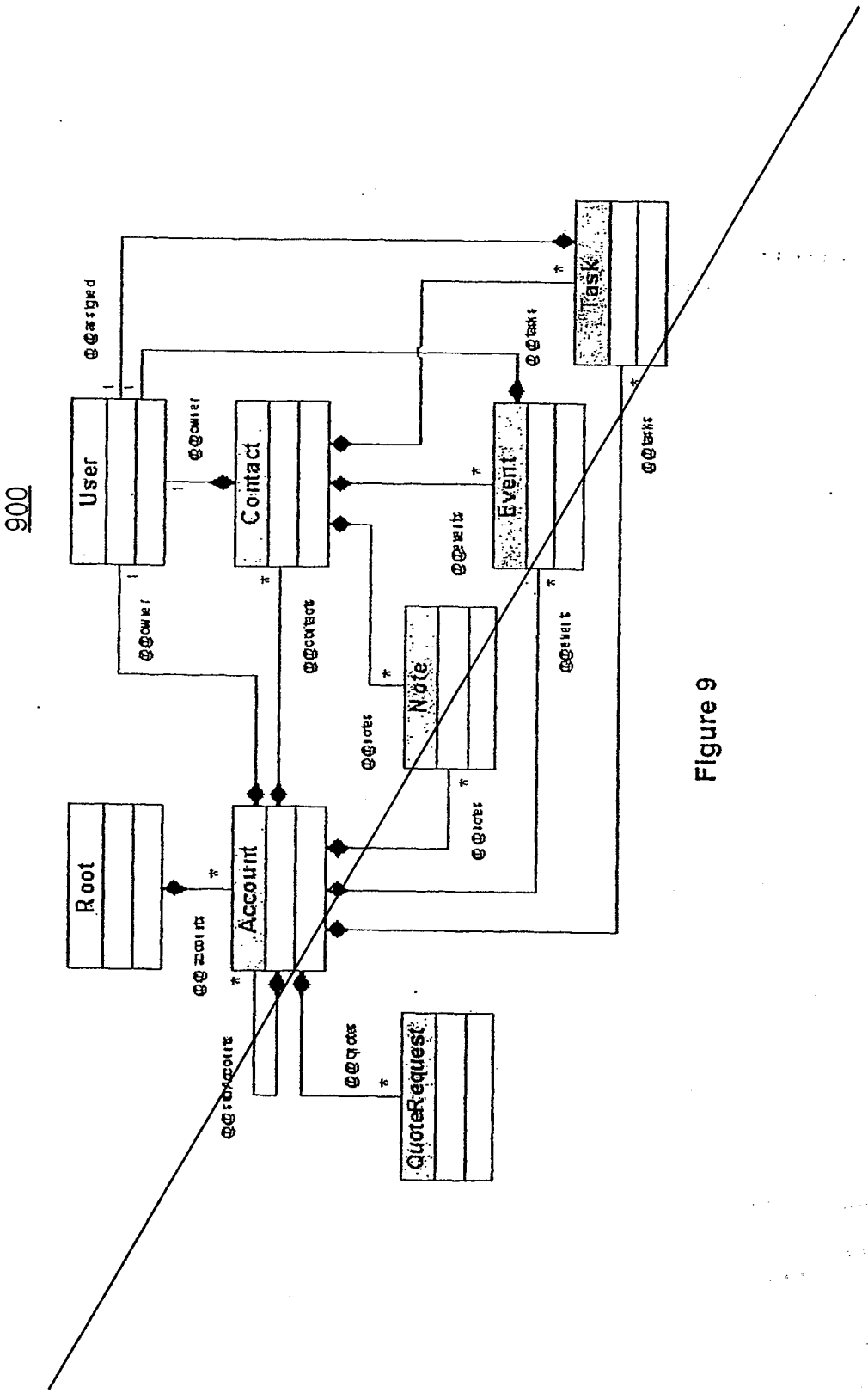

900
User
Contact
Task
Event
Note
Root
Account
QuoteRequest

Figure 9

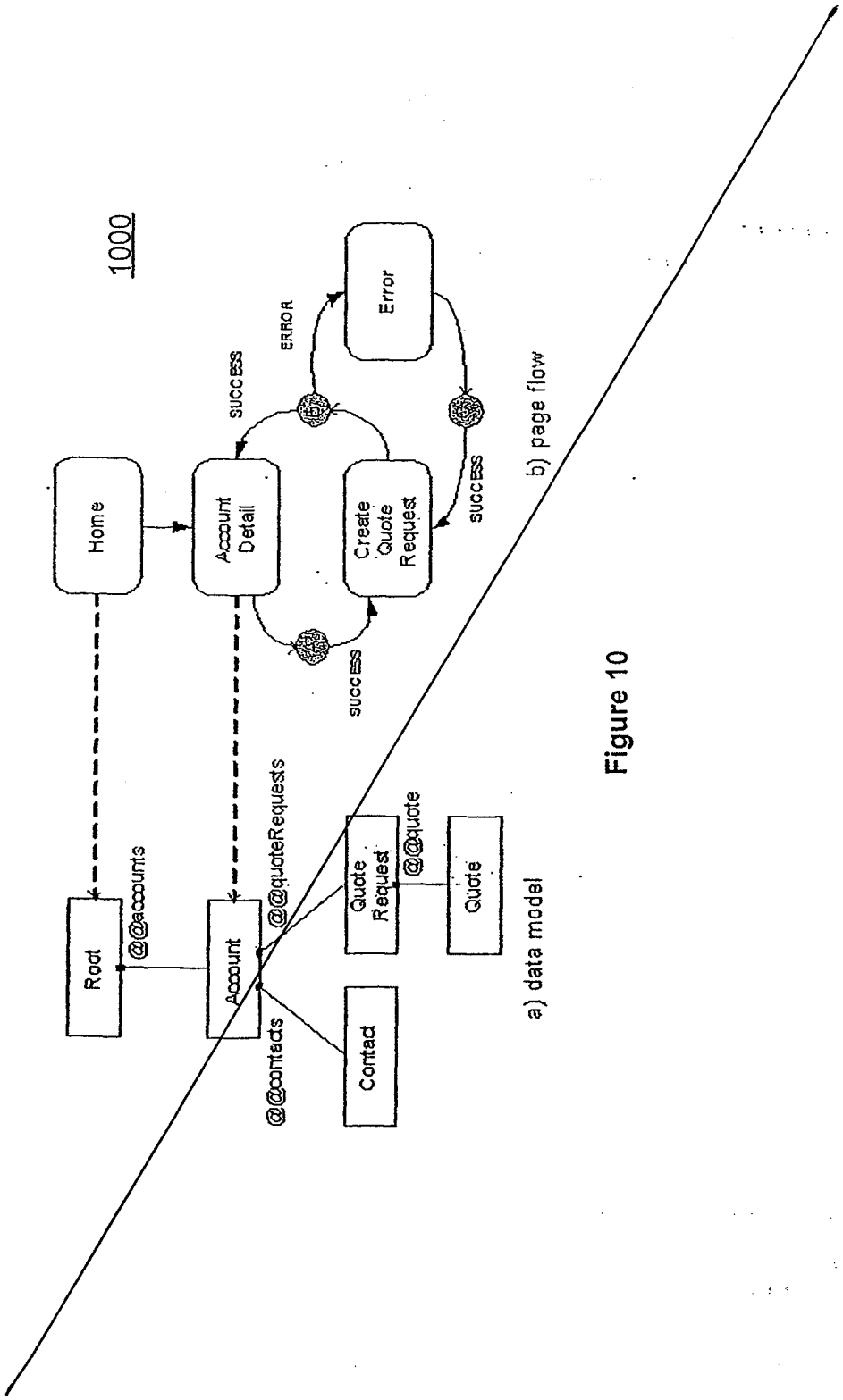
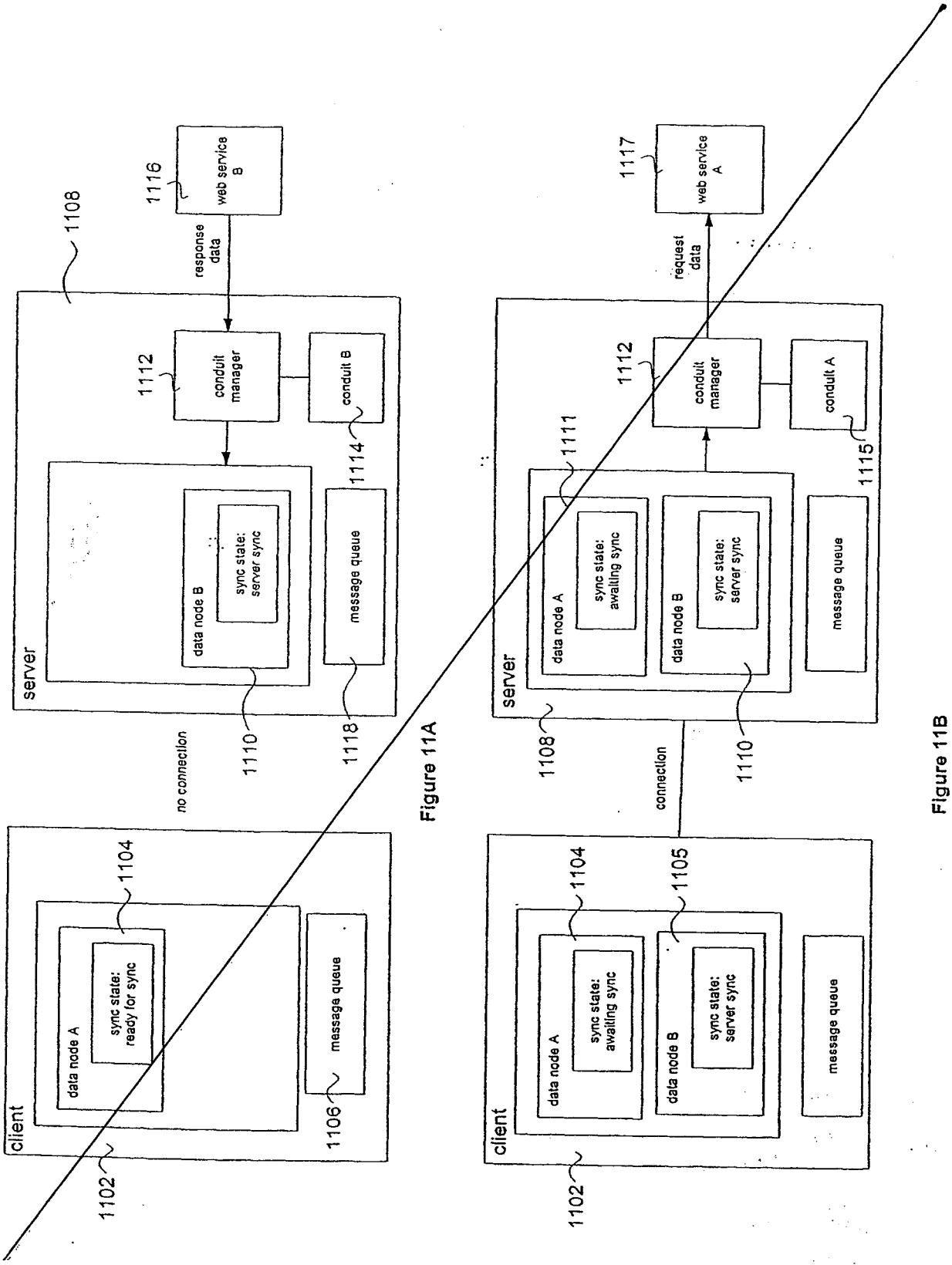

1000
Home
Account Detail
Create Quote Request
Error
SUCCESS
ERROR
SUCCESS
SUCCESS
b) page flow
Root
Account
Quote Request
Quote
Contact
@@accounts
@@quoteRequests
@@quote
@@contacts
a) data model

Figure 10


client
1102
data node A
sync state: ready for sync
1104
message queue
1106
no connection
server
1108
data node B
sync state: server sync
message queue
1110
1118
conduit manager
1112
conduit B
1114
response data
web service B
1116
Figure 11A
client
1102
data node A
sync state: awaiting sync
1104
data node B
sync state: server sync
1105
message queue
connection
server
1108
data node A
sync state: awaiting sync
1111
data node B
sync state: server sync
1110
message queue
conduit manager
1112
conduit A
1115
request data
web service A
1117
Figure 11B

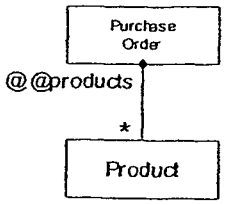


Figure 12A

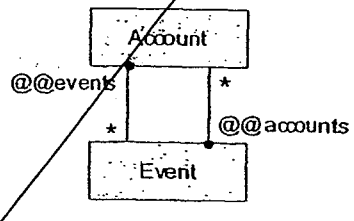


Figure 12B

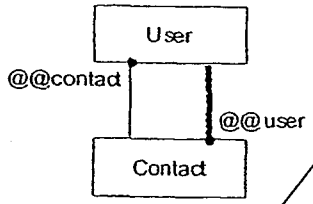


Figure 12C

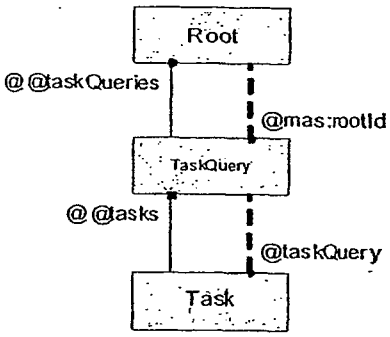


Figure 12D