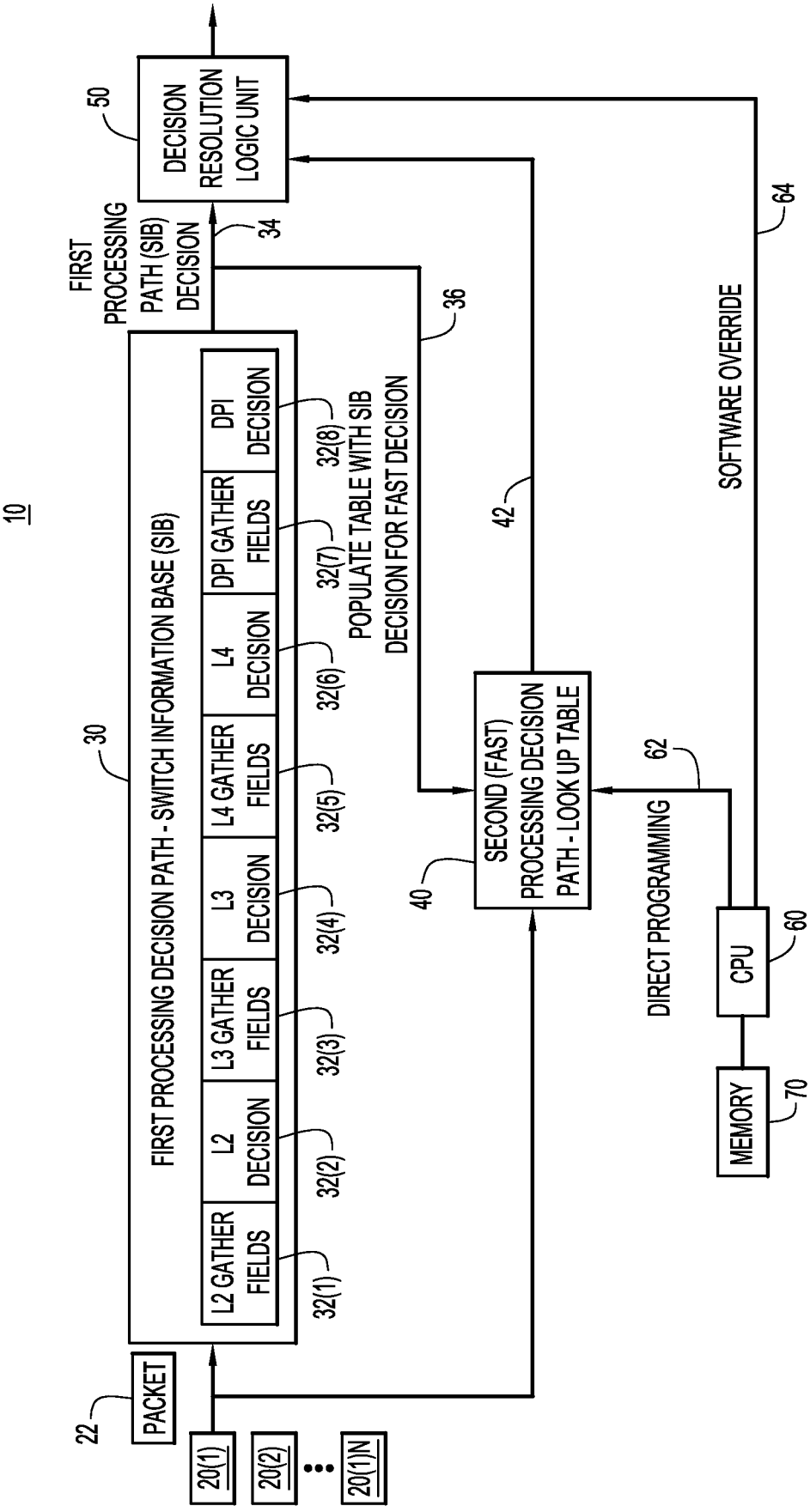

10
20(1)
20(2)
20(1)N
22
PACKET
30
FIRST PROCESSING DECISION PATH - SWITCH INFORMATION BASE (SIB)
L2 GATHER FIELDS
L2 DECISION
L3 GATHER FIELDS
L3 DECISION
L4 GATHER FIELDS
L4 DECISION
DPI GATHER FIELDS
DPI DECISION
32(1)
32(2)
32(3)
32(4)
32(5)
32(6)
32(7)
32(8)
FIRST PROCESSING PATH (SIB) DECISION
34
36
POPULATE TABLE WITH SIB DECISION FOR FAST DECISION
40
SECOND (FAST) PROCESSING DECISION PATH - LOOK UP TABLE
42
50
DECISION RESOLUTION LOGIC UNIT
62
DIRECT PROGRAMMING
60
CPU
70
MEMORY
64
SOFTWARE OVERRIDE

FIG.1

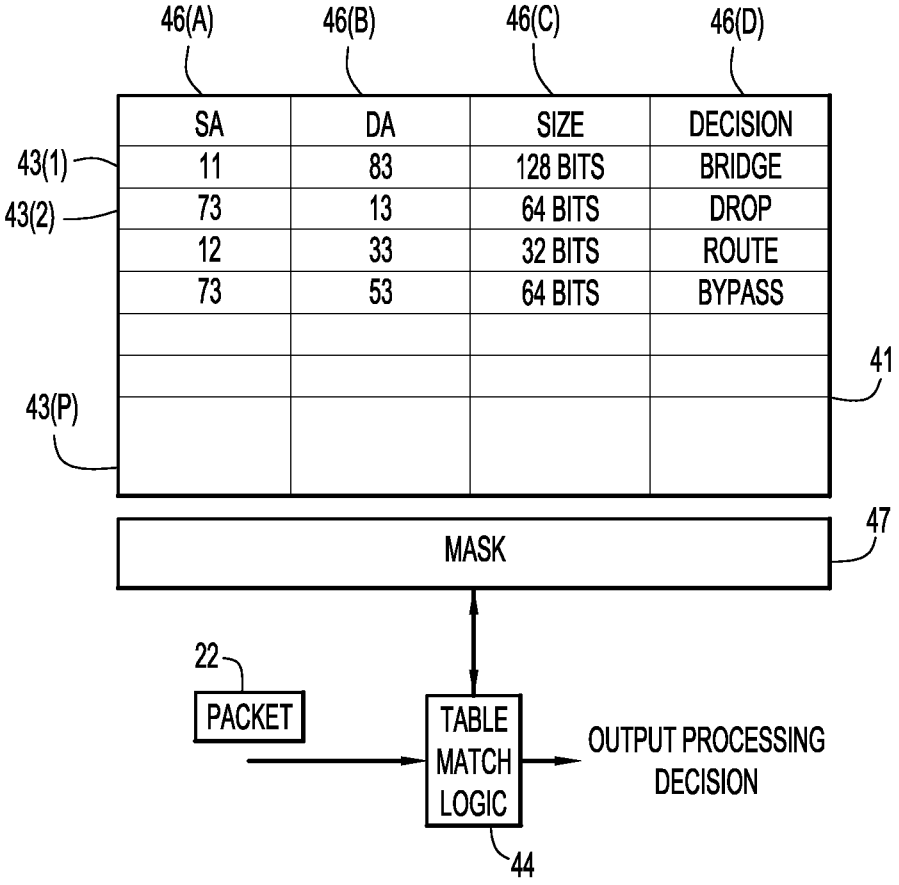

46(A)
46(B)
46(C)
46(D)
SA
DA
SIZE
DECISION
43(1)
11
83
128 BITS
BRIDGE
43(2)
73
13
64 BITS
DROP
12
33
32 BITS
ROUTE
73
53
64 BITS
BYPASS
41
43(P)
47
MASK
22
PACKET
TABLE MATCH LOGIC
OUTPUT PROCESSING DECISION
44

FIG.2

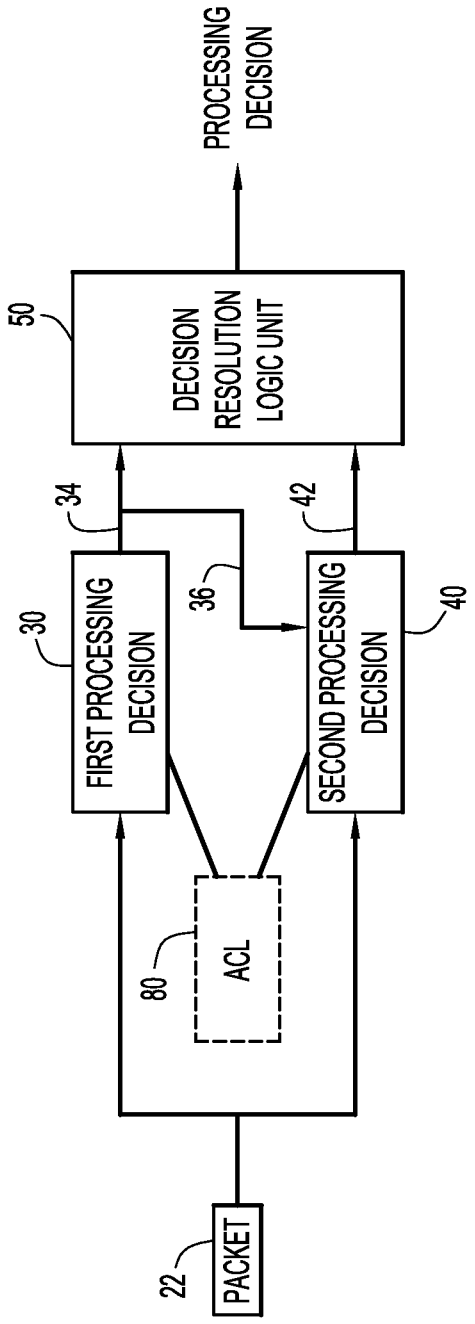

PROCESSING DECISION
50
DECISION RESOLUTION LOGIC UNIT
34
42
36
30
FIRST PROCESSING DECISION
SECOND PROCESSING DECISION
40
80
ACL
22
PACKET

FIG.3

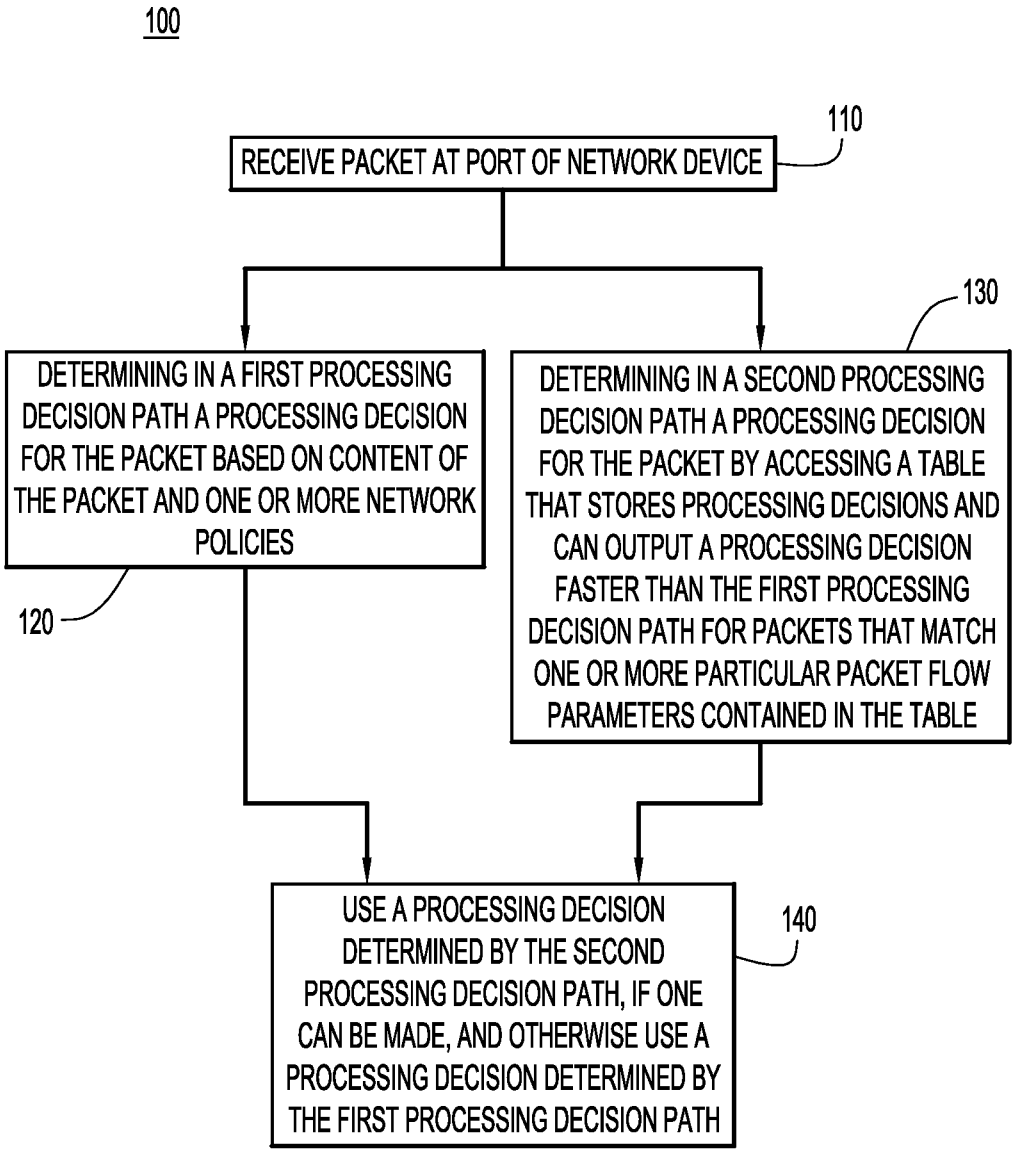

100
RECEIVE PACKET AT PORT OF NETWORK DEVICE
110
DETERMINING IN A FIRST PROCESSING DECISION PATH A PROCESSING DECISION FOR THE PACKET BASED ON CONTENT OF THE PACKET AND ONE OR MORE NETWORK POLICIES
120
DETERMINING IN A SECOND PROCESSING DECISION PATH A PROCESSING DECISION FOR THE PACKET BY ACCESSING A TABLE THAT STORES PROCESSING DECISIONS AND CAN OUTPUT A PROCESSING DECISION FASTER THAN THE FIRST PROCESSING DECISION PATH FOR PACKETS THAT MATCH ONE OR MORE PARTICULAR PACKET FLOW PARAMETERS CONTAINED IN THE TABLE
130
USE A PROCESSING DECISION DETERMINED BY THE SECOND PROCESSING DECISION PATH, IF ONE CAN BE MADE, AND OTHERWISE USE A PROCESSING DECISION DETERMINED BY THE FIRST PROCESSING DECISION PATH
140

FIG.4