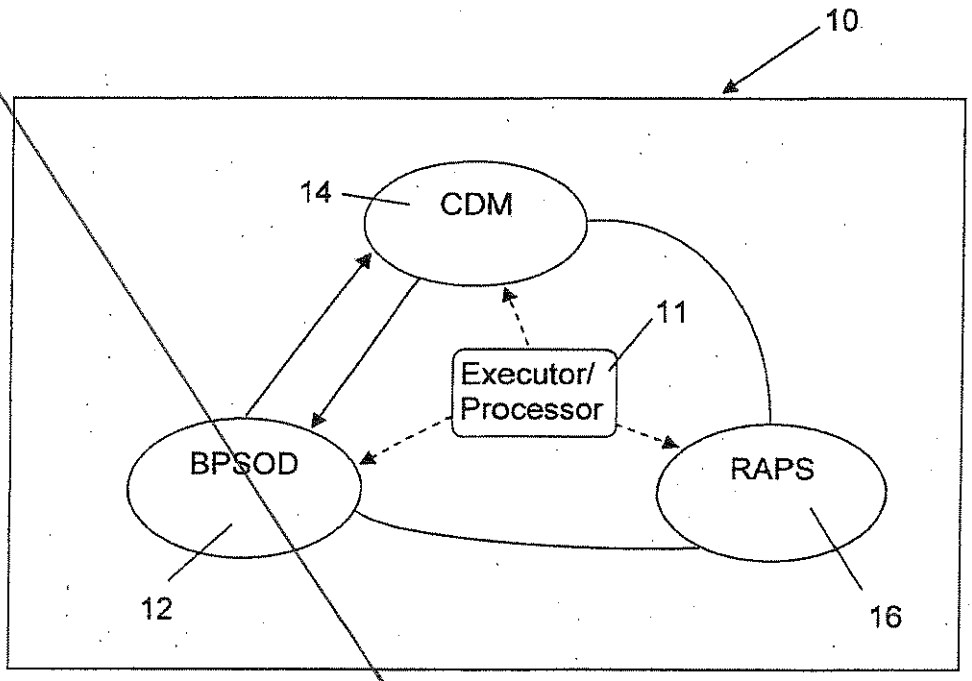

10
14
CDM
11
Executor/
Processor
BPSOD
RAPS
12
16

Figure 1

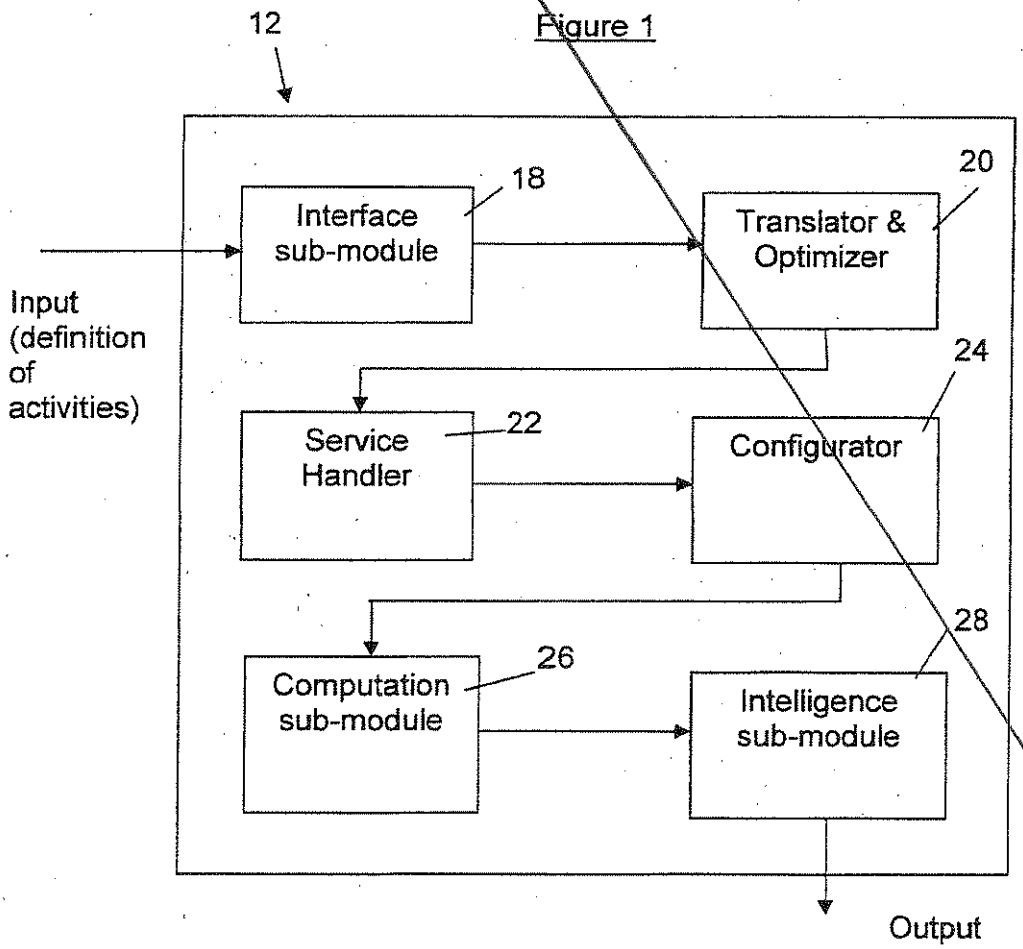

12
18
Interface
sub-module
20
Translator &
Optimizer
Input
(definition
of
activities)
24
22
Service
Handler
Configurator
28
26
Computation
sub-module
Intelligence
sub-module
Output

Figure 2

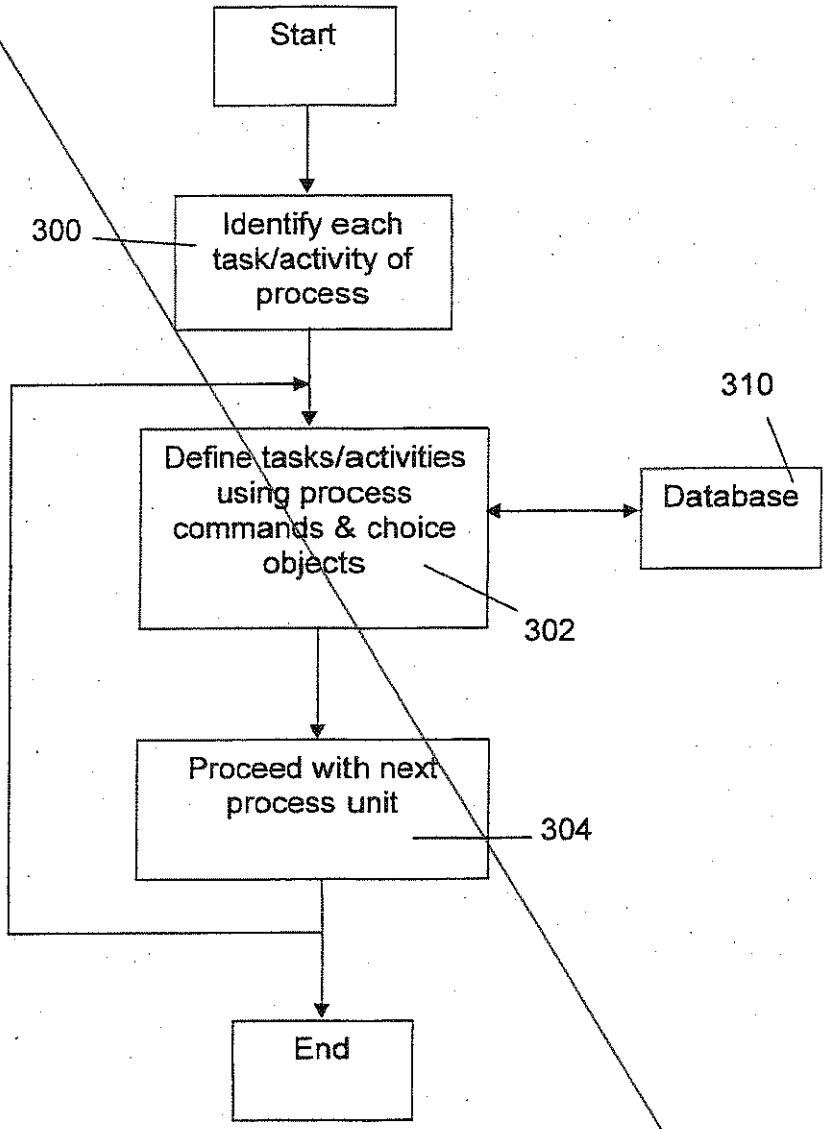


Figure 3

Process Commands 100

accept	compare	duplicate	Locate	request	submit
activate	complete	earmark	Login	response	summarize
adjust	compose	encash	Logout	restructure	sweep
advance	compute	enquire	Modify	resume	top-up
analyse	conduct	enter	Notify	retrieve	track
apply	configure	escalate	Open	return	transfer
approve	confirm	evaluate	Override	reverse	translate
assign	consolidate	execute	Pay	review	trigger
authenticate	contact	feed	Populate	revise	update
authorize	copy	find	Prepare	rollup	upload
bill	create	generate	Print	route	validate
calculate	delete	graph	Purchase	scan	verify
call	deliver	group	Read	search	void
cancel	deposit	hold	Receive	select	withdraw
capture	determine	instruct	Recommend	sell	write-off
change	disburse	interface	Refer	send	
charge	display	interpret	Refund	set-up	
check	distribute	issue	register	settle	
classify	download	keep	remit	split	
close	drill-down	link	renew	stop	

Based on empirical work and actual case study, these process commands are suitable for describing most, if not all, of business processes for banking, retail and airline

Figure 4a

Example of choice objects 102:

sales report, account, account balance, account history, account limit, Personal Identify Number, account static info, account status, alert, annual holding charges, bank charges, black list customer, card, cashier order, charges, check, check book, collateral category, collection item, commission, concess supplier, confirmation letter, contract, corporate, creditor application form, confidential information, current account, customer address, customer identity, customer basic information, customer education, customer electronic address, customer employment, customer name, delivery report, demand draft, dividend, dormant account, factory, fd account, fd certificate, fd passbook, general information change, general ledger, head office, house check, individual, interest accrual, inventory, item checklist, item closing balance, item discontinue form, local branch total, mail transfer, manager, maturity renewal instruction, maturity withdrawal instruction, withdrawal info, merchandise change form, merchandise sample, message, monthly delivery ratio report, new item registration form, new schematic plan, officer, overdraft interest, overdraft interest accrual, overdrawn account, passbook, passbook cover, passbook printer, payment term, penalty charges, penalty request, penalty short delivery form, purchase order, postage, price card, price label, product, request, salary, sales target, savings account, schematic plan, security conversion charges, security sold, selling price, senior general manager, short delivery order, short delivery penalty agreement, specimen card, stamp duty, standing instruction, statement, stock return balance, supplier, supplier amendment charges, supplier change of general information documents, supplier change of important information documents, supplier company profile, supplier contract, supplier evaluation form, supplier information change form, supplier termination form, telegraphic transfer, telephone charges, teller, terminal, transaction, transaction limit, travellers check, unposted items, user password, user profile, vault officer, voucher, voucher copy, cash voucher, withholding tax, account info, records, response, interest, simple interest, compound interest, service fees, reports, compliance reports,

Figure 4b

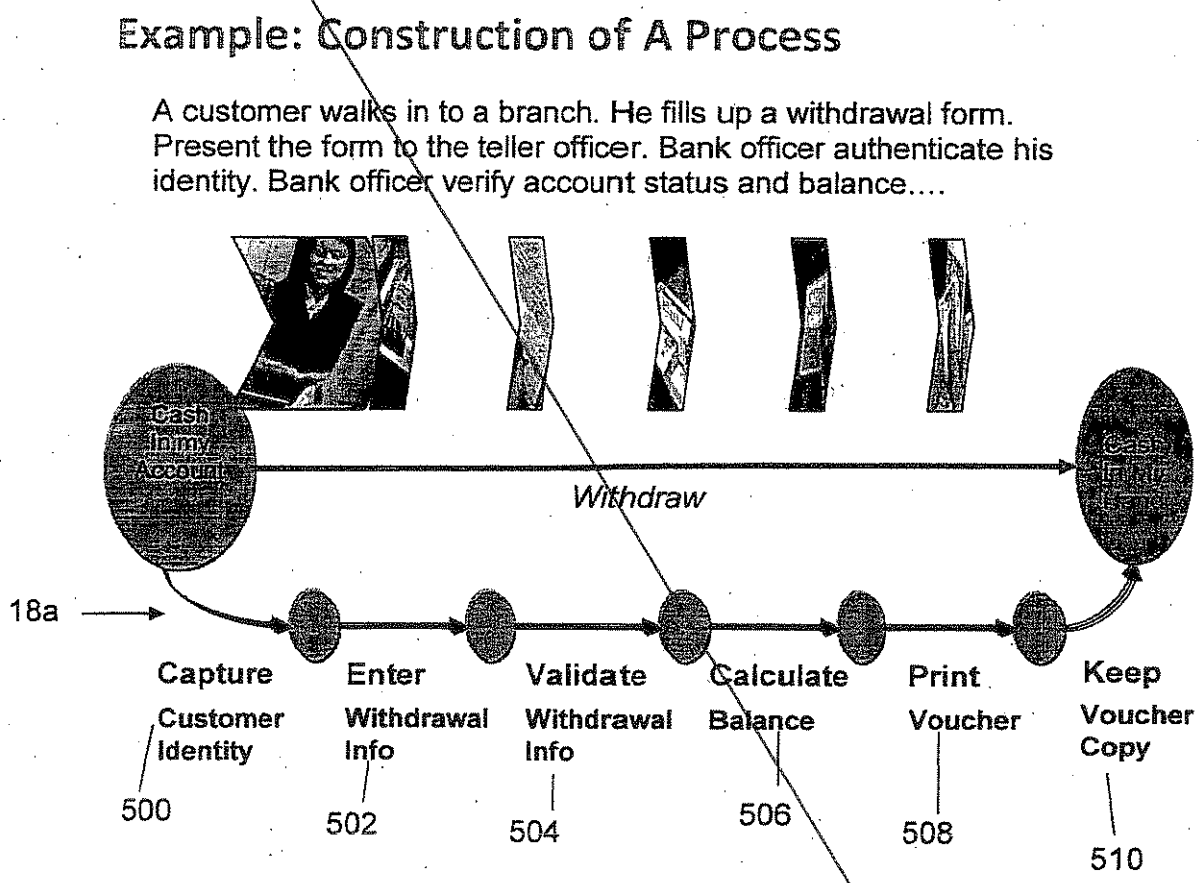

Example: Construction of A Process
A customer walks in to a branch. He fills up a withdrawal form. Present the form to the teller officer. Bank officer authenticate his identity. Bank officer verify account status and balance....
Cash In my Account
Withdraw
18a
Capture Customer Identity
Enter Withdrawal Info
Validate Withdrawal Info
Calculate Balance
Print Voucher
Keep Voucher Copy
500
502
504
506
508
510

Figure 5

Complete Story of a Process
Cash In My Account
Withdraw
Cash In My Hand
Customer Engagement Delivery, 18a
Unification Optimization Translation, 20a
Service Handling, 22a
Configuration, 24a
Computation and composition, 26a
Intelligent, 28a
Capture Customer ID
Keep Voucher copy
Print voucher
Enter withdrawal info
Receive withdrawal info, 620
Route withdrawal info, 626
Validate withdrawal info, 622
Translate withdrawal info, 624
Validate withdrawal info
Submit/calculate balance
Validate account info, 628
Send Response, 634
Write records, 630
Update records, 632
Refer information, 636
Compute interest, 638
Compute service fees, 640
Distribute Reports, 644
Generate Reports, 642
Verify compliance reports, 652
Generate compliance reports, 646
Distribute compliance reports, 648
Print compliance reports, 650

Figure 6

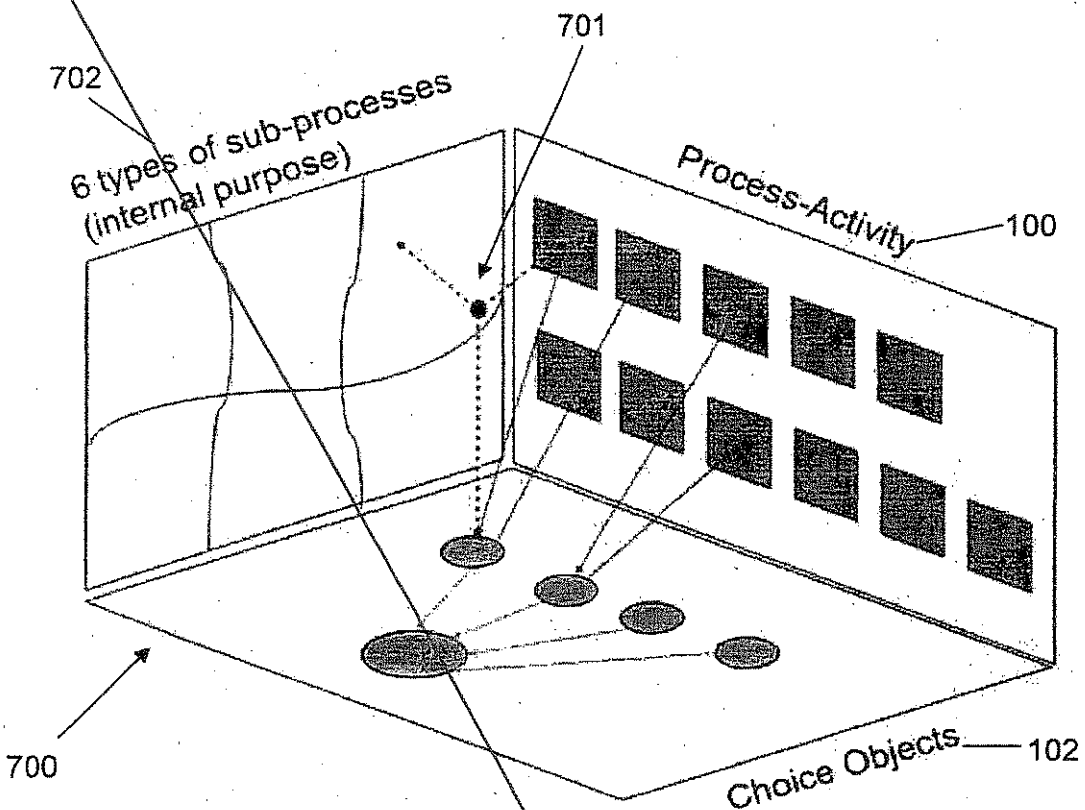

701
702
6 types of sub-processes
(internal purpose)
Process-Activity
100
700
Choice Objects
102

Figure 7

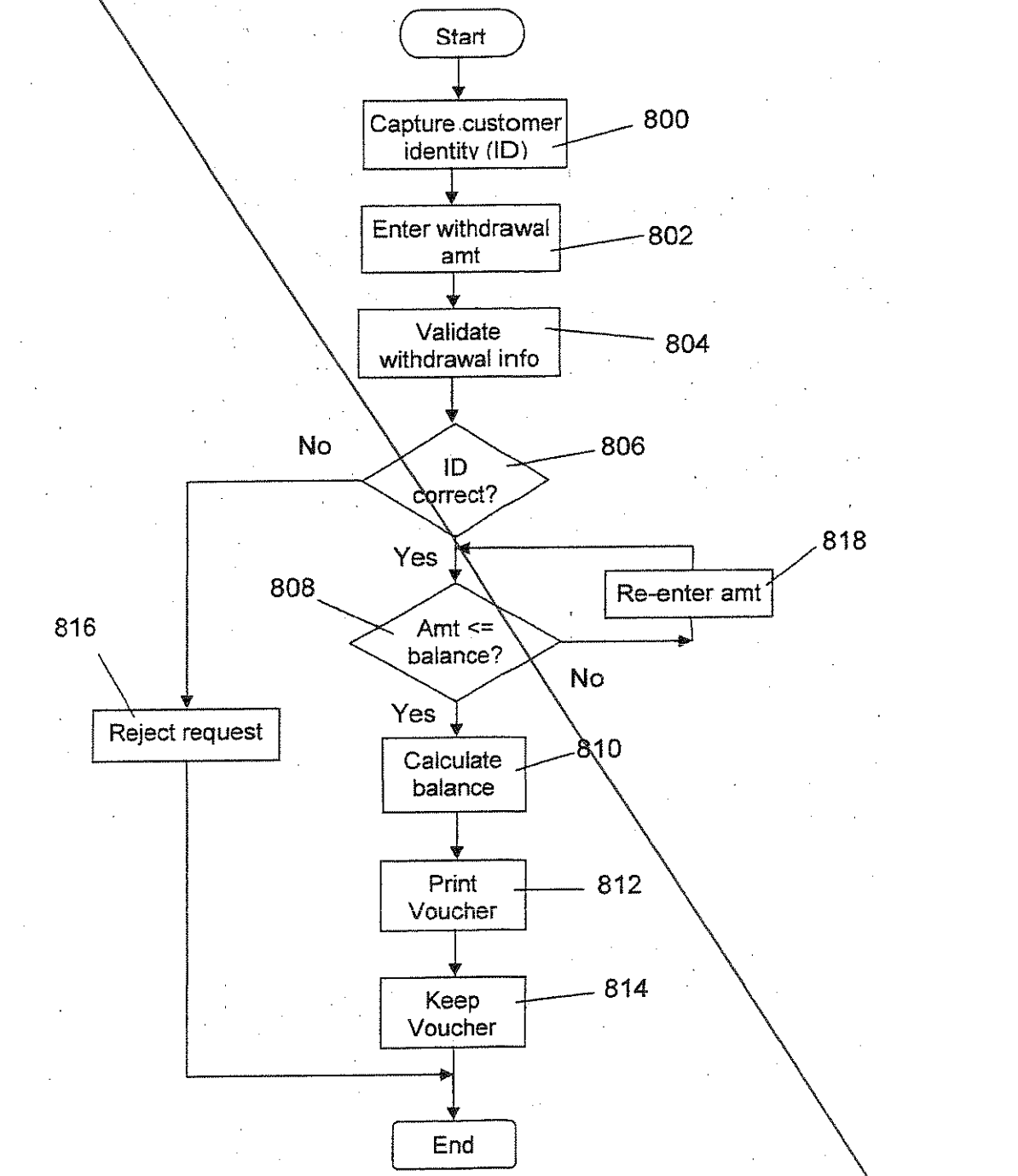

Start
Capture customer identity (ID)
800
Enter withdrawal amt
802
Validate withdrawal info
804
ID correct?
806
No
Yes
Re-enter amt
818
Amt <= balance?
808
No
Yes
816
Reject request
Calculate balance
810
Print Voucher
812
Keep Voucher
814
End

Figure 8

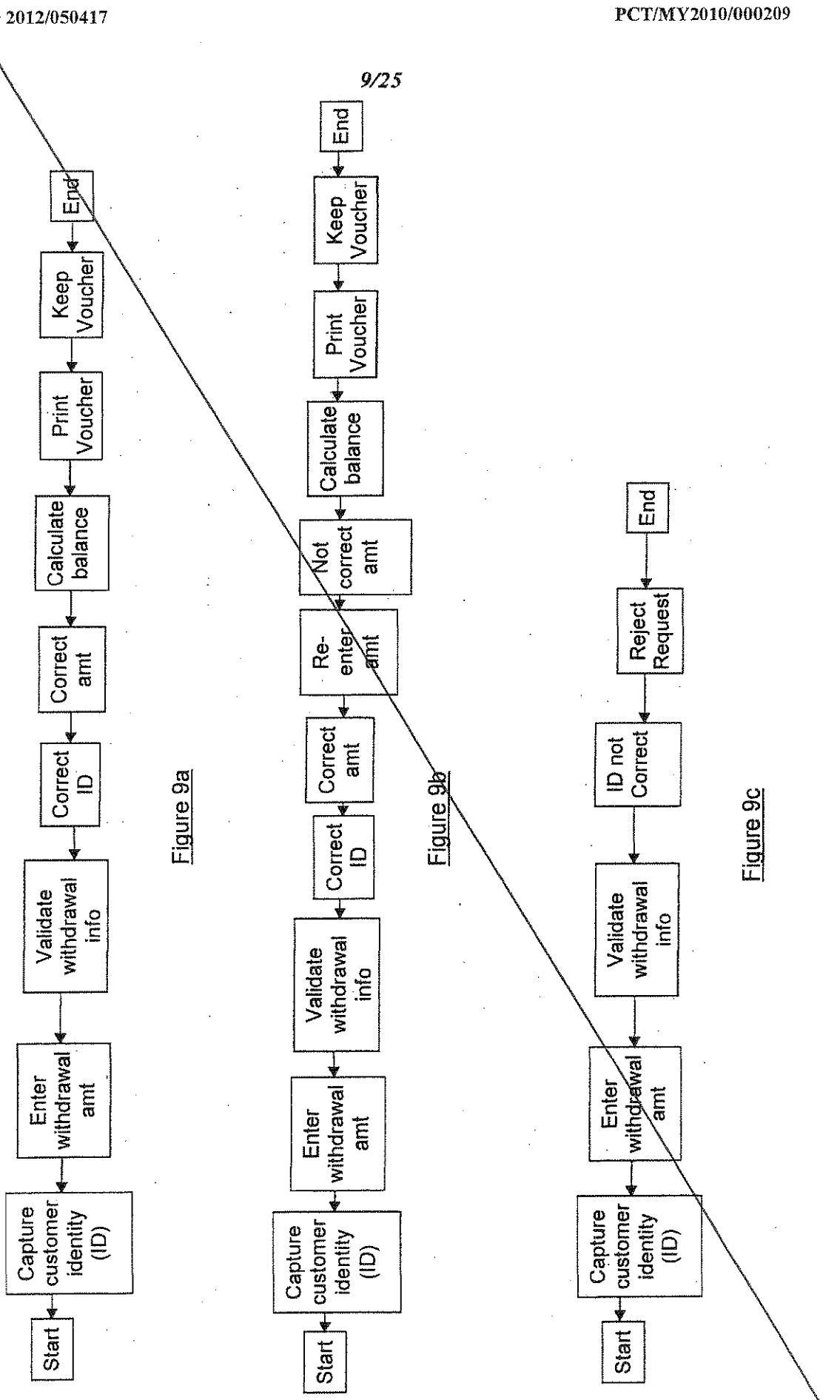


Figure 9a

Figure 9b

Figure 9c

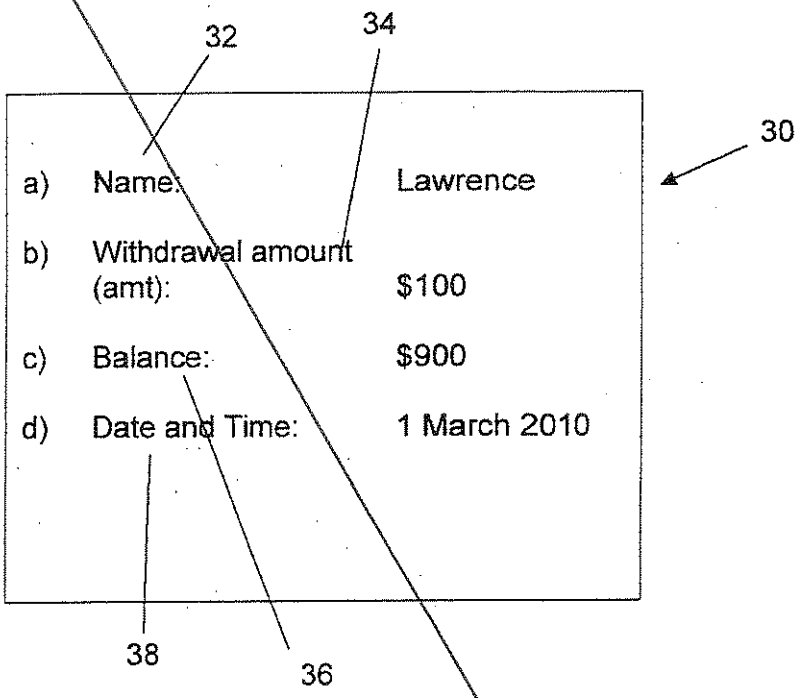

32
34
30
a) Name: Lawrence
b) Withdrawal amount (amt): $100
c) Balance: $900
d) Date and Time: 1 March 2010
38
36

Figure 10

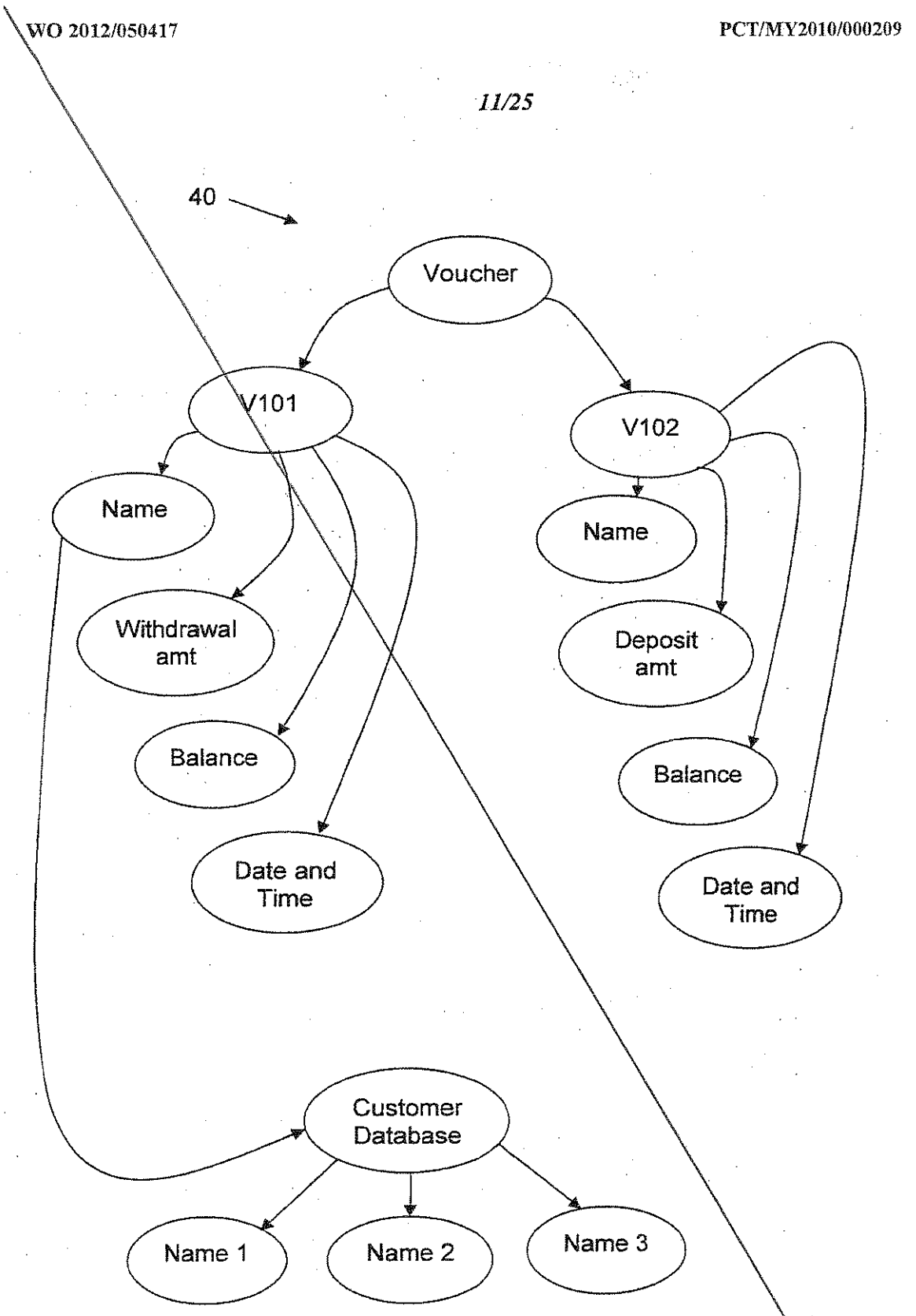

40
Voucher
V101
V102
Name
Withdrawal amt
Balance
Date and Time
Name
Deposit amt
Balance
Date and Time
Customer Database
Name 1
Name 2
Name 3

Figure 11

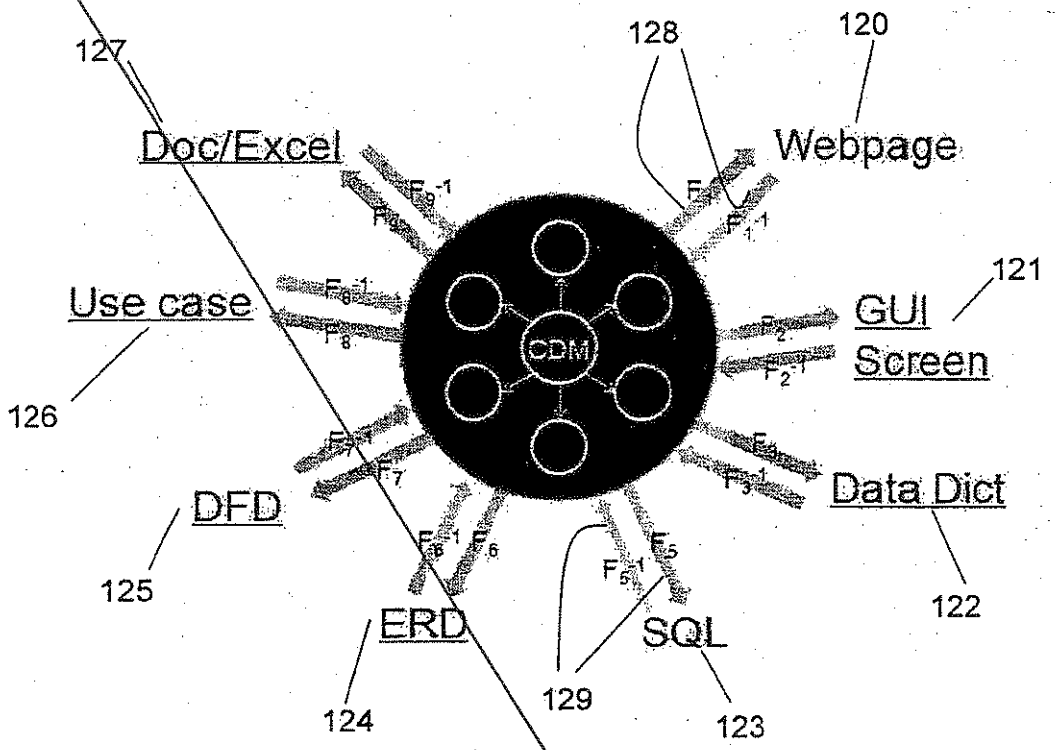
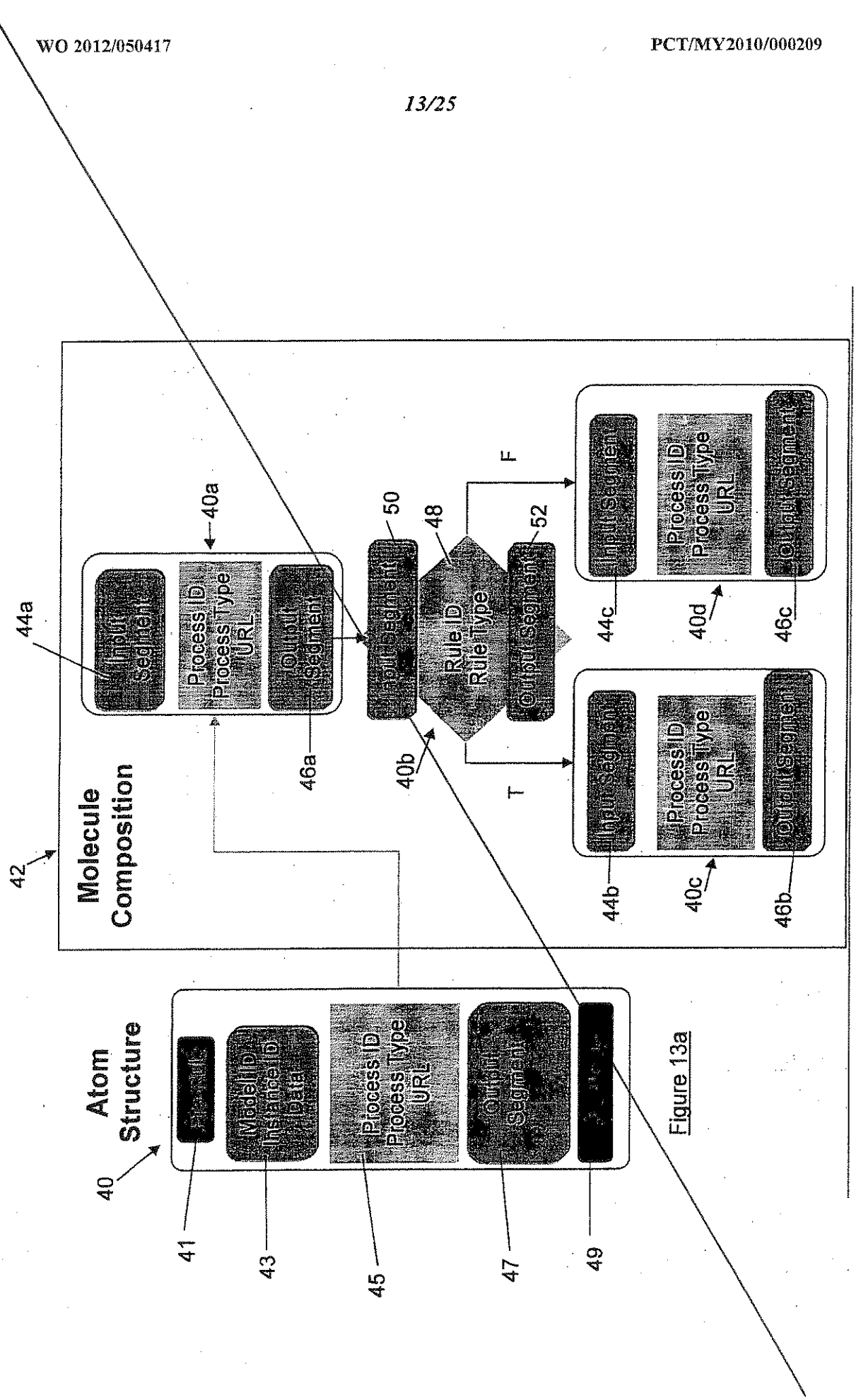

127
Doc/Excel
128
120
Webpage
121
Use case
GUI
Screen
126
CDM
DFD
Data Dict
125
122
ERD
SQL
124
129
123

Figure 12


Atom Structure
40
41
Model ID
Instance ID
Data
43
Process ID
Process Type
URL
45
Output Segment
47
49
Figure 13a
Molecule Composition
42
44a
Input Segment
Process ID
Process Type
URL
40a
Output Segment
46a
Input Segment
50
Rule ID
Rule Type
48
Output Segment
52
F
T
40b
Input Segment
Process ID
Process Type
URL
Output Segment
44c
40d
46c
Input Segment
Process ID
Process Type
URL
Output Segment
44b
40c
46b
Figure 13b

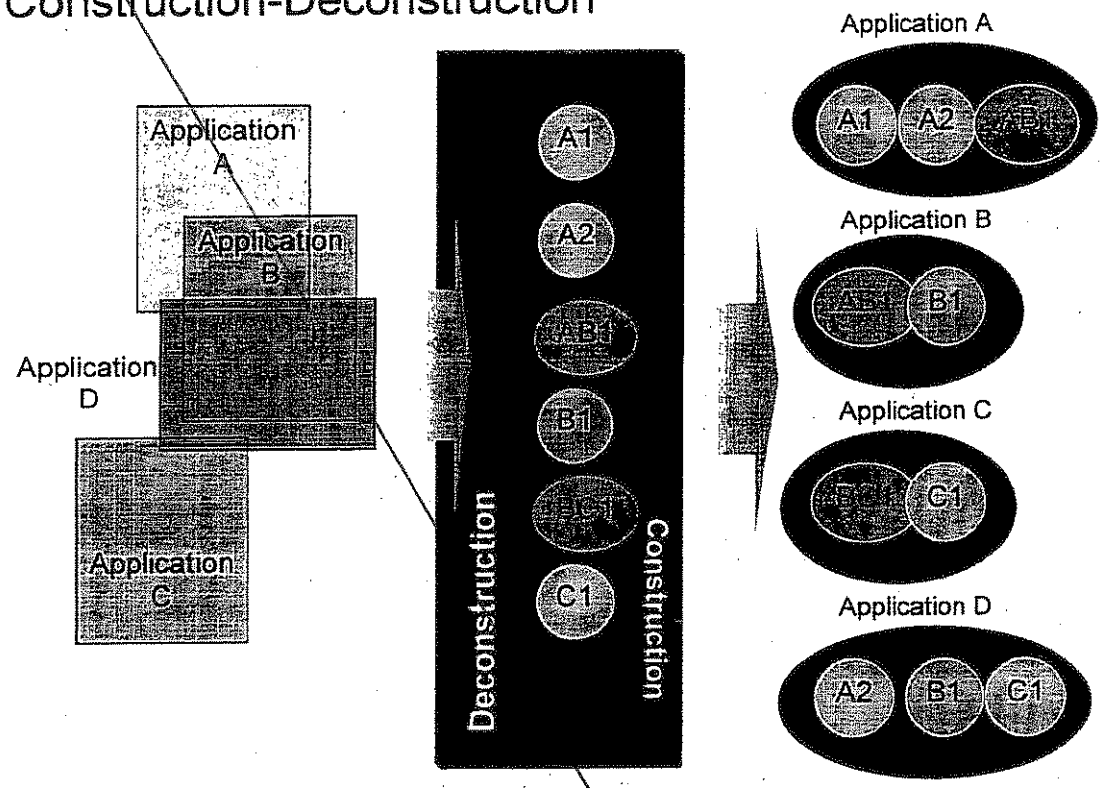

Construction-Deconstruction
Application A
Application B
Application C
Application D
A1
A2
AB1
B1
BC1
C1
Deconstruction
Construction

Figure 14

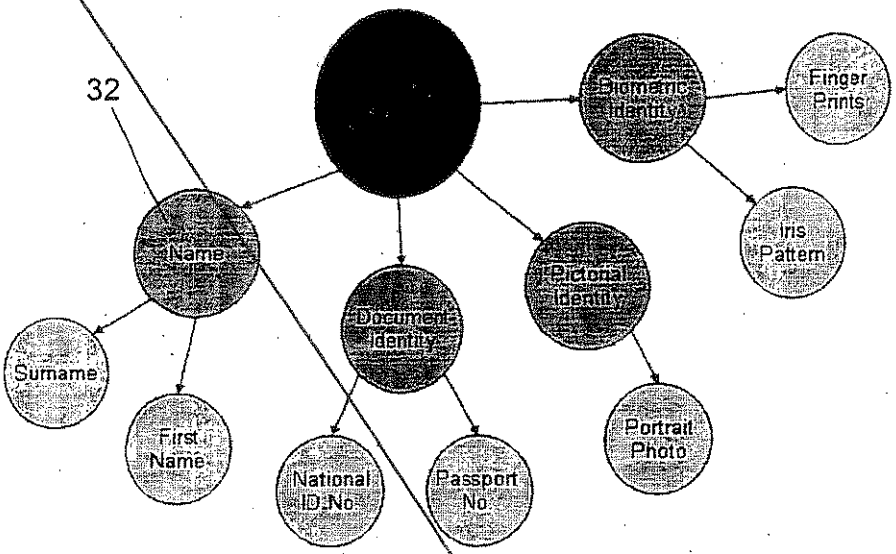


Figure 15

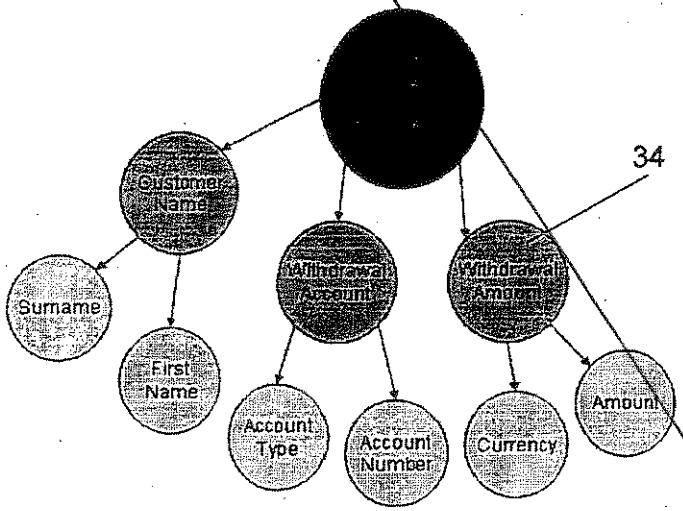


Figure 16

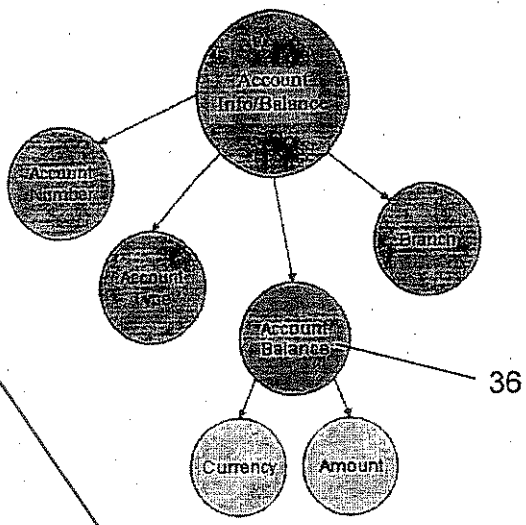


Figure 17

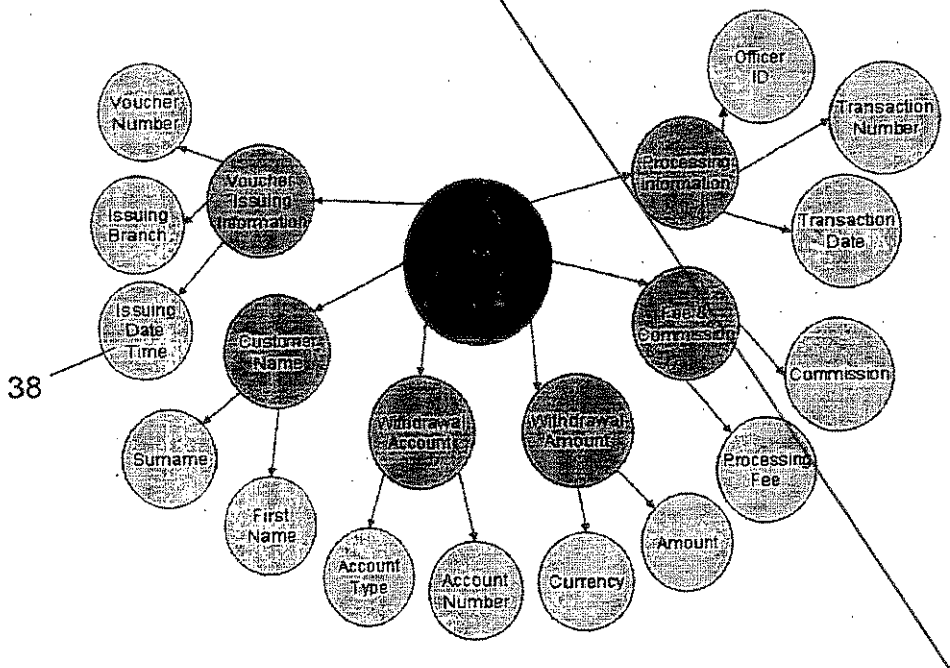


Figure 18

Process commands	Choice Objects			
	A	B	C	D
P1	ATM1	ATM2	ATM5	ATM5
P2	ATM6	ATM4	ATM10	ATM16
P3	ATM3	ATM19	ATM10	ATM7
P4	ATM18	ATM20	ATM17	ATM23

Figure 19

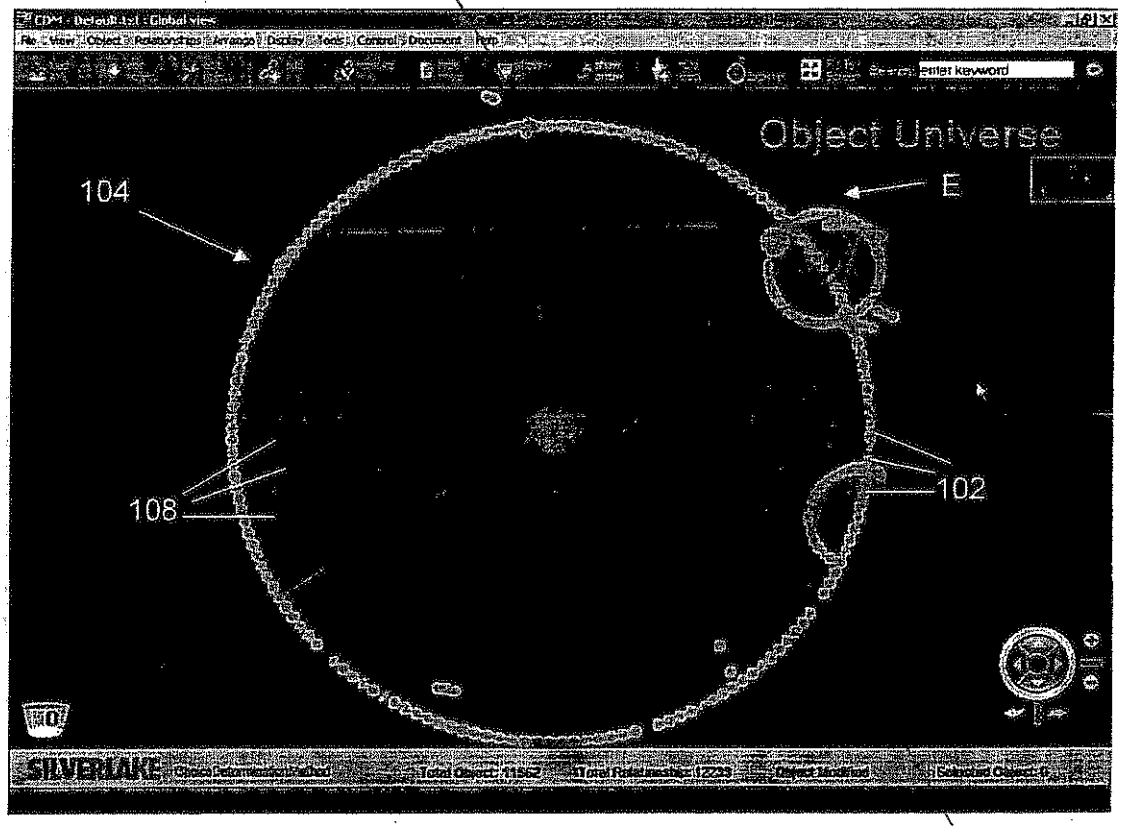


Figure 20

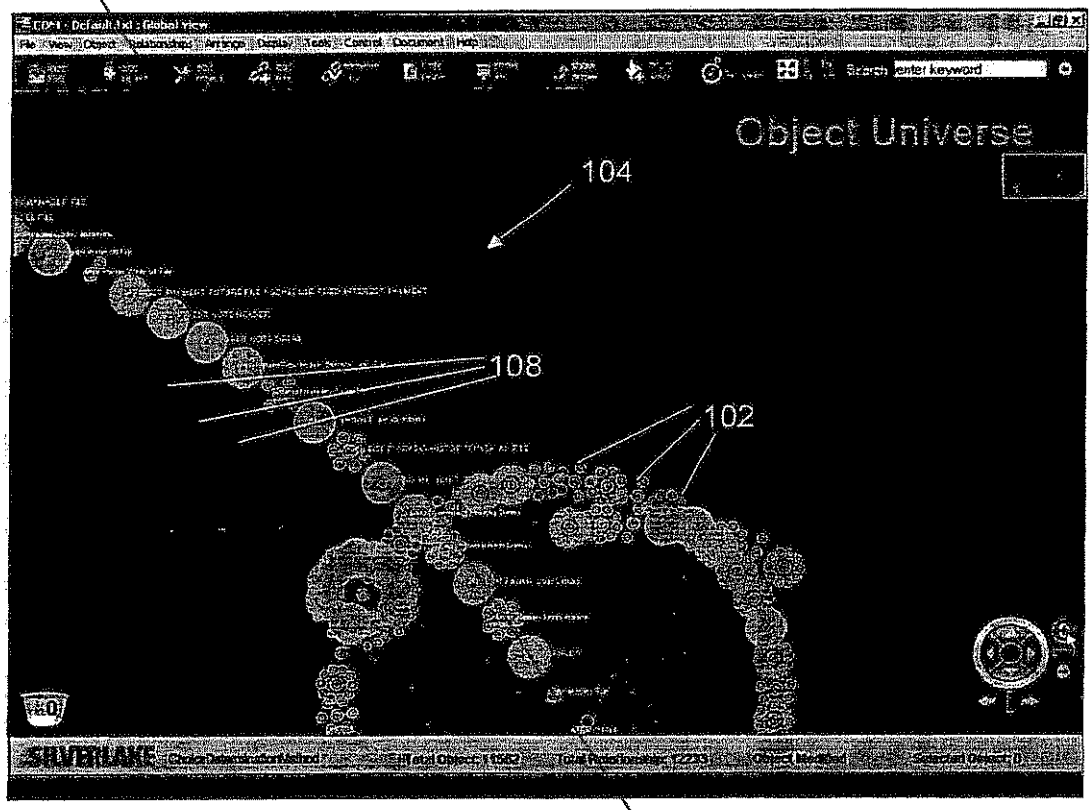


Figure 21

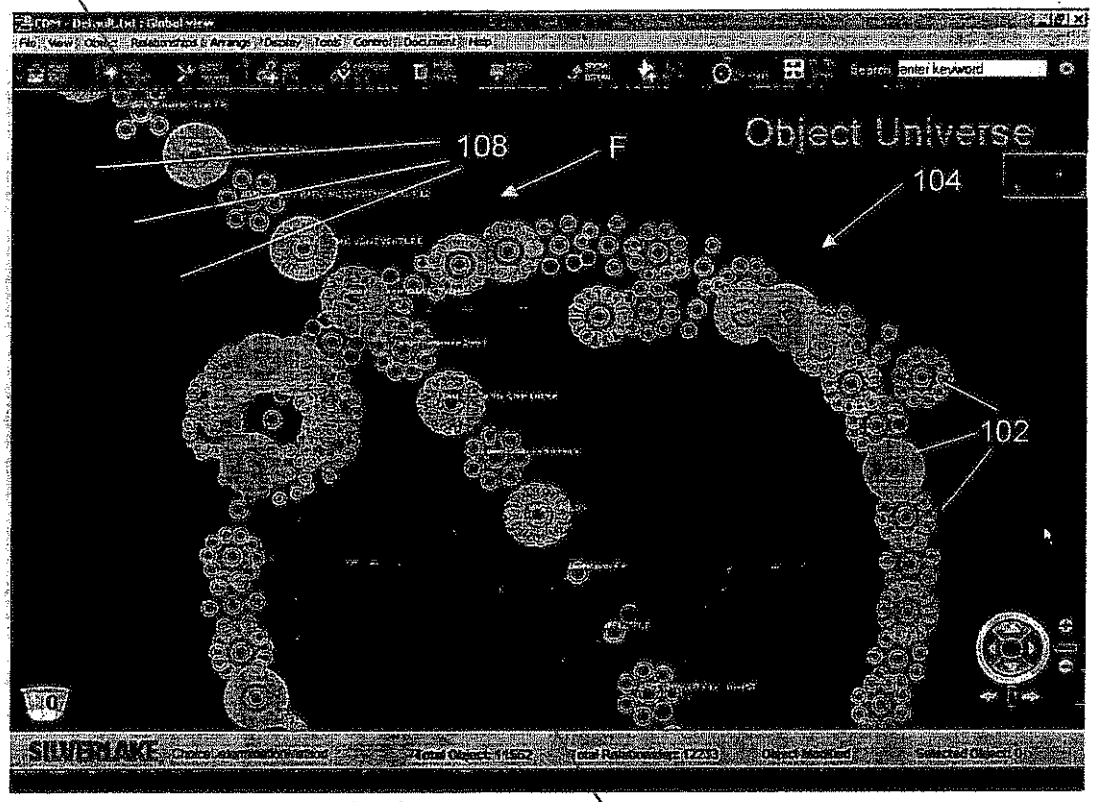


Figure 22

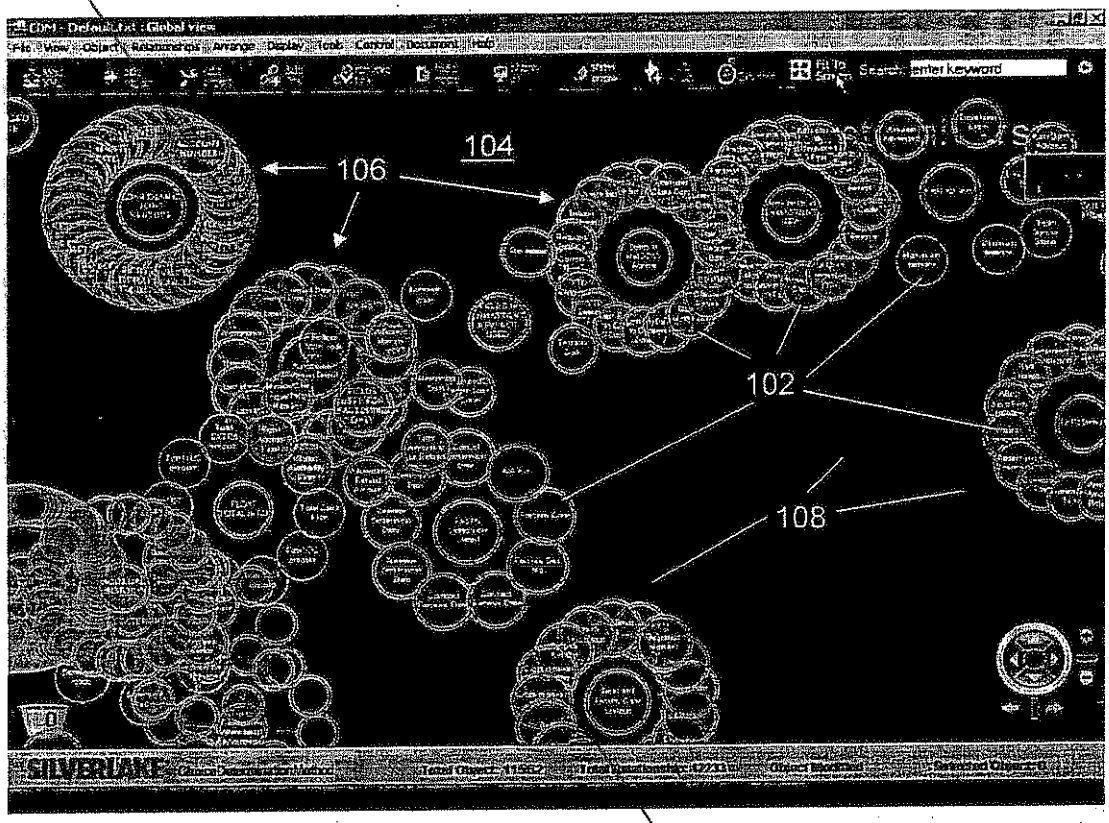


Figure 23

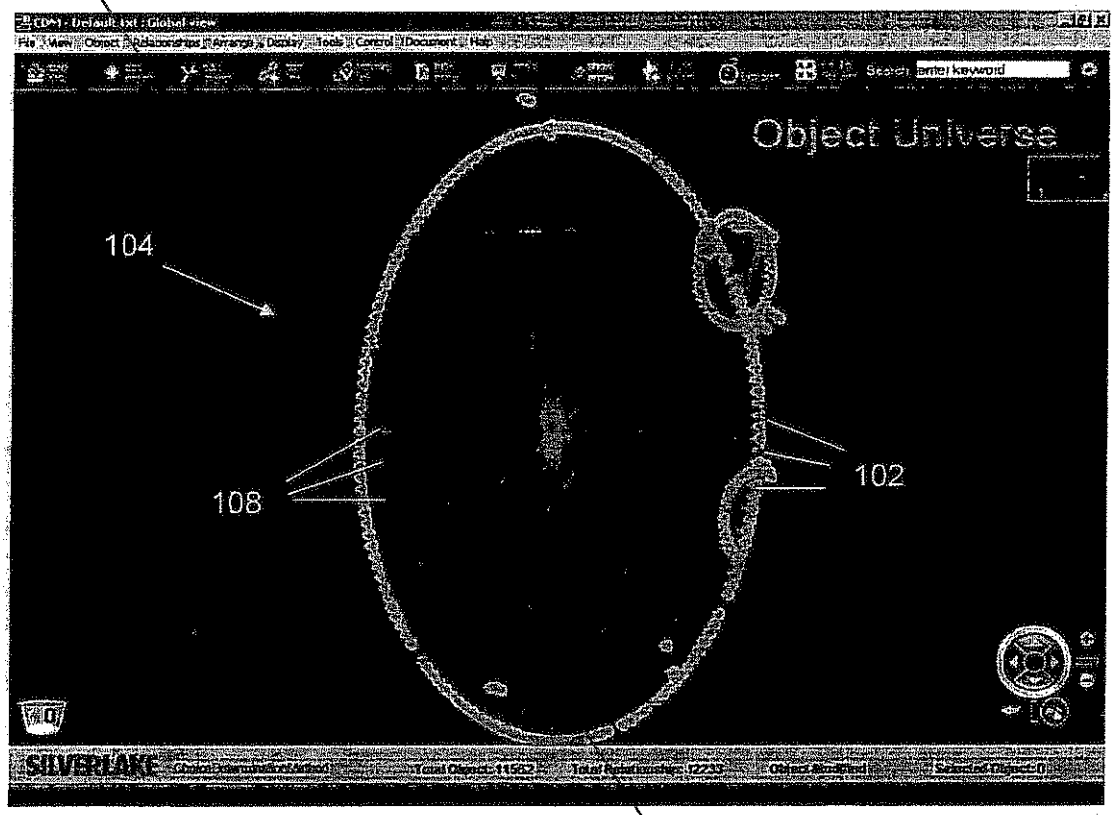


Figure 24

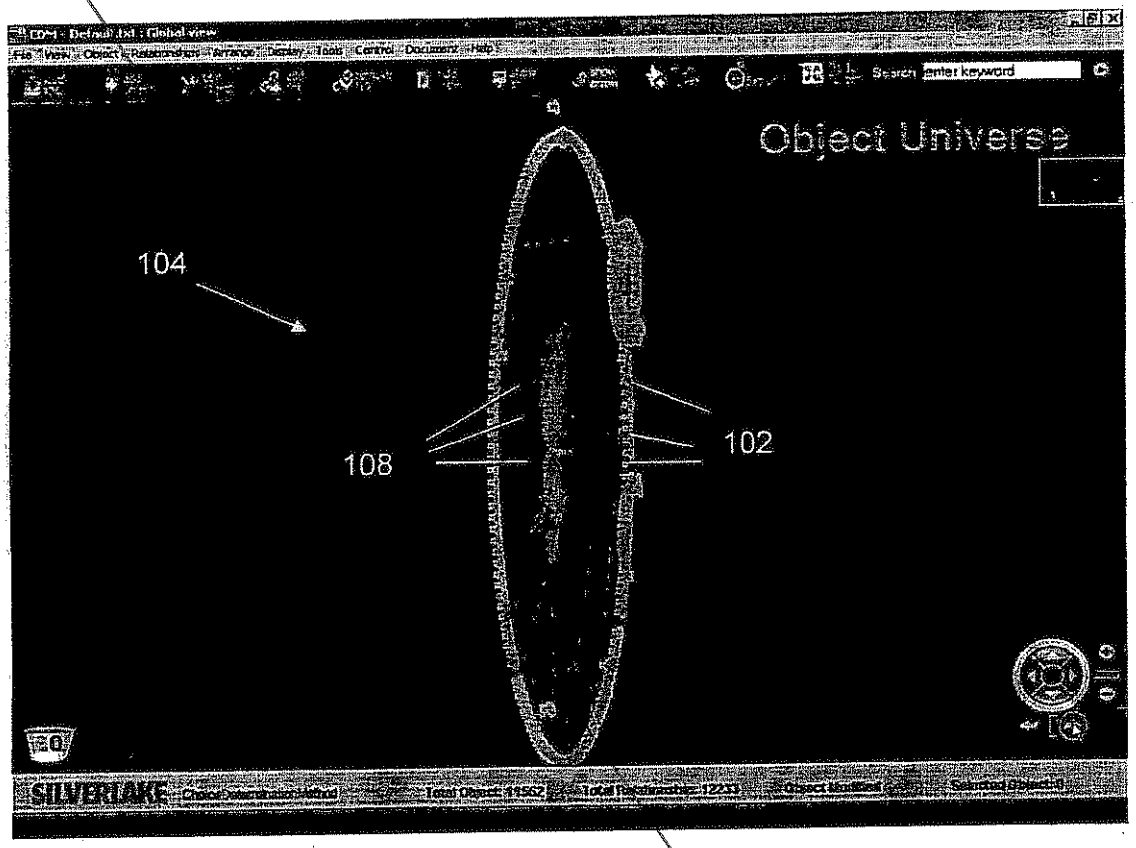


Figure 25

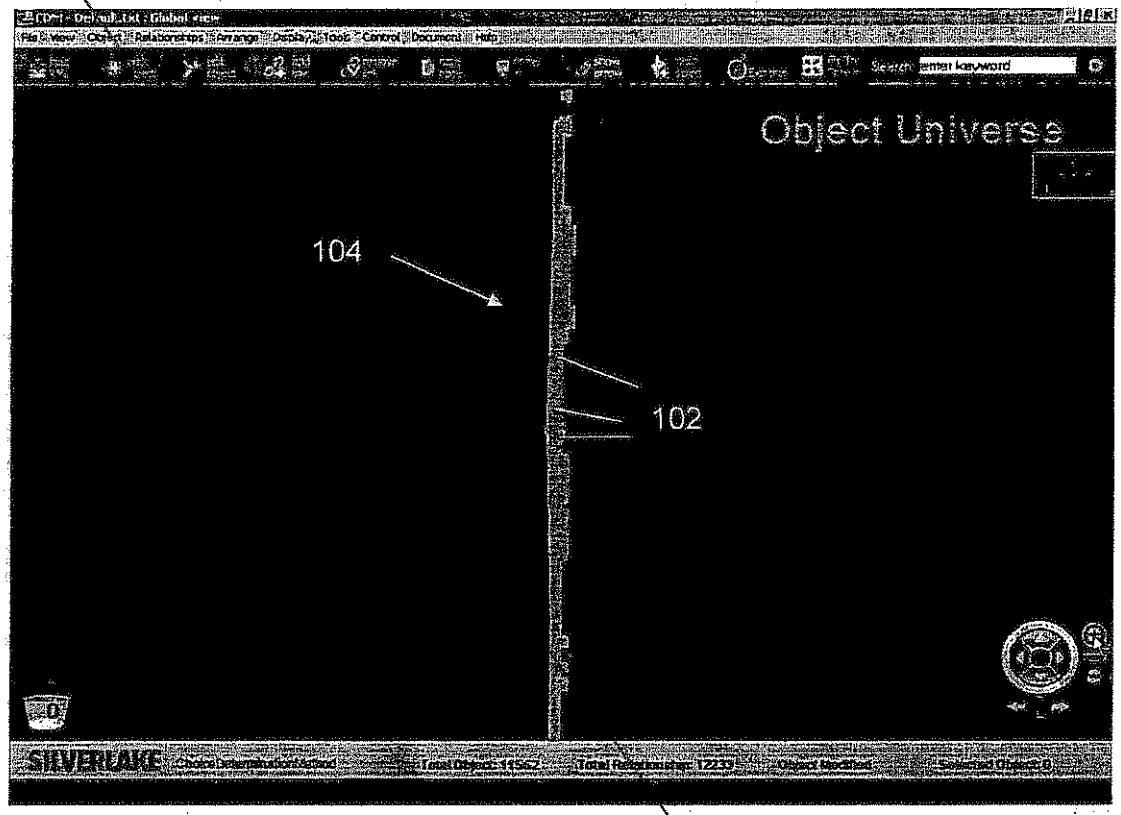


Figure 26

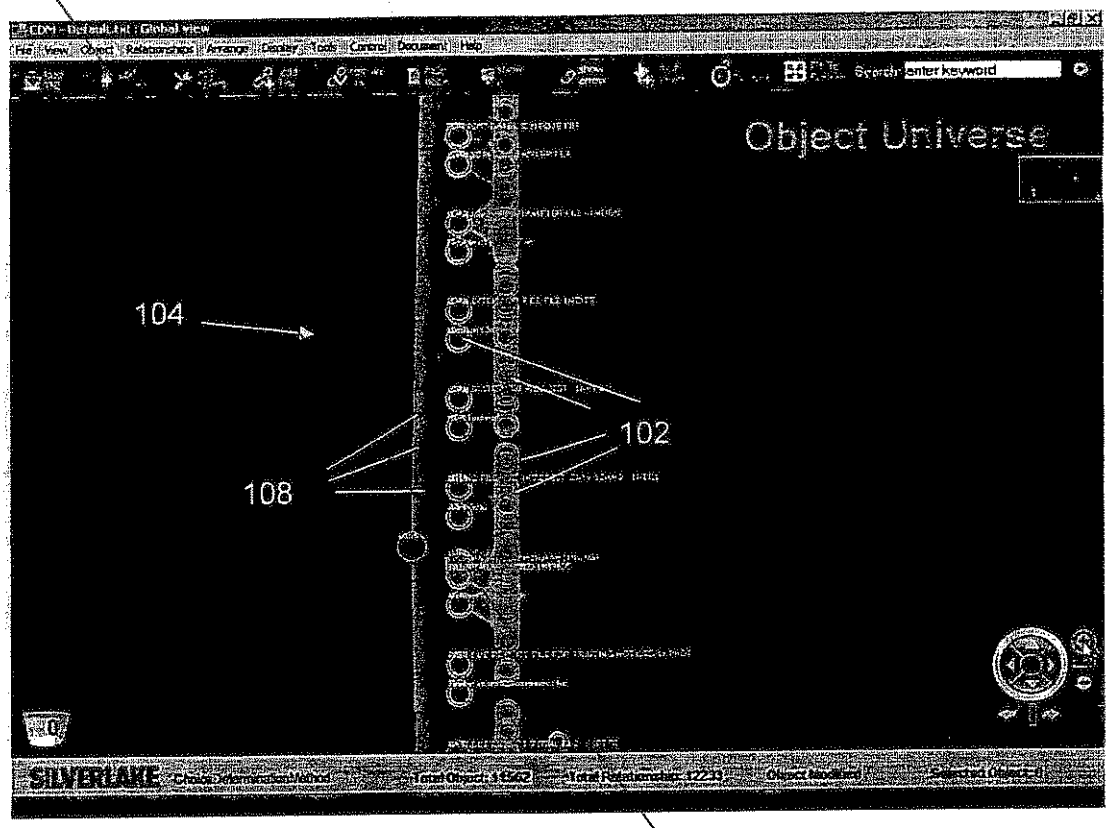


Figure 27

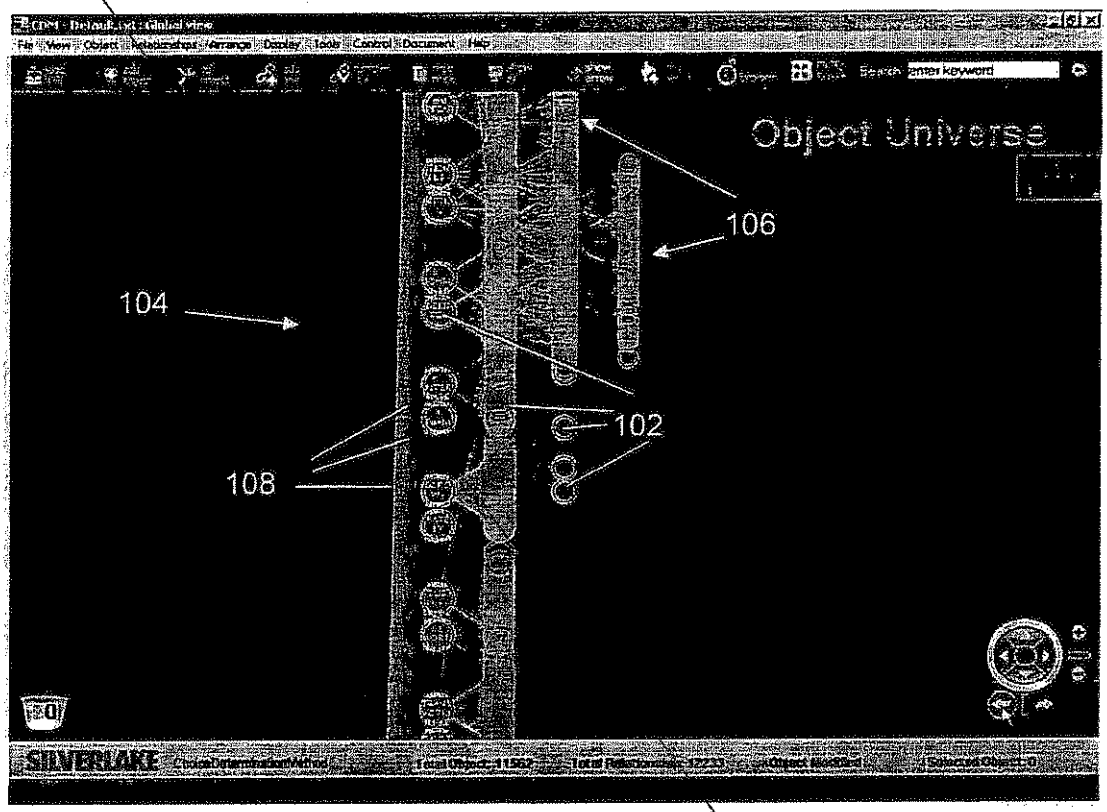


Figure 28

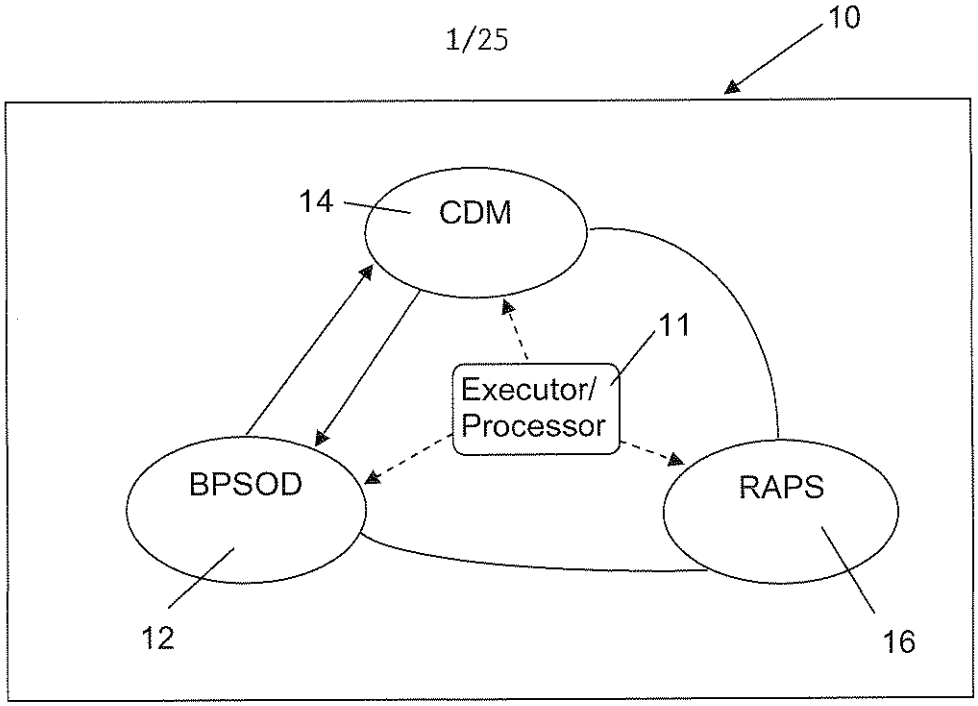


Figure 1

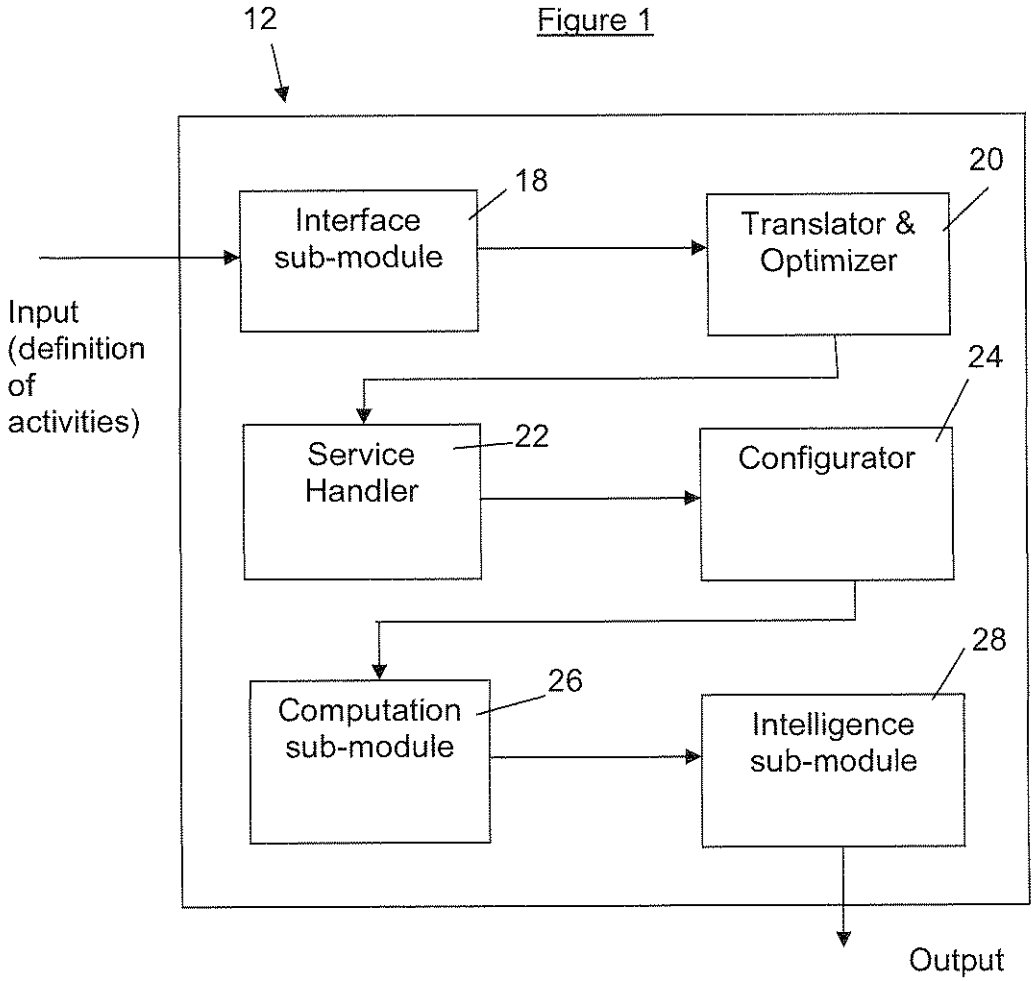


Figure 2

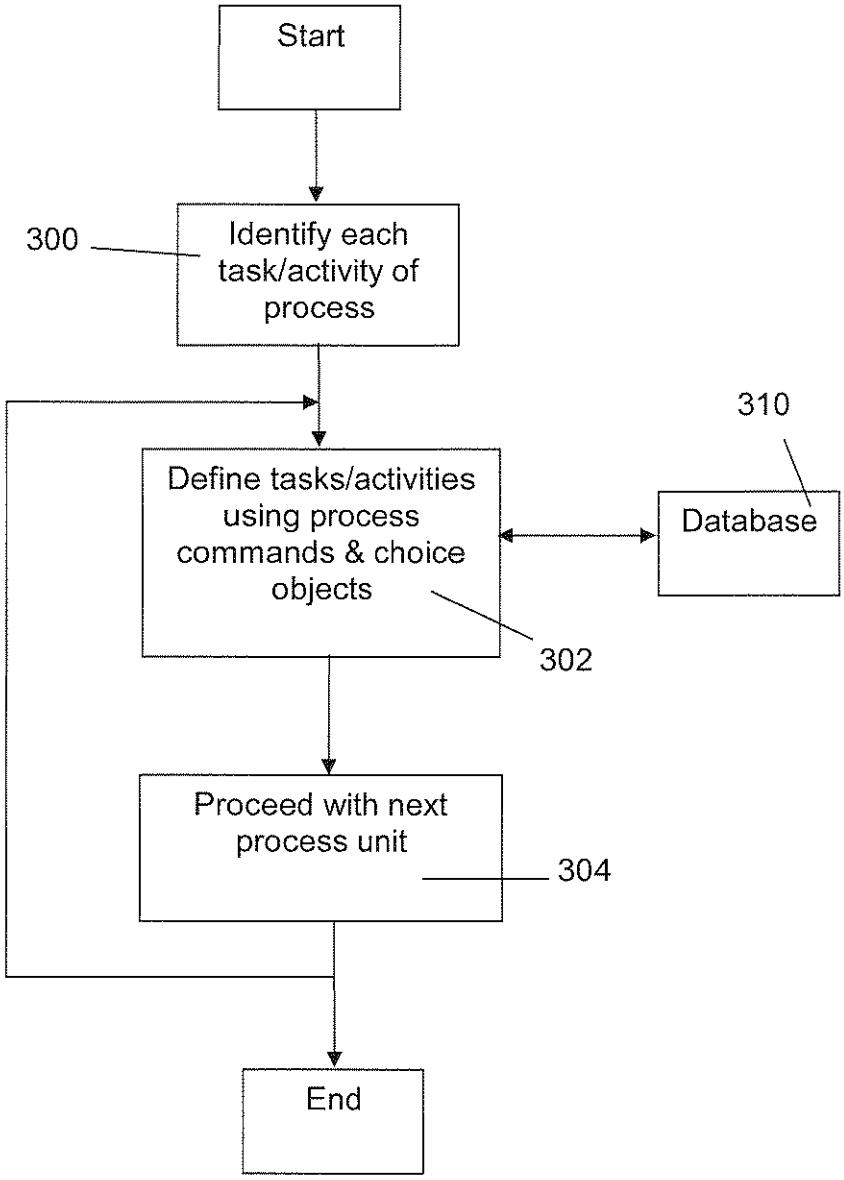

Start
300
Identify each task/activity of process
310
Define tasks/activities using process commands & choice objects
Database
302
Proceed with next process unit
304
End

Figure 3

Process Commands 100

accept	compare	duplicate	Locate	request	submit
activate	complete	earmark	Login	response	summarize
adjust	compose	encash	Logout	restructure	sweep
advance	compute	enquire	Modify	resume	top-up
analyse	conduct	enter	Notify	retrieve	track
apply	configure	escalate	Open	return	transfer
approve	confirm	evaluate	Override	reverse	translate
assign	consolidate	execute	Pay	review	trigger
authenticate	contact	feed	Populate	revise	update
authorize	copy	find	Prepare	rollup	upload
bill	create	generate	Print	route	validate
calculate	delete	graph	Purchase	scan	verify
call	deliver	group	Read	search	void
cancel	deposit	hold	Receive	select	withdraw
capture	determine	instruct	Recommend	sell	write
change	disburse	interface	Refer	send	write-off
charge	display	interpret	Refund	set	
check	distribute	issue	register	settle	
classify	download	keep	remit	sort	
close	drill-down	link	renew	stop	

Based on empirical work and actual case study, these process commands are suitable for describing most, if not all, of business processes for banking, retail and airline

Figure 4a

Example of choice objects 102:

sales report, account, account balance, account history, account limit, Personal Identify Number, account static info, account status, alert, annual holding charges, bank charges, black list customer, card, cashier order, charges, check, check book, collateral category, collection item, commission, concess supplier, confirmation letter, contract, corporate, creditor application form, confidential information, current account, customer address, customer identity, customer basic information, customer education, customer electronic address, customer employment, customer name, delivery report, demand draft, dividend, dormant account, factory, fd account, fd certificate, fd passbook, general information change, general ledger, head office, house check, individual, interest accrual, inventory, item checklist, item closing balance, item discontinue form, local branch total, mail transfer, manager, maturity renewal instruction, maturity withdrawal instruction, withdrawal info, merchandise change form, merchandise sample, message, monthly delivery ratio report, new item registration form, new schematic plan, officer, overdraft interest, overdraft interest accrual, overdrawn account, passbook, passbook cover, passbook printer, payment term, penalty charges, penalty request, penalty short delivery form, purchase order, postage, price card, price label, product, request, salary, sales target, savings account, schematic plan, security conversion charges, security sold, selling price, senior general manager, short delivery order, short delivery penalty agreement, specimen card, stamp duty, standing instruction, statement, stock return balance, supplier, supplier amendment charges, supplier change of general information documents, supplier change of important information documents, supplier company profile, supplier contract, supplier evaluation form, supplier information change form, supplier termination form, telegraphic transfer, telephone charges, teller, terminal, transaction, transaction limit, travellers check, unposted items, user password, user profile, vault officer, voucher, voucher copy, cash voucher, withholding tax, account info, records, response, interest, simple interest, compound interest, service fees, reports, compliance reports,

Figure 4b

Example: Construction of A Process

A customer walks in to a branch. He fills up a withdrawal form. Present the form to the teller officer. Bank officer authenticate his identity. Bank officer verify account status and balance....

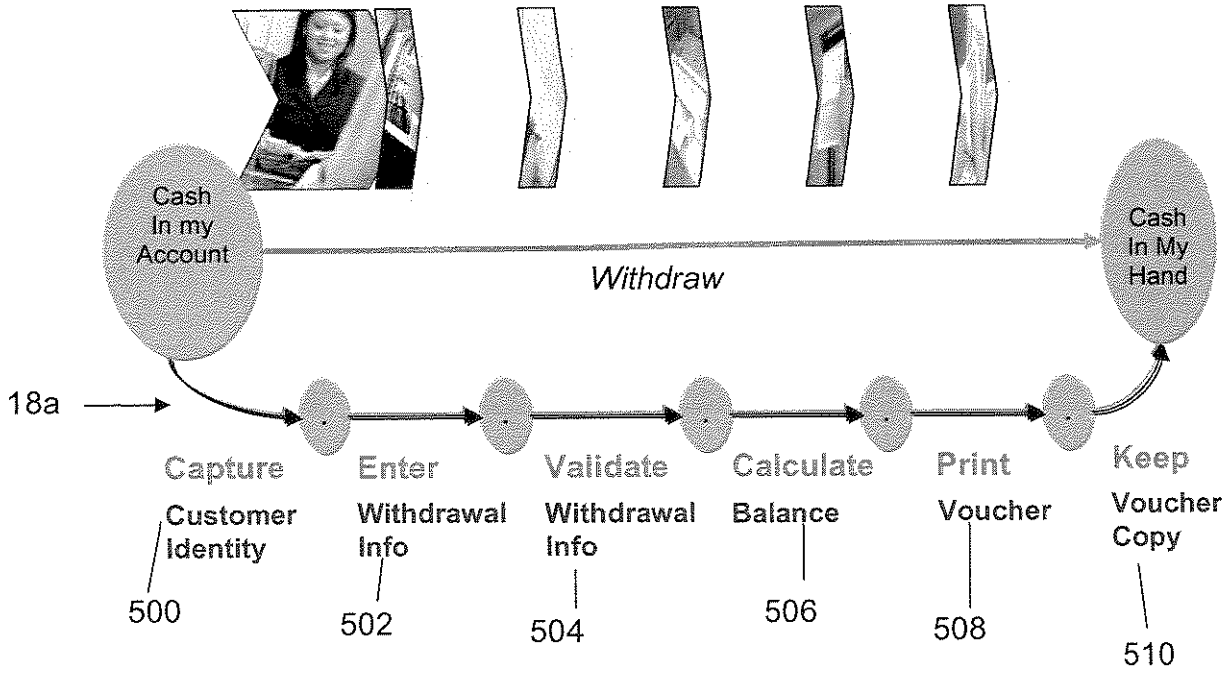


Figure 5

Complete Story of a Process

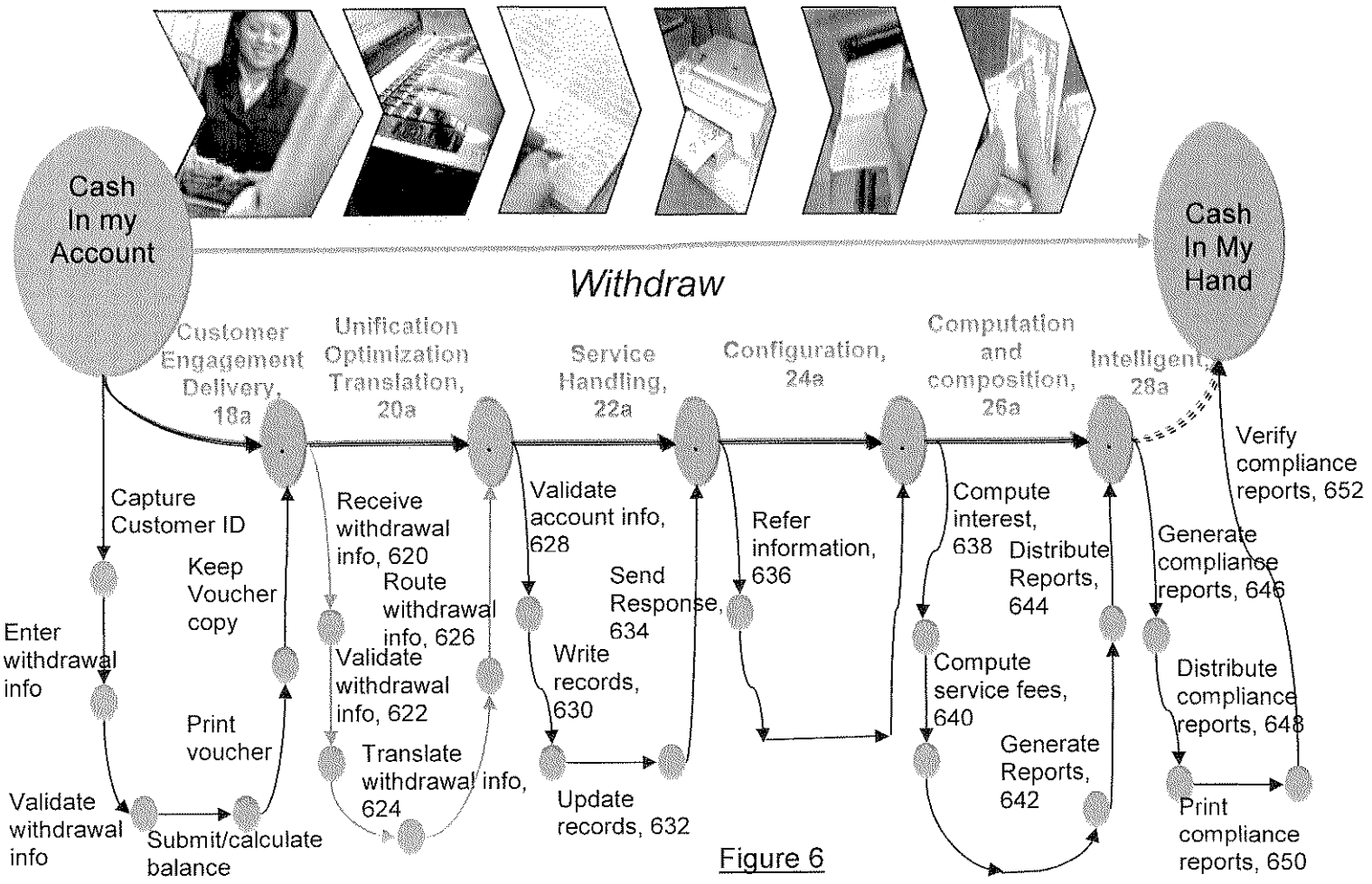


Figure 6

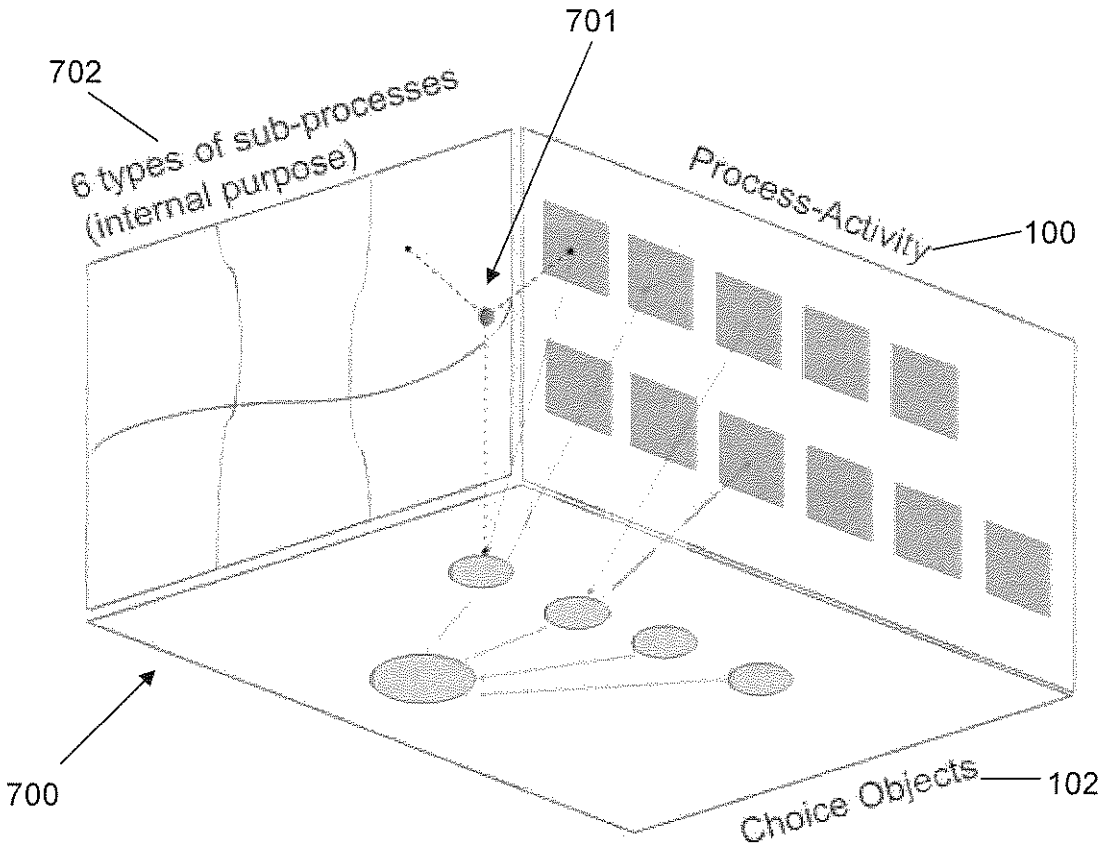

701
702
6 types of sub-processes
(internal purpose)
Process-Activity
100
700
Choice Objects
102

Figure 7

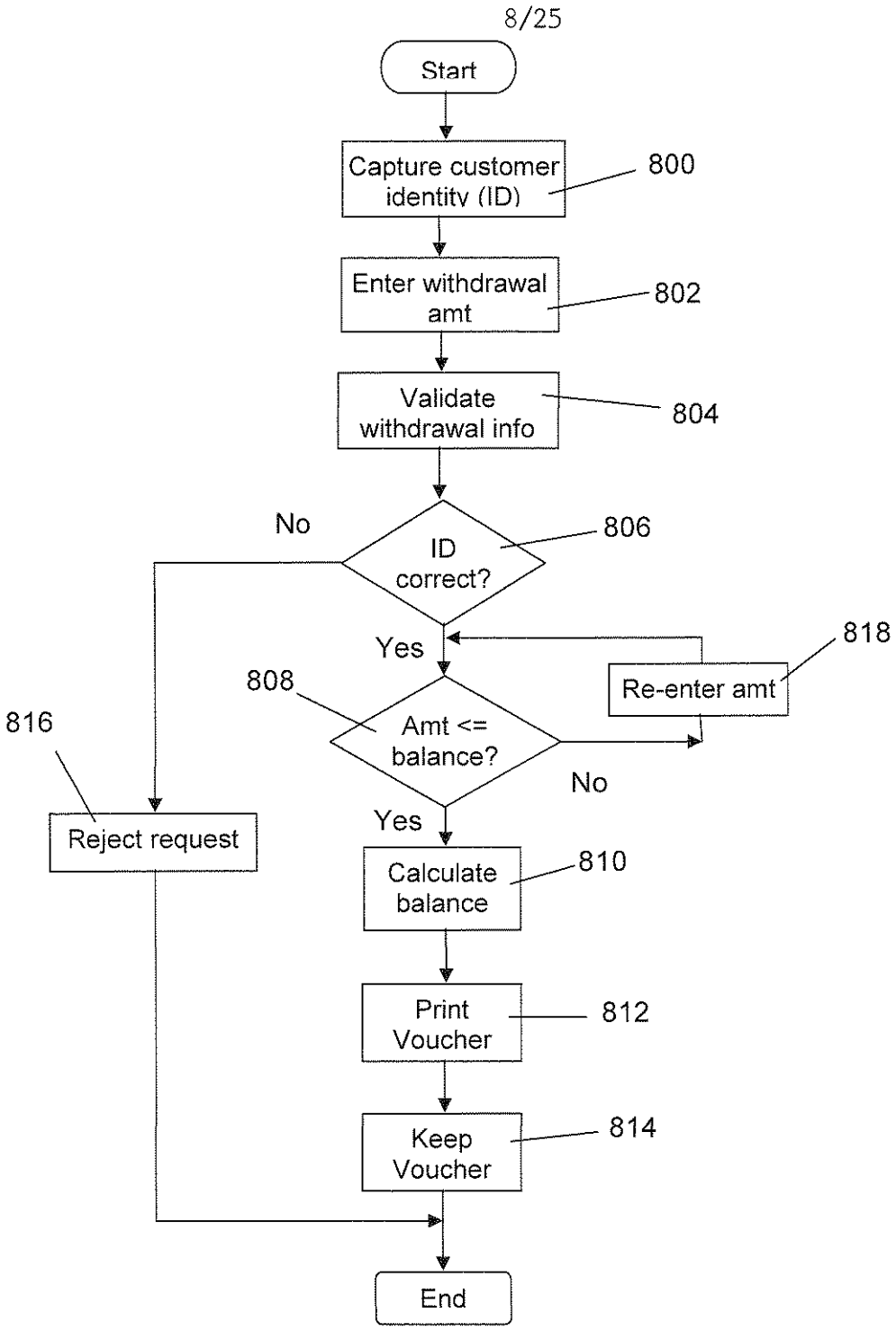

Start
Capture customer identity (ID)
800
Enter withdrawal amt
802
Validate withdrawal info
804
No
ID correct?
806
Yes
818
Re-enter amt
808
Amt <= balance?
816
No
Reject request
Yes
Calculate balance
810
Print Voucher
812
Keep Voucher
814
End

Figure 8

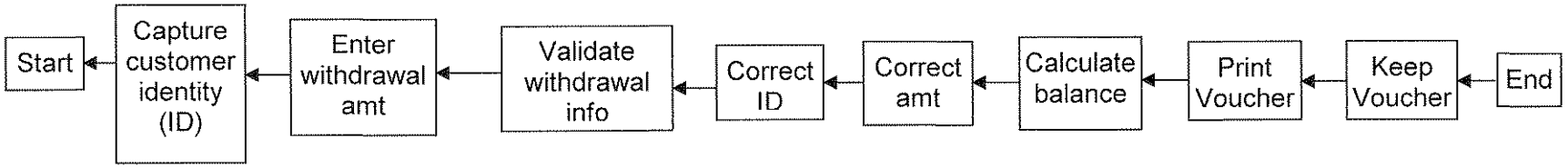


Figure 9a

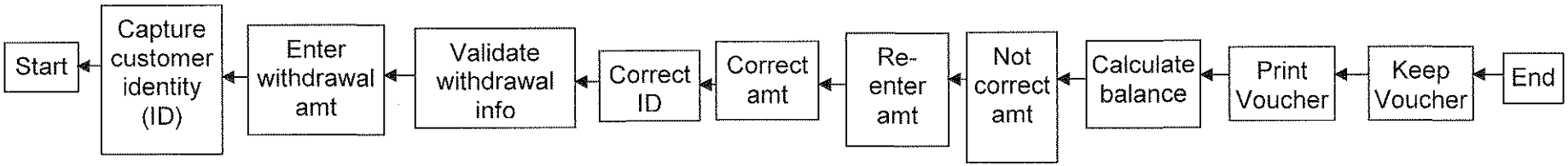


Figure 9b

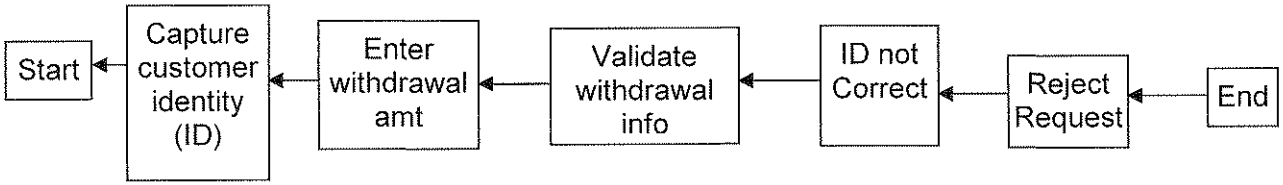


Figure 9c

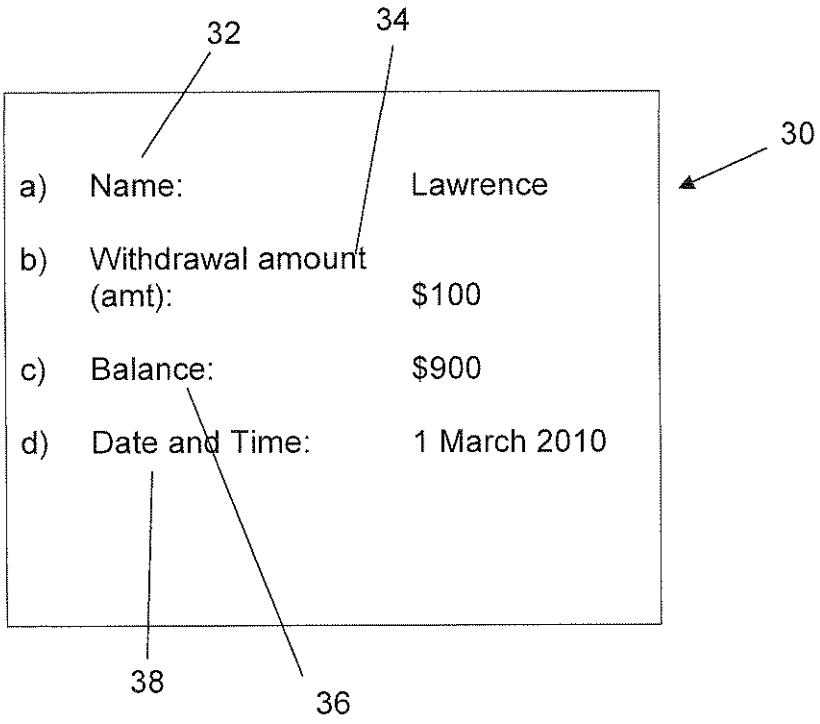

32
34
30
a) Name: Lawrence
b) Withdrawal amount (amt): $100
c) Balance: $900
d) Date and Time: 1 March 2010
38
36

Figure 10

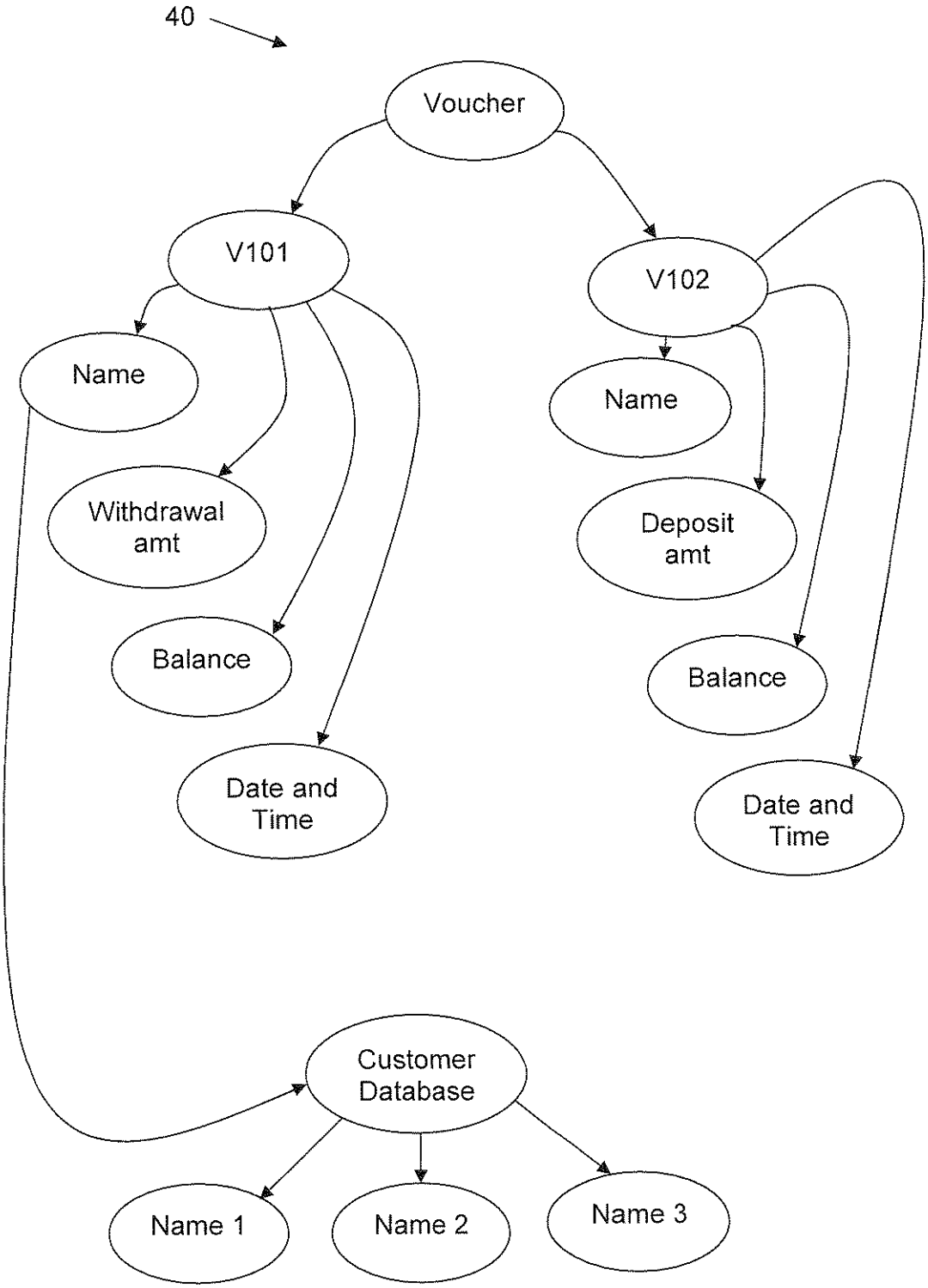

40
Voucher
V101
V102
Name
Withdrawal amt
Balance
Date and Time
Name
Deposit amt
Balance
Date and Time
Customer Database
Name 1
Name 2
Name 3

Figure 11

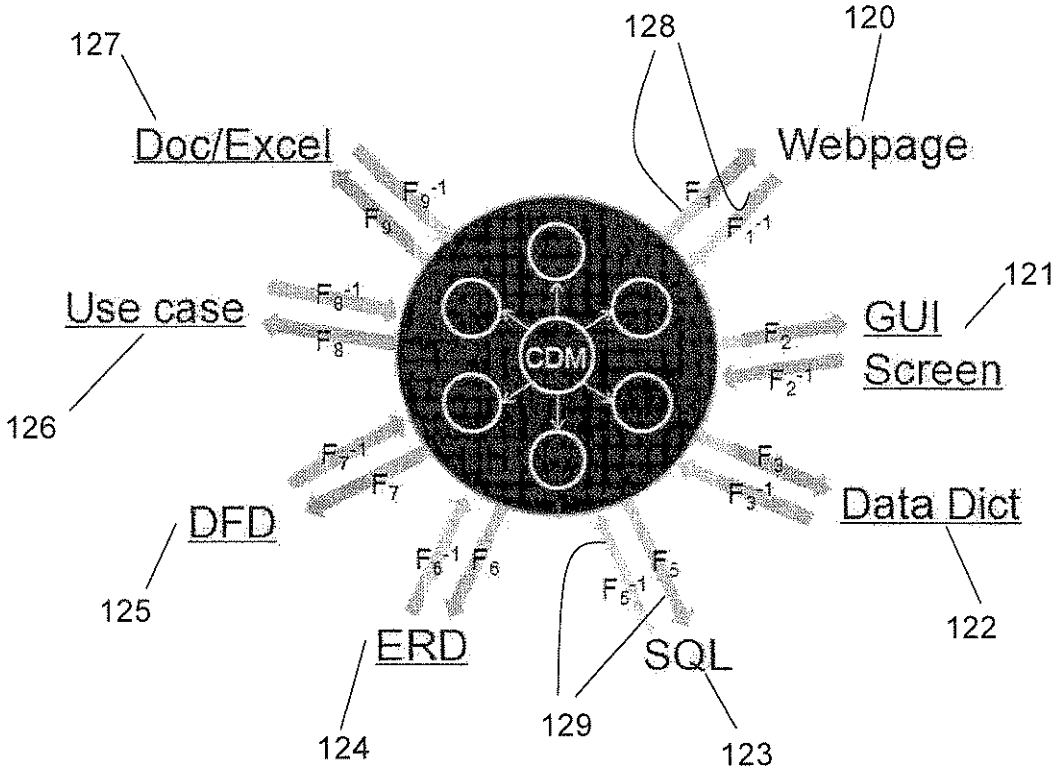

127
Doc/Excel
128
120
Webpage
F_9^{-1}
F_9
F_1
F_1^{-1}
121
Use case
F_6^{-1}
F_8
GUI
Screen
F_2
F_2^{-1}
CDM
126
F_7^{-1}
F_7
F_3
F_3^{-1}
Data Dict
DFD
F_6^{-1}
F_6
F_5
F_5^{-1}
125
122
ERD
SQL
129
124
123

Figure 12

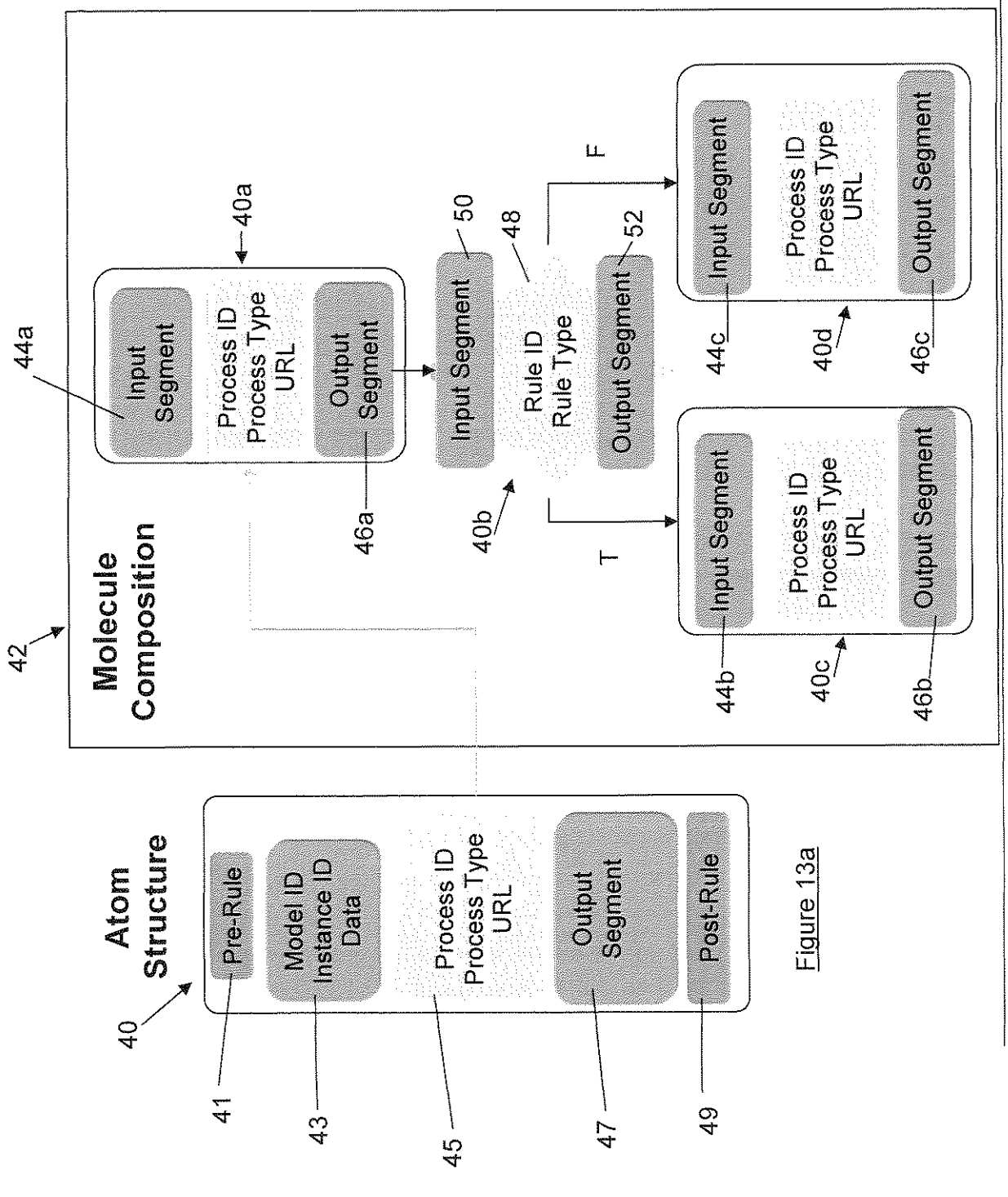


Figure 13a

Figure 13b

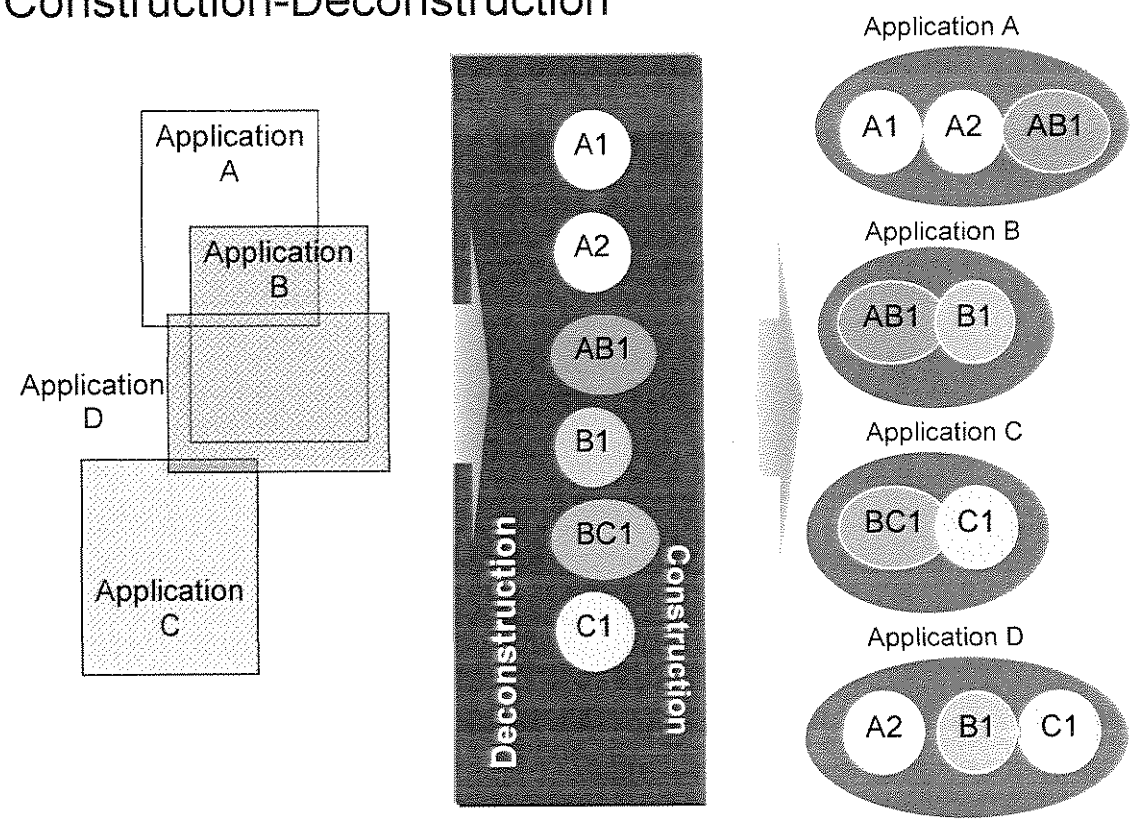

Construction-Deconstruction
Application A
Application B
Application D
Application C
A1
A2
AB1
B1
BC1
C1
Deconstruction
Construction
Application A
A1 A2 AB1
Application B
AB1 B1
Application C
BC1 C1
Application D
A2 B1 C1

Figure 14

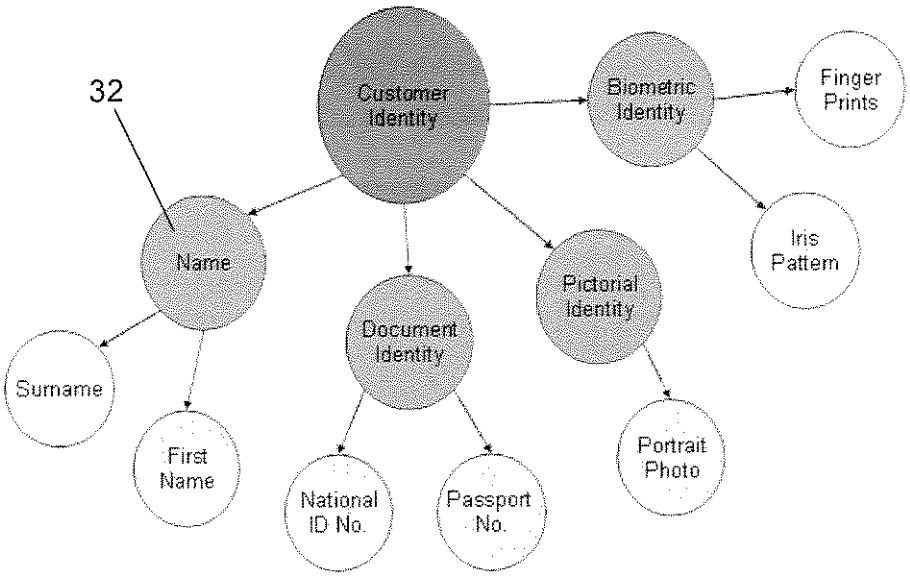


Figure 15

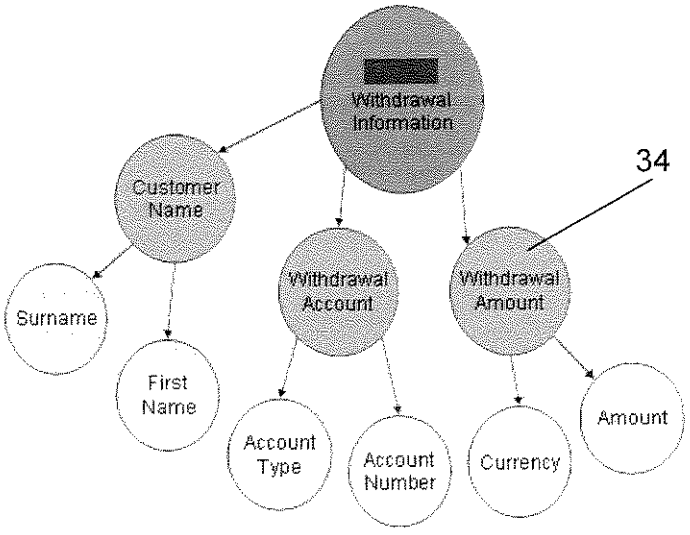


Figure 16

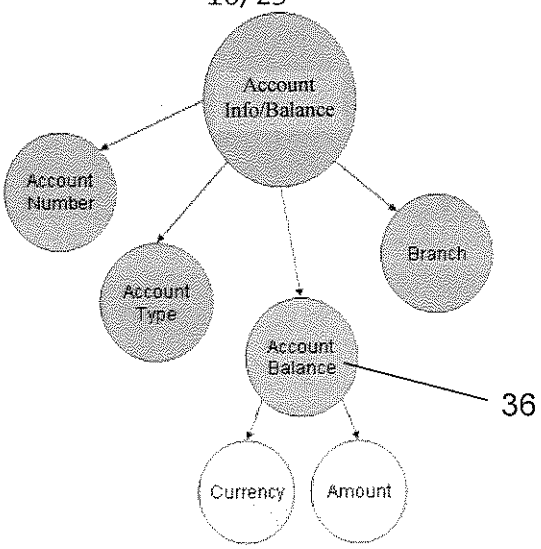


Figure 17

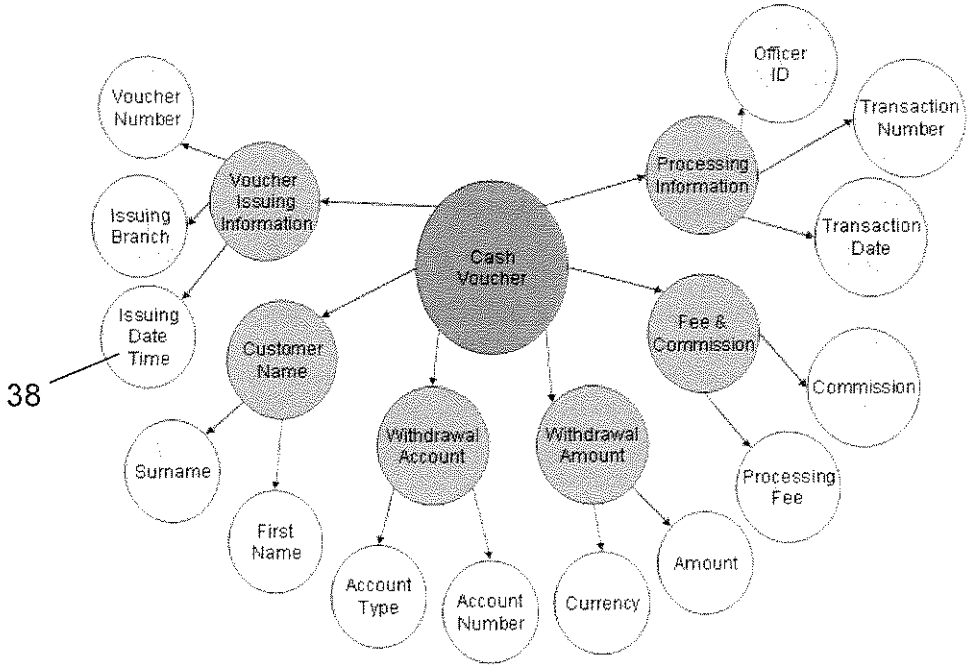


Figure 18

Process commands	Choice Objects			
	A	B	C	D
P1	ATM1	ATM2	ATM5	ATM5
P2	ATM6	ATM4	ATM10	ATM16
P3	ATM3	ATM19	ATM10	ATM7
P4	ATM18	ATM20	ATM17	ATM23

Figure 19

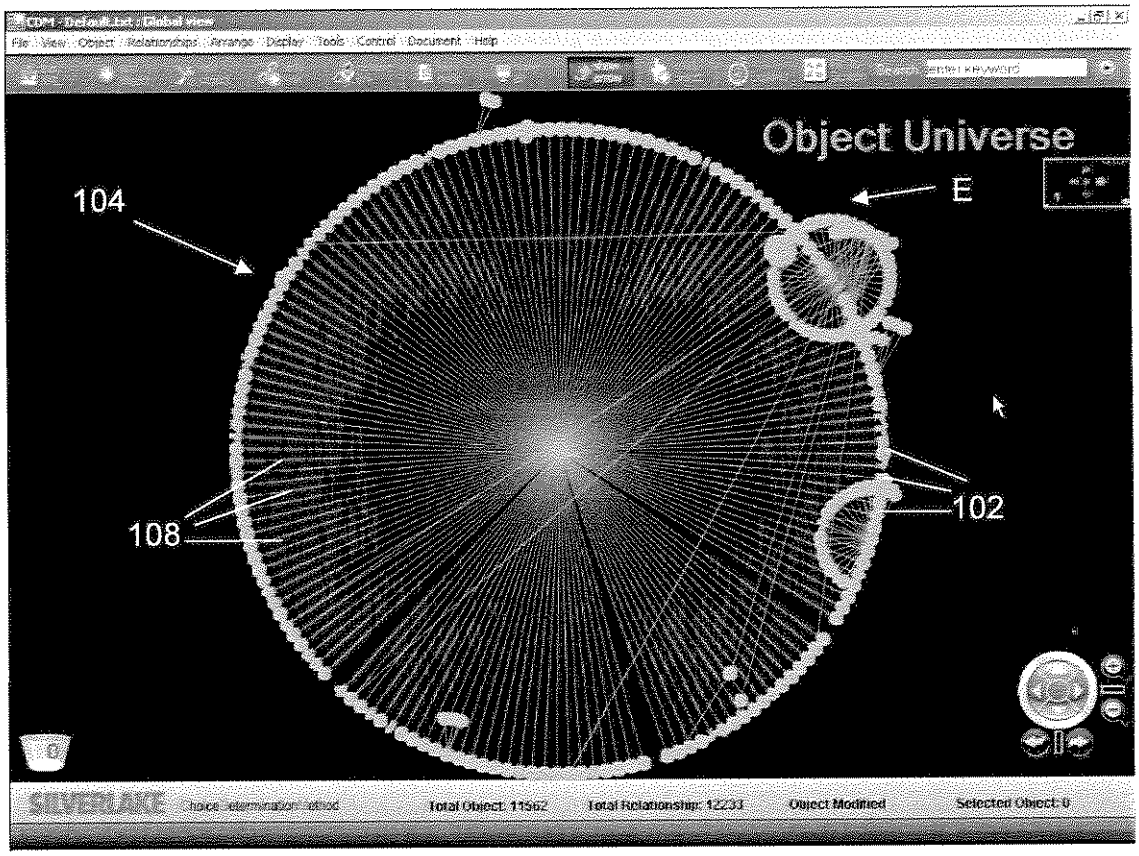


Figure 20

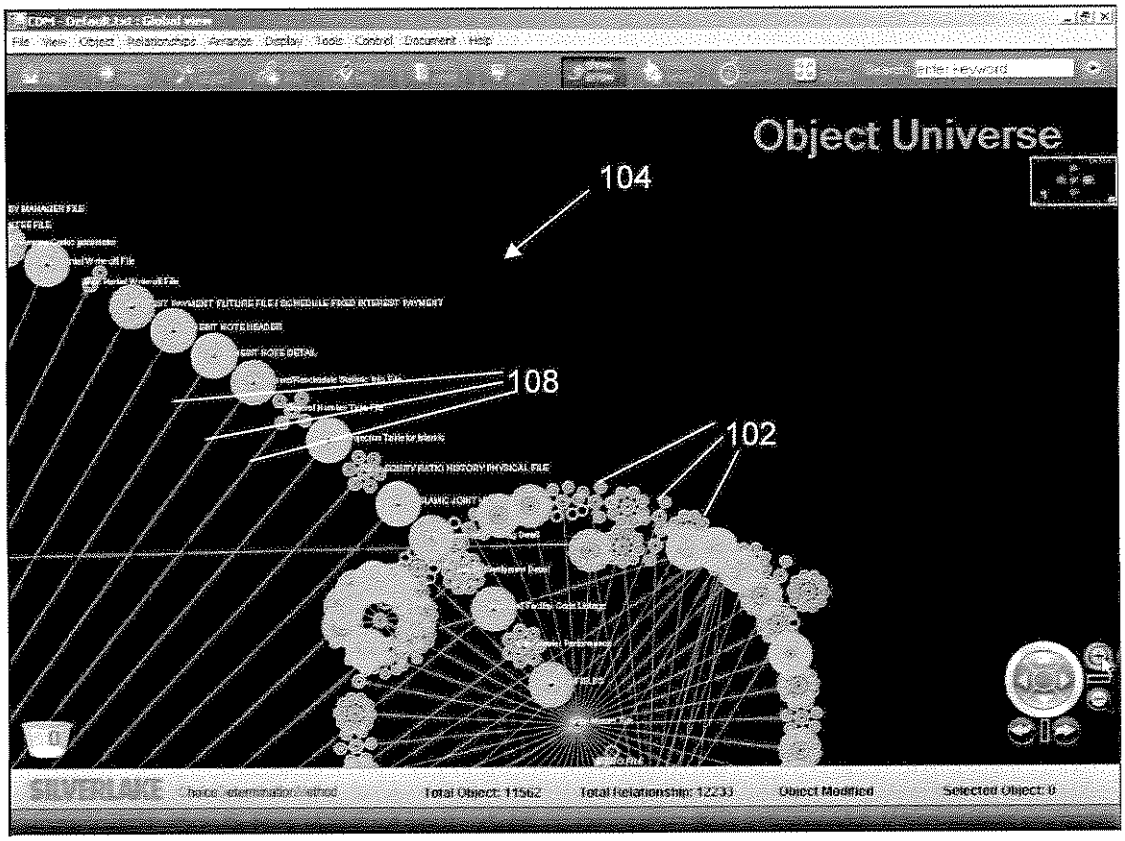

Object Universe
104
108
102
Total Object: 11562
Total Relationship: 12233
Object Modified
Selected Object: 0

Figure 21

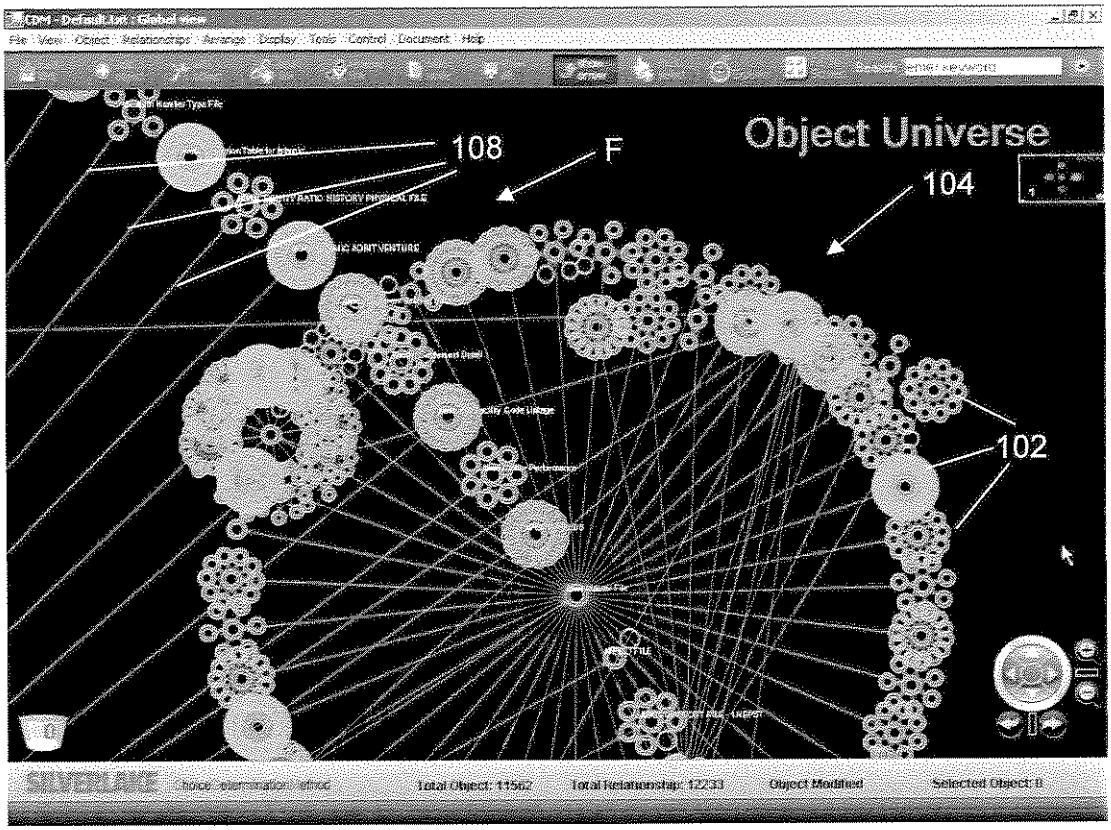


Figure 22

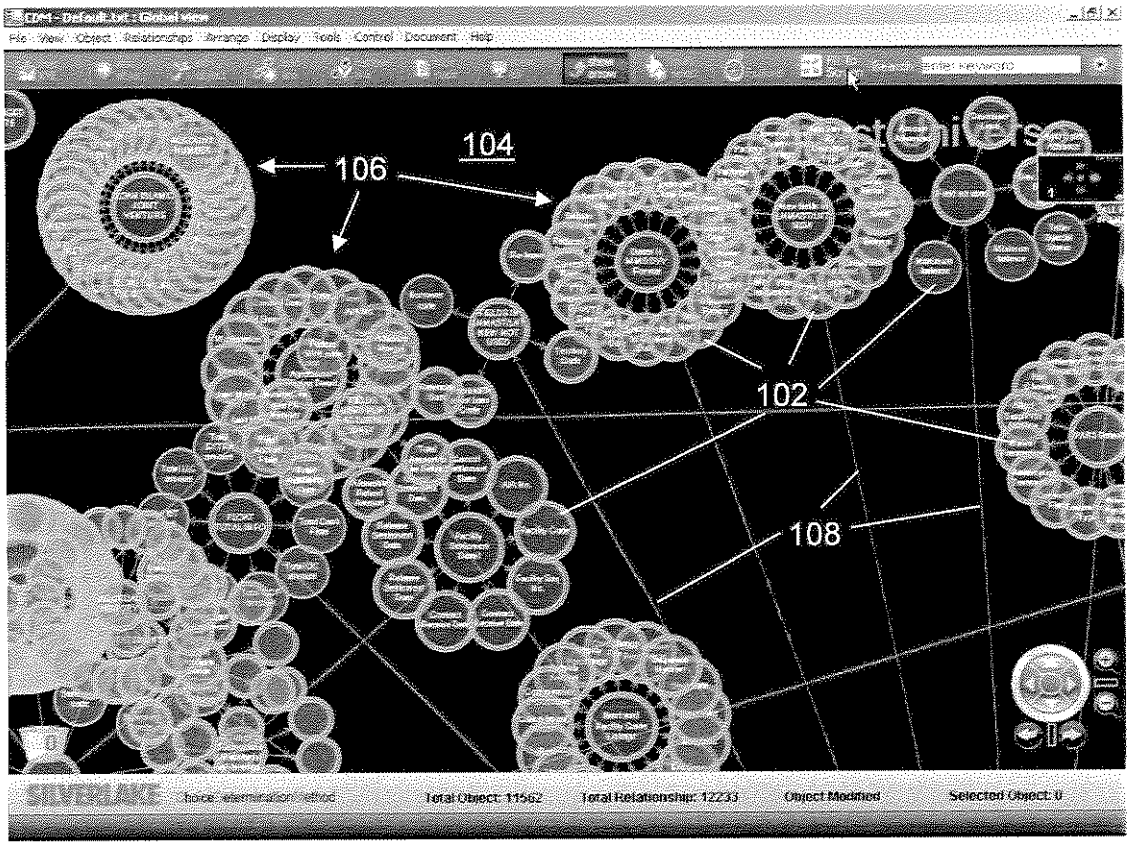

104
106
102
108
Total Object: 11562
Total Relationship: 12233
Object Modified
Selected Object: 0

Figure 23

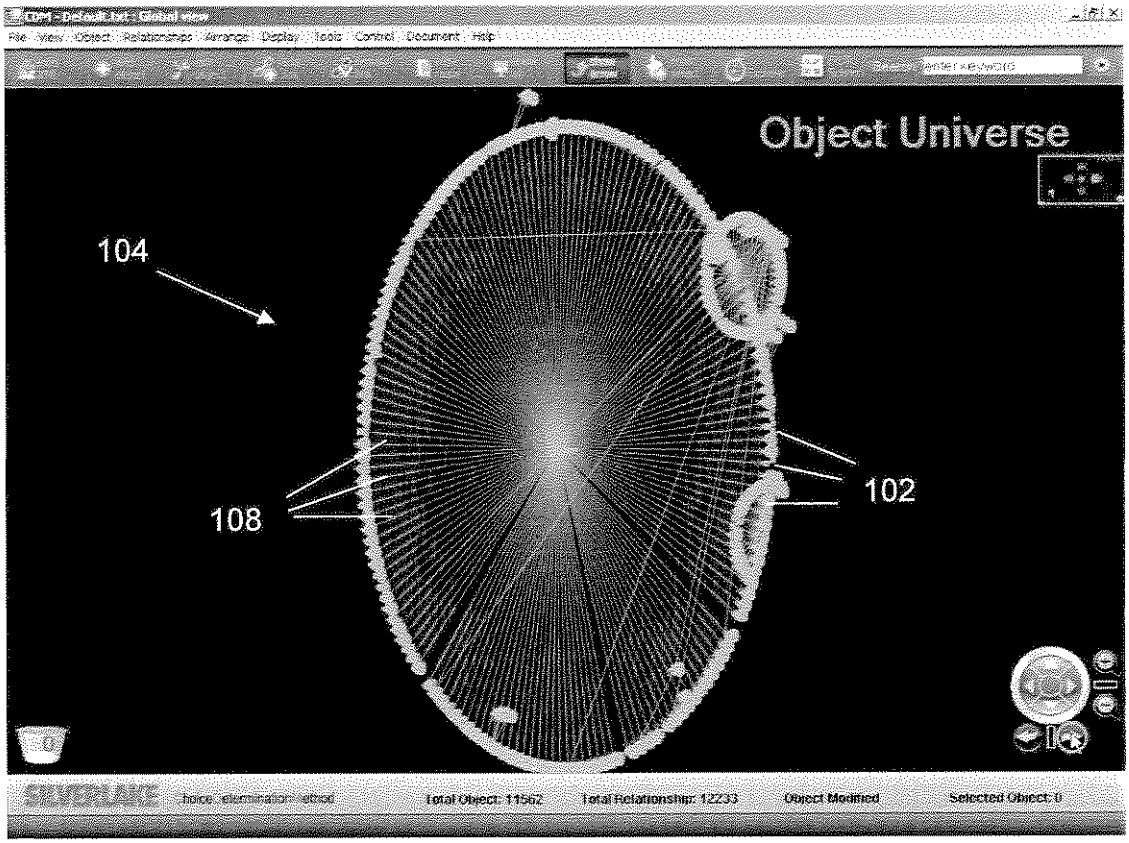

Object Universe
104
102
108
Total Object: 11562
Total Relationship: 12233
Object Modified
Selected Object: 0

Figure 24

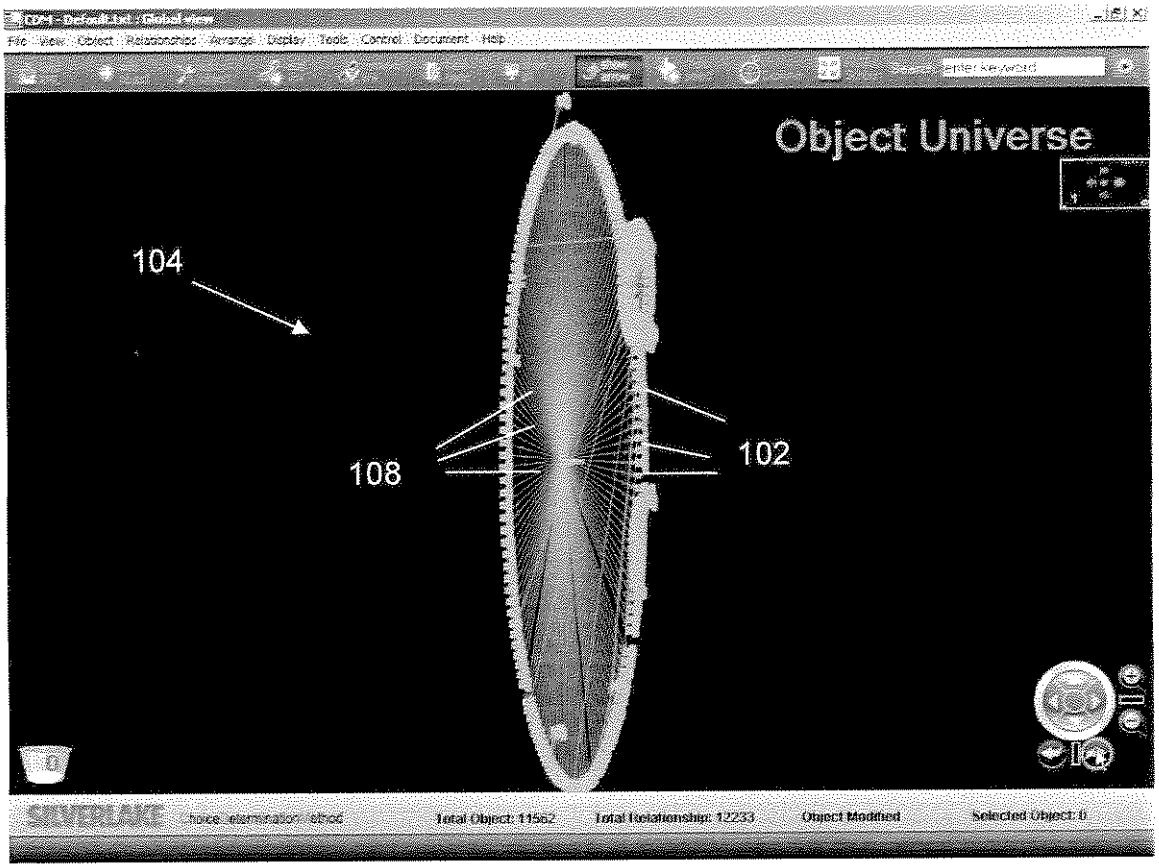

Object Universe
104
108
102
Total Object: 11562
Total Relationship: 12233
Object Modified
Selected Object: 0

Figure 25

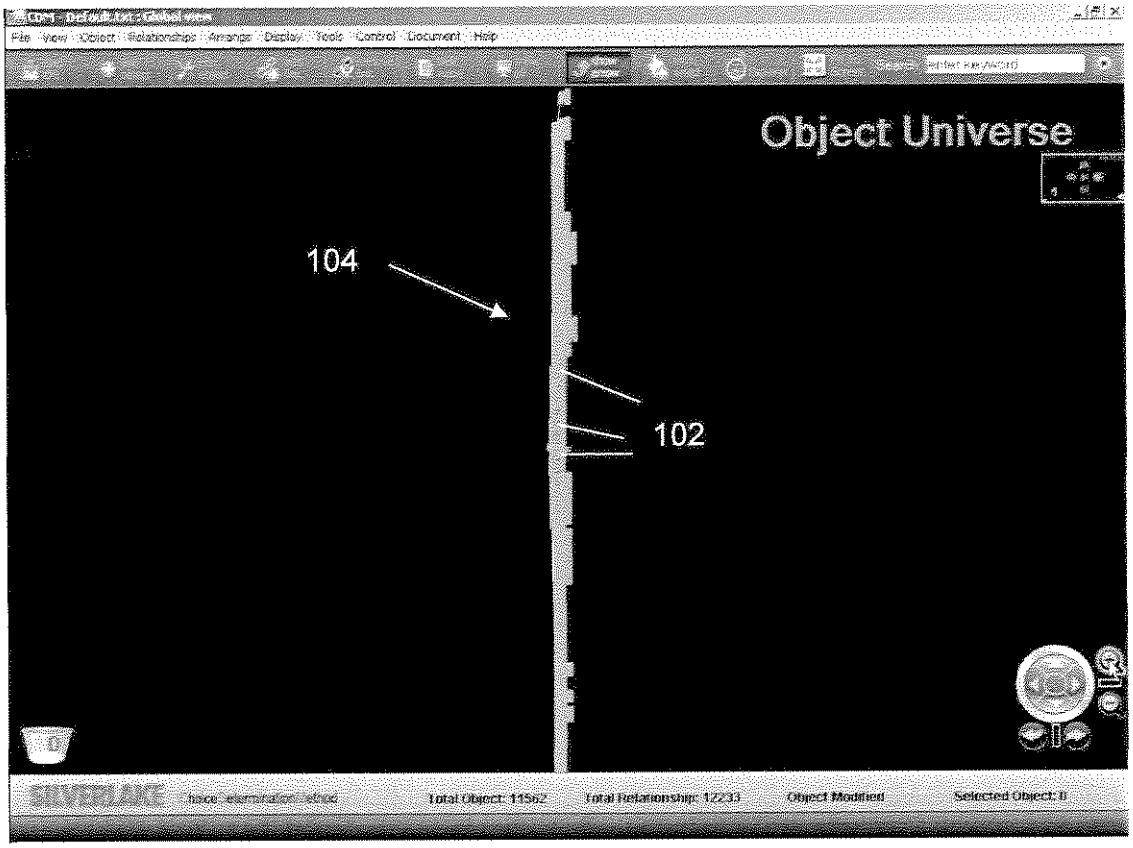


Figure 26

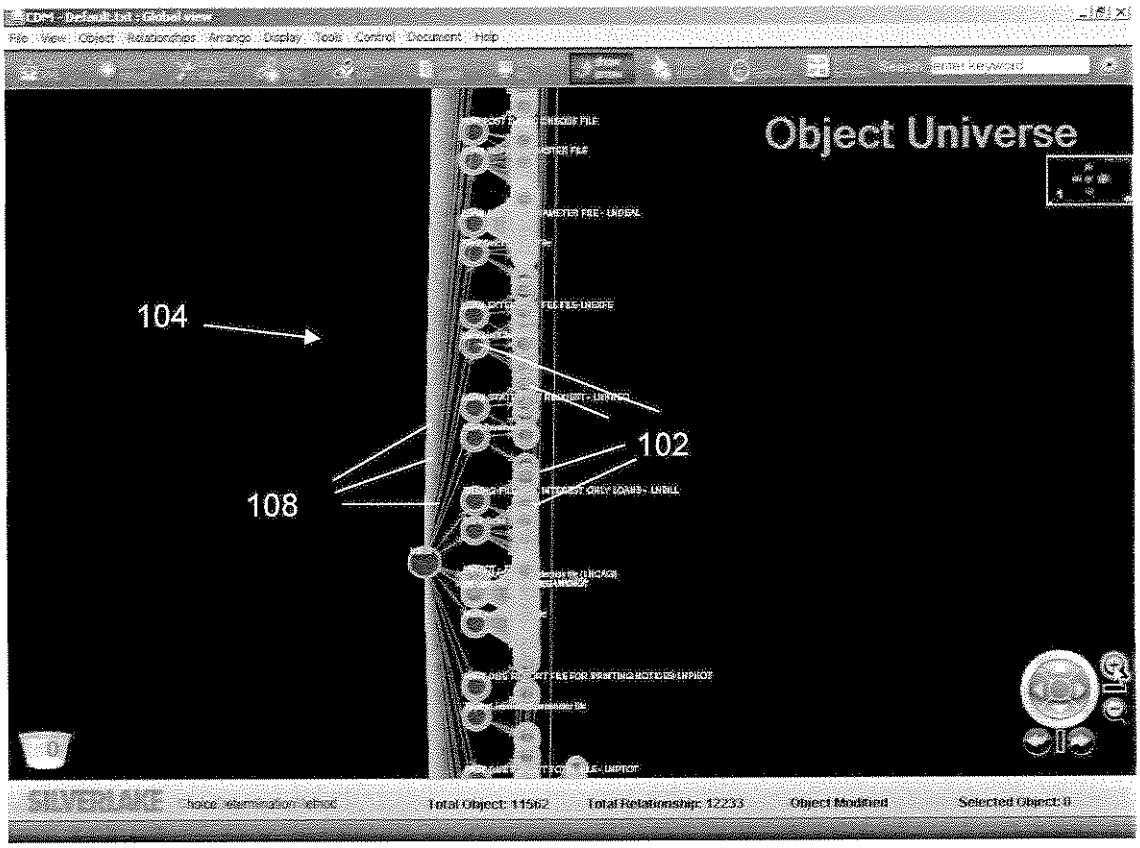

Object Universe
104
102
108
Total Object: 11562
Total Relationship: 12233
Object Modified
Selected Object: 0

Figure 27

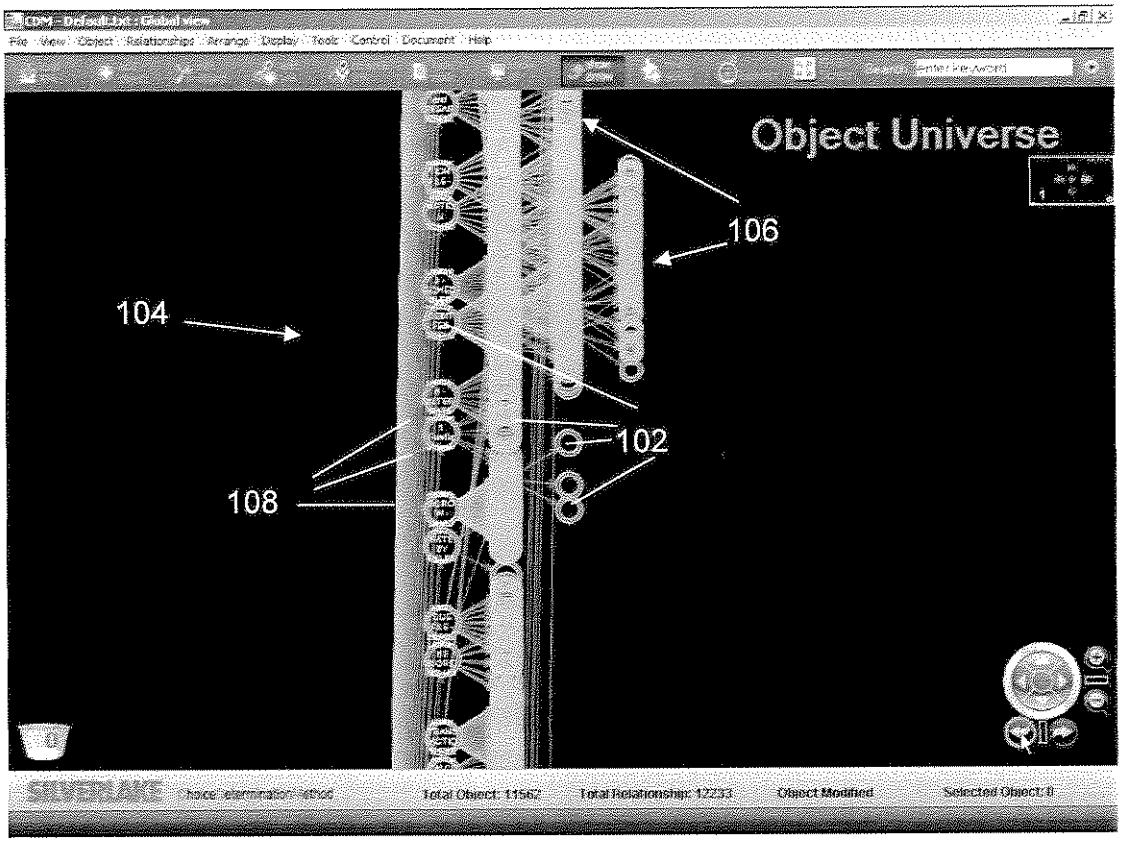


Figure 28