FIG. 1

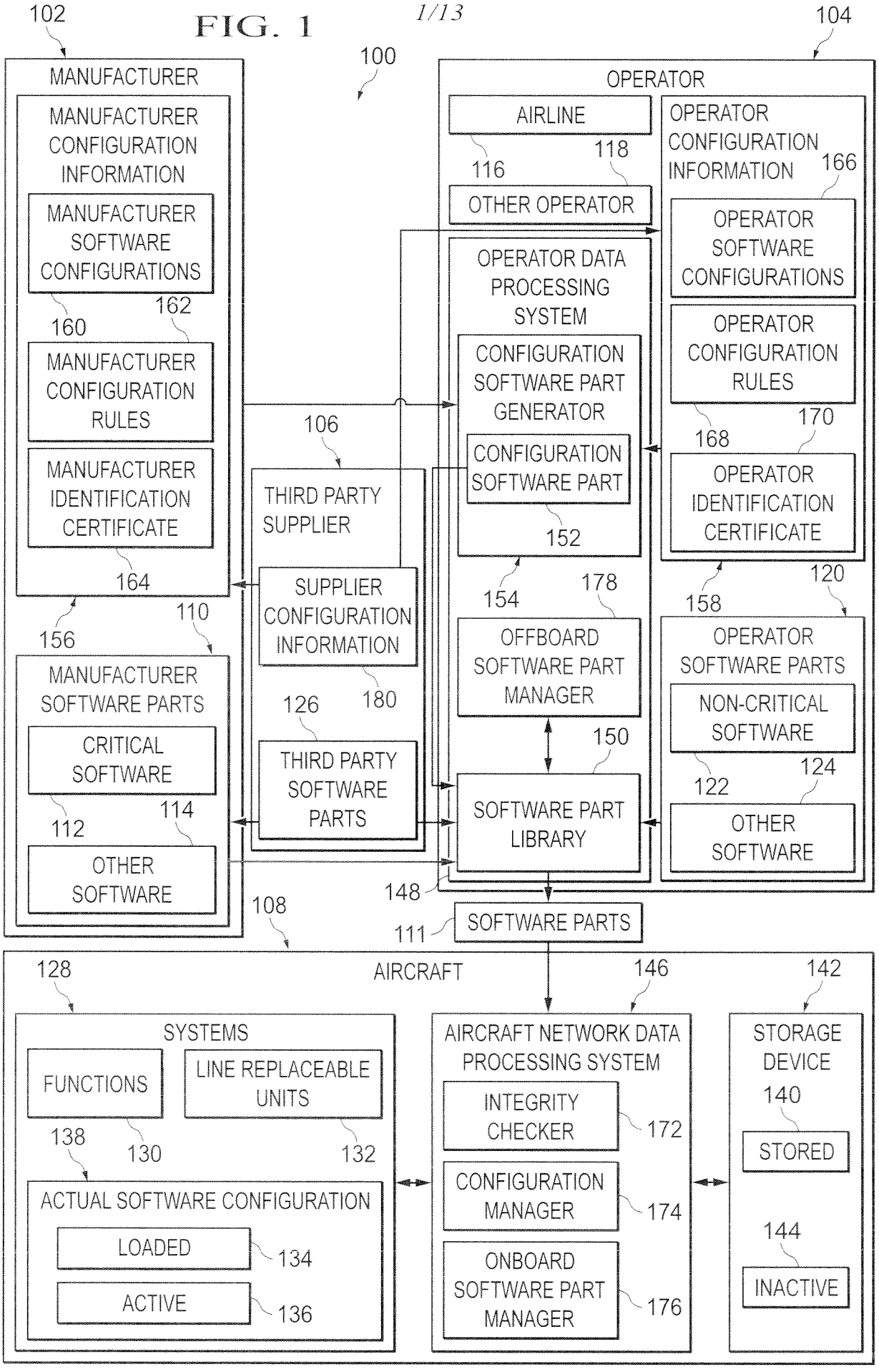
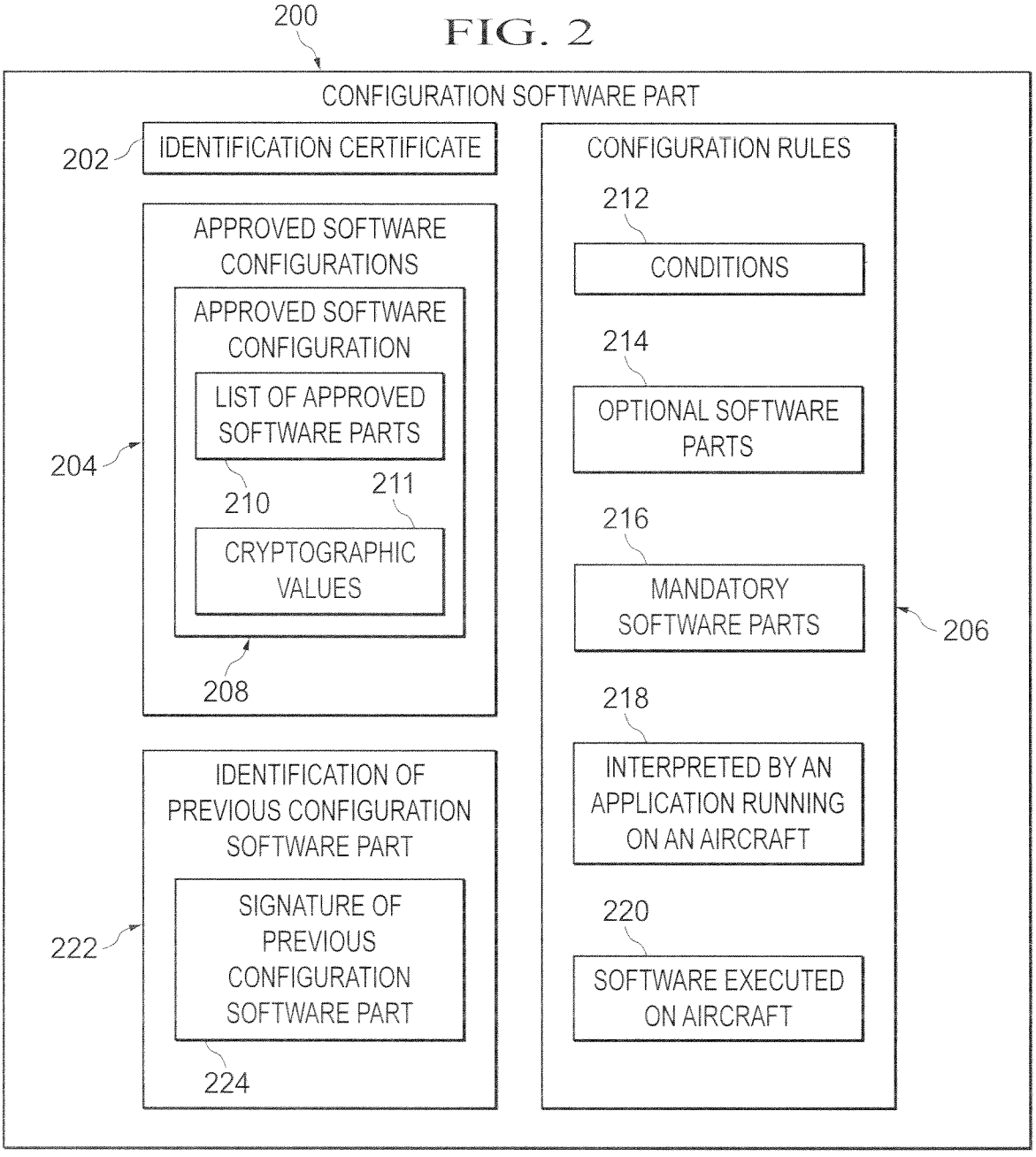

102
MANUFACTURER
MANUFACTURER CONFIGURATION INFORMATION
MANUFACTURER SOFTWARE CONFIGURATIONS
160
162
MANUFACTURER CONFIGURATION RULES
MANUFACTURER IDENTIFICATION CERTIFICATE
164
156
110
MANUFACTURER SOFTWARE PARTS
CRITICAL SOFTWARE
112
114
OTHER SOFTWARE
100
106
THIRD PARTY SUPPLIER
SUPPLIER CONFIGURATION INFORMATION
180
126
THIRD PARTY SOFTWARE PARTS
104
OPERATOR
AIRLINE
116
118
OTHER OPERATOR
OPERATOR DATA PROCESSING SYSTEM
CONFIGURATION SOFTWARE PART GENERATOR
CONFIGURATION SOFTWARE PART
152
154
178
OFFBOARD SOFTWARE PART MANAGER
150
SOFTWARE PART LIBRARY
148
111
SOFTWARE PARTS
OPERATOR CONFIGURATION INFORMATION
166
OPERATOR SOFTWARE CONFIGURATIONS
OPERATOR CONFIGURATION RULES
168
170
OPERATOR IDENTIFICATION CERTIFICATE
158
120
OPERATOR SOFTWARE PARTS
NON-CRITICAL SOFTWARE
122
124
OTHER SOFTWARE
108
128
AIRCRAFT
146
142
SYSTEMS
FUNCTIONS
LINE REPLACEABLE UNITS
138
130
132
ACTUAL SOFTWARE CONFIGURATION
LOADED
134
ACTIVE
136
AIRCRAFT NETWORK DATA PROCESSING SYSTEM
INTEGRITY CHECKER
172
CONFIGURATION MANAGER
174
ONBOARD SOFTWARE PART MANAGER
176
STORAGE DEVICE
140
STORED
144
INACTIVE

FIG. 2


200
CONFIGURATION SOFTWARE PART
202
IDENTIFICATION CERTIFICATE
APPROVED SOFTWARE CONFIGURATIONS
APPROVED SOFTWARE CONFIGURATION
LIST OF APPROVED SOFTWARE PARTS
210
211
CRYPTOGRAPHIC VALUES
204
208
IDENTIFICATION OF PREVIOUS CONFIGURATION SOFTWARE PART
SIGNATURE OF PREVIOUS CONFIGURATION SOFTWARE PART
222
224
CONFIGURATION RULES
212
CONDITIONS
214
OPTIONAL SOFTWARE PARTS
216
MANDATORY SOFTWARE PARTS
206
218
INTERPRETED BY AN APPLICATION RUNNING ON AN AIRCRAFT
220
SOFTWARE EXECUTED ON AIRCRAFT

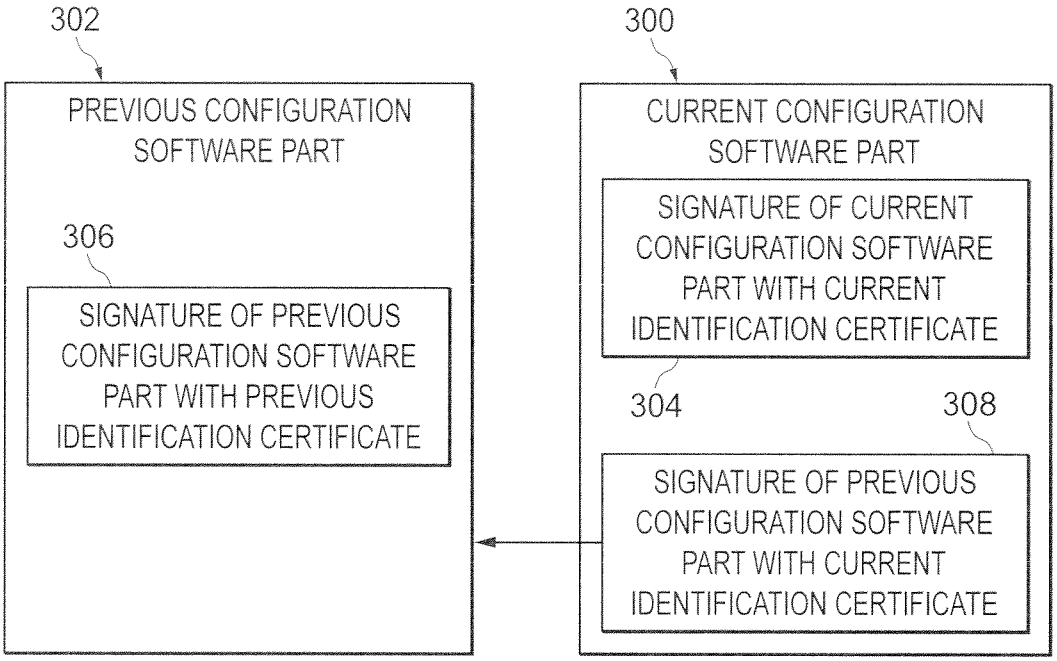

302
PREVIOUS CONFIGURATION SOFTWARE PART
306
SIGNATURE OF PREVIOUS CONFIGURATION SOFTWARE PART WITH PREVIOUS IDENTIFICATION CERTIFICATE
300
CURRENT CONFIGURATION SOFTWARE PART
SIGNATURE OF CURRENT CONFIGURATION SOFTWARE PART WITH CURRENT IDENTIFICATION CERTIFICATE
304
308
SIGNATURE OF PREVIOUS CONFIGURATION SOFTWARE PART WITH CURRENT IDENTIFICATION CERTIFICATE

FIG. 3

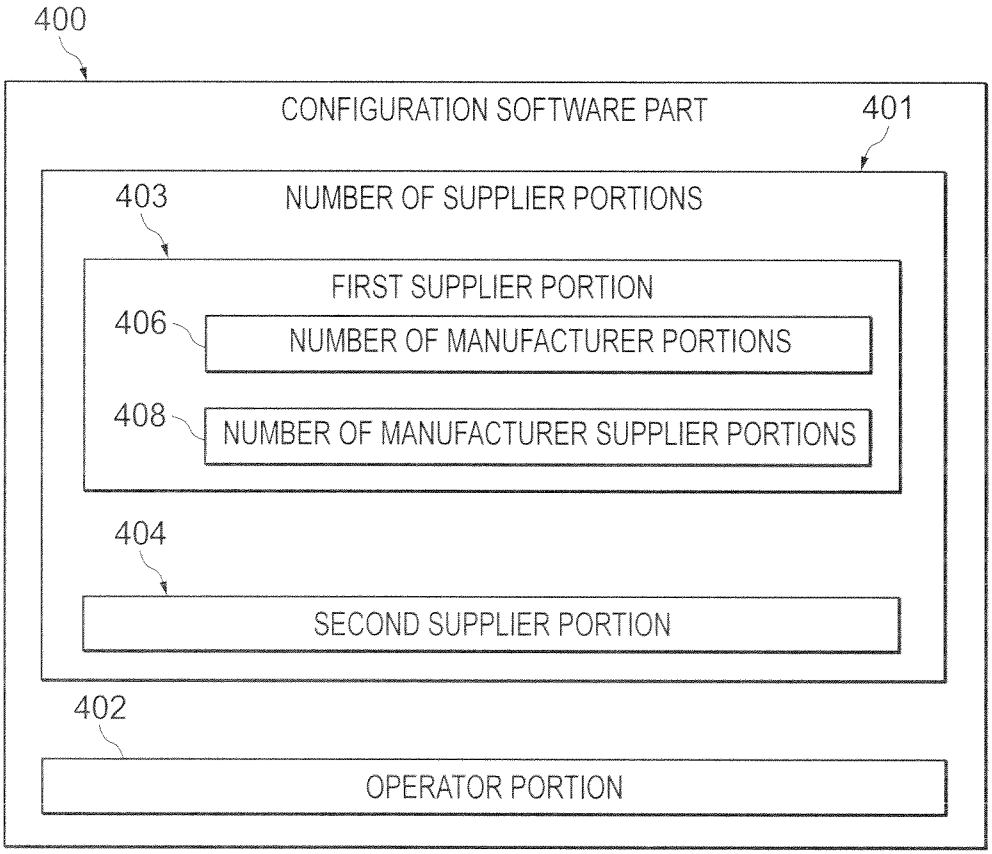

400
CONFIGURATION SOFTWARE PART
401
403
NUMBER OF SUPPLIER PORTIONS
FIRST SUPPLIER PORTION
406
NUMBER OF MANUFACTURER PORTIONS
408
NUMBER OF MANUFACTURER SUPPLIER PORTIONS
404
SECOND SUPPLIER PORTION
402
OPERATOR PORTION

FIG. 4

FIG. 5

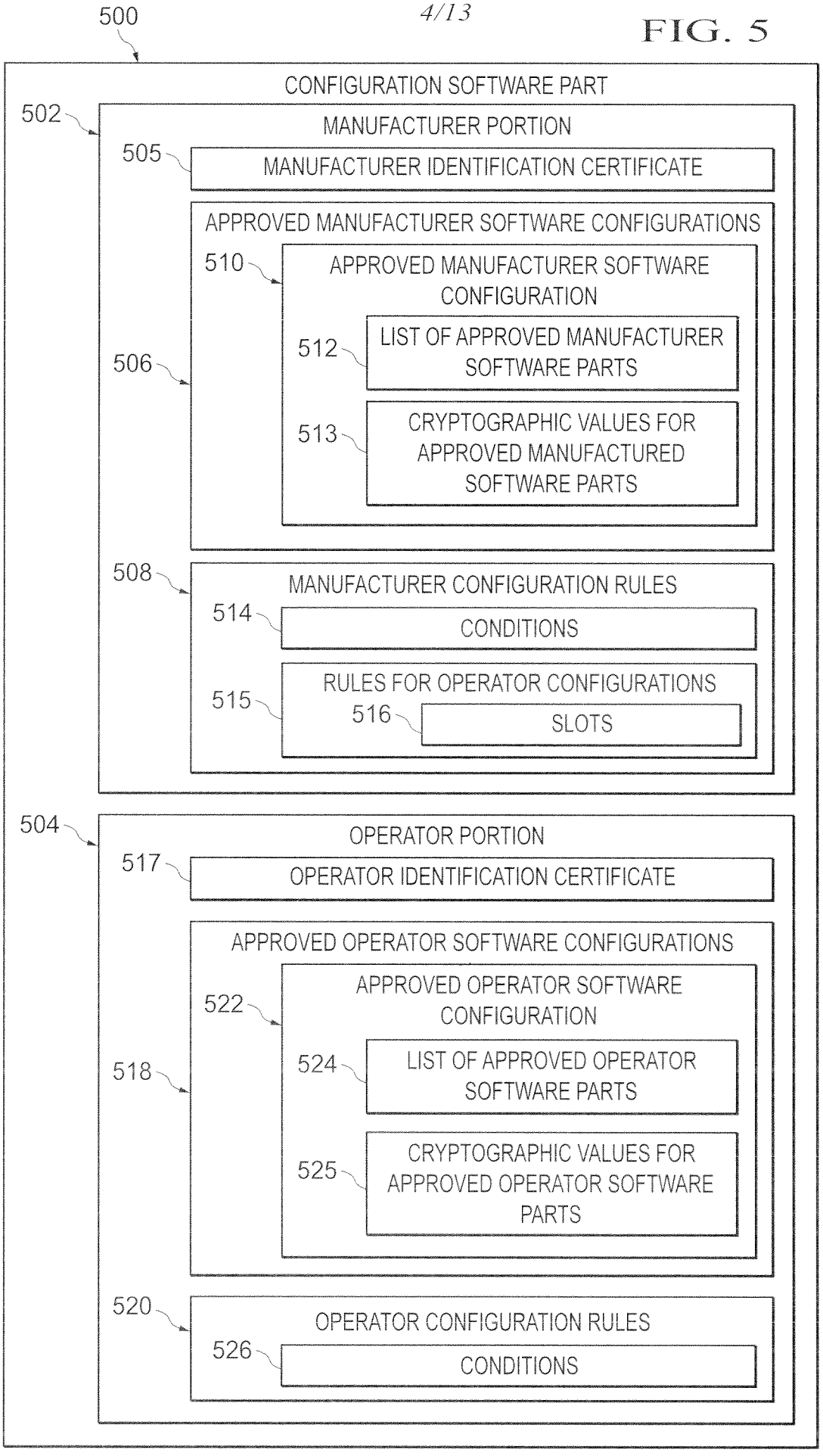
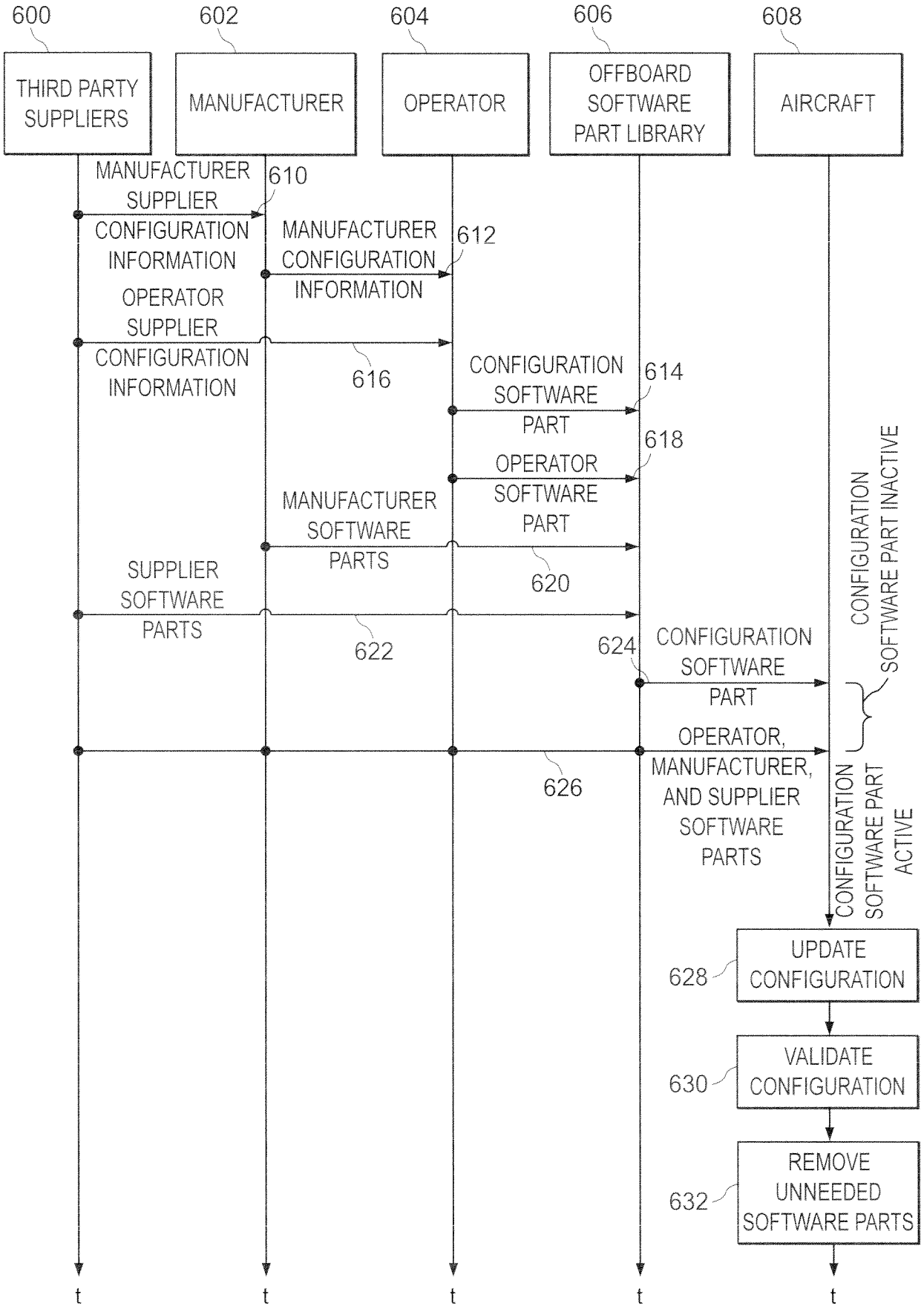

500
CONFIGURATION SOFTWARE PART
502
MANUFACTURER PORTION
505
MANUFACTURER IDENTIFICATION CERTIFICATE
APPROVED MANUFACTURER SOFTWARE CONFIGURATIONS
510
APPROVED MANUFACTURER SOFTWARE CONFIGURATION
512
LIST OF APPROVED MANUFACTURER SOFTWARE PARTS
506
513
CRYPTOGRAPHIC VALUES FOR APPROVED MANUFACTURED SOFTWARE PARTS
508
MANUFACTURER CONFIGURATION RULES
514
CONDITIONS
515
RULES FOR OPERATOR CONFIGURATIONS
516
SLOTS
504
OPERATOR PORTION
517
OPERATOR IDENTIFICATION CERTIFICATE
APPROVED OPERATOR SOFTWARE CONFIGURATIONS
522
APPROVED OPERATOR SOFTWARE CONFIGURATION
524
LIST OF APPROVED OPERATOR SOFTWARE PARTS
518
525
CRYPTOGRAPHIC VALUES FOR APPROVED OPERATOR SOFTWARE PARTS
520
OPERATOR CONFIGURATION RULES
526
CONDITIONS

FIG. 6


600
602
604
606
608
THIRD PARTY SUPPLIERS
MANUFACTURER
OPERATOR
OFFBOARD SOFTWARE PART LIBRARY
AIRCRAFT
MANUFACTURER SUPPLIER CONFIGURATION INFORMATION
610
MANUFACTURER CONFIGURATION INFORMATION
612
OPERATOR SUPPLIER CONFIGURATION INFORMATION
616
CONFIGURATION SOFTWARE PART
614
OPERATOR SOFTWARE PART
618
MANUFACTURER SOFTWARE PARTS
620
SUPPLIER SOFTWARE PARTS
622
CONFIGURATION SOFTWARE PART
624
CONFIGURATION SOFTWARE PART INACTIVE
OPERATOR, MANUFACTURER, AND SUPPLIER SOFTWARE PARTS
626
CONFIGURATION SOFTWARE PART ACTIVE
UPDATE CONFIGURATION
628
VALIDATE CONFIGURATION
630
REMOVE UNNEEDED SOFTWARE PARTS
632
t
t
t
t
t

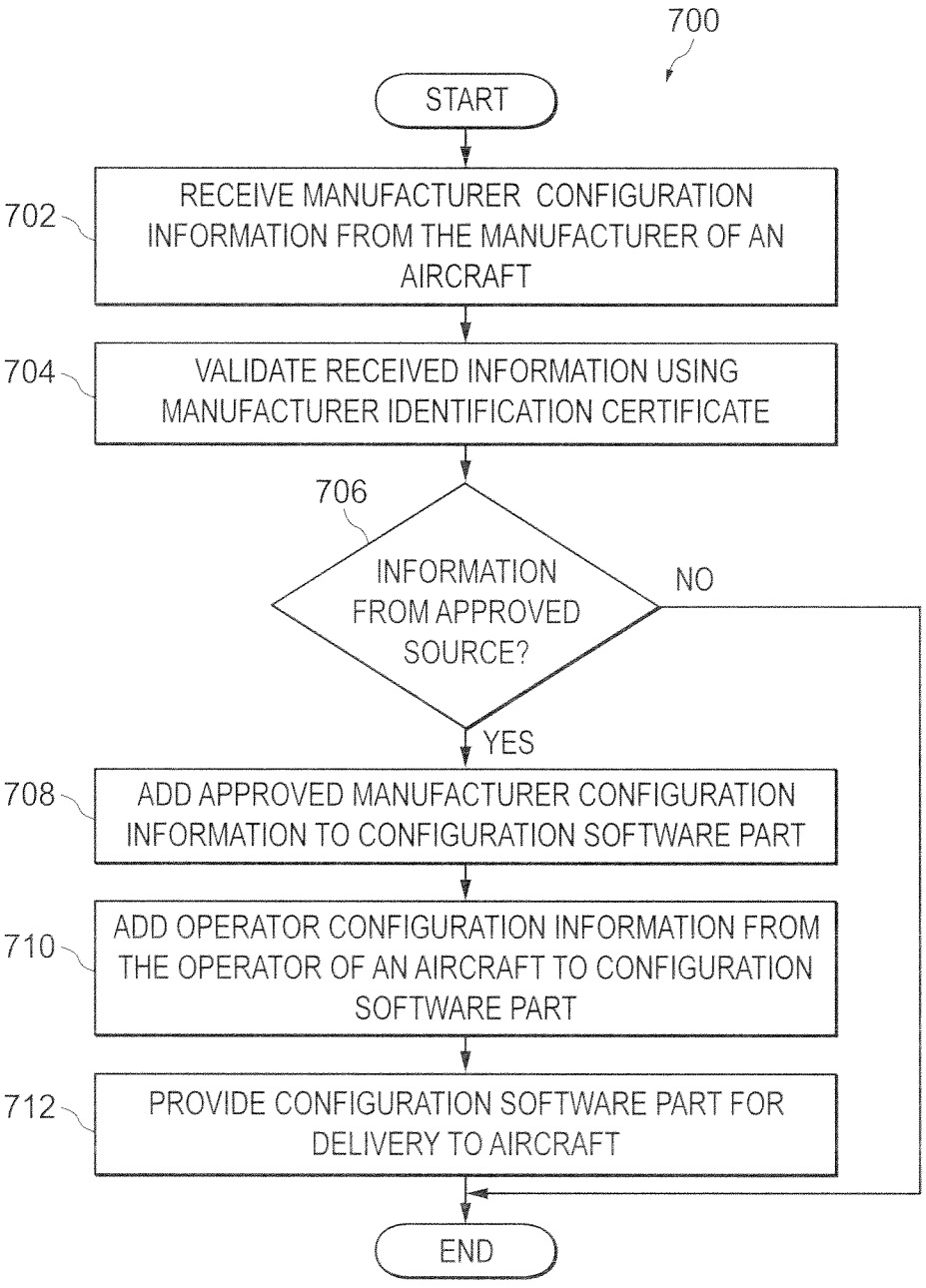

700
START
RECEIVE MANUFACTURER CONFIGURATION INFORMATION FROM THE MANUFACTURER OF AN AIRCRAFT
702
VALIDATE RECEIVED INFORMATION USING MANUFACTURER IDENTIFICATION CERTIFICATE
704
706
INFORMATION FROM APPROVED SOURCE?
NO
YES
ADD APPROVED MANUFACTURER CONFIGURATION INFORMATION TO CONFIGURATION SOFTWARE PART
708
ADD OPERATOR CONFIGURATION INFORMATION FROM THE OPERATOR OF AN AIRCRAFT TO CONFIGURATION SOFTWARE PART
710
PROVIDE CONFIGURATION SOFTWARE PART FOR DELIVERY TO AIRCRAFT
712
END

FIG. 7

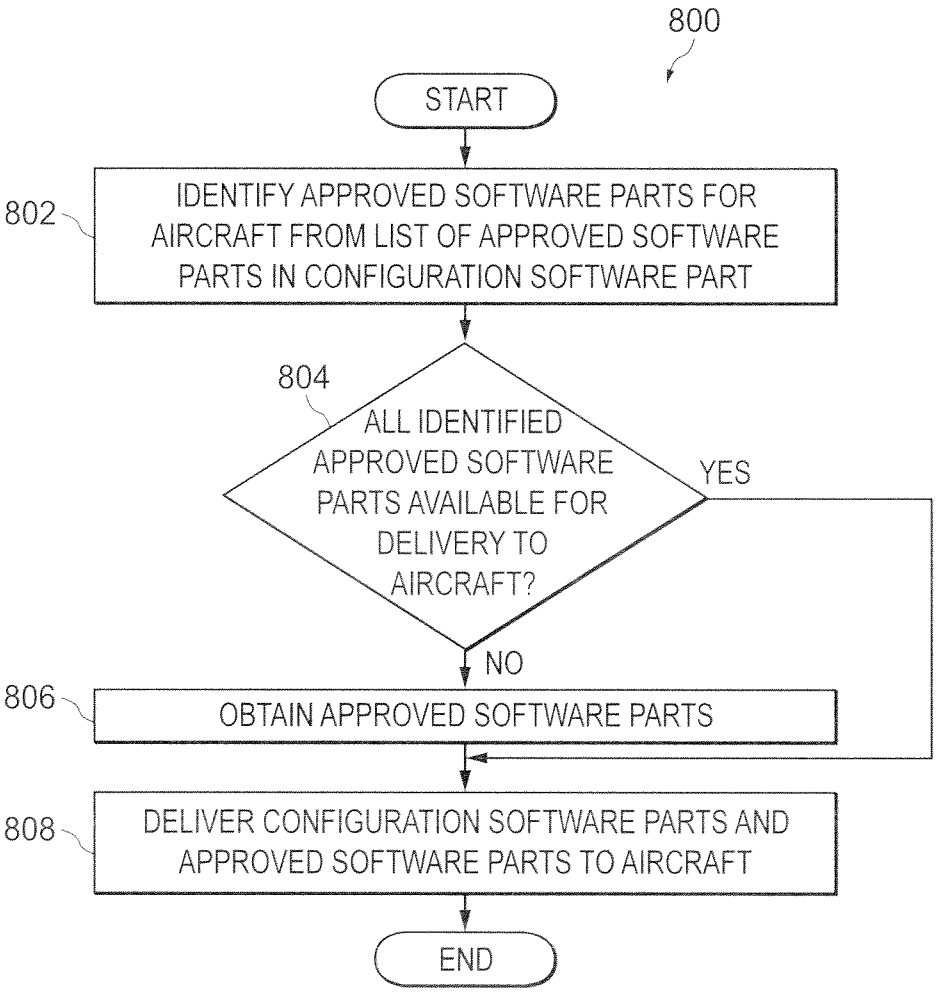

800
START
802
IDENTIFY APPROVED SOFTWARE PARTS FOR AIRCRAFT FROM LIST OF APPROVED SOFTWARE PARTS IN CONFIGURATION SOFTWARE PART
804
ALL IDENTIFIED APPROVED SOFTWARE PARTS AVAILABLE FOR DELIVERY TO AIRCRAFT?
YES
NO
806
OBTAIN APPROVED SOFTWARE PARTS
808
DELIVER CONFIGURATION SOFTWARE PARTS AND APPROVED SOFTWARE PARTS TO AIRCRAFT
END

FIG. 8

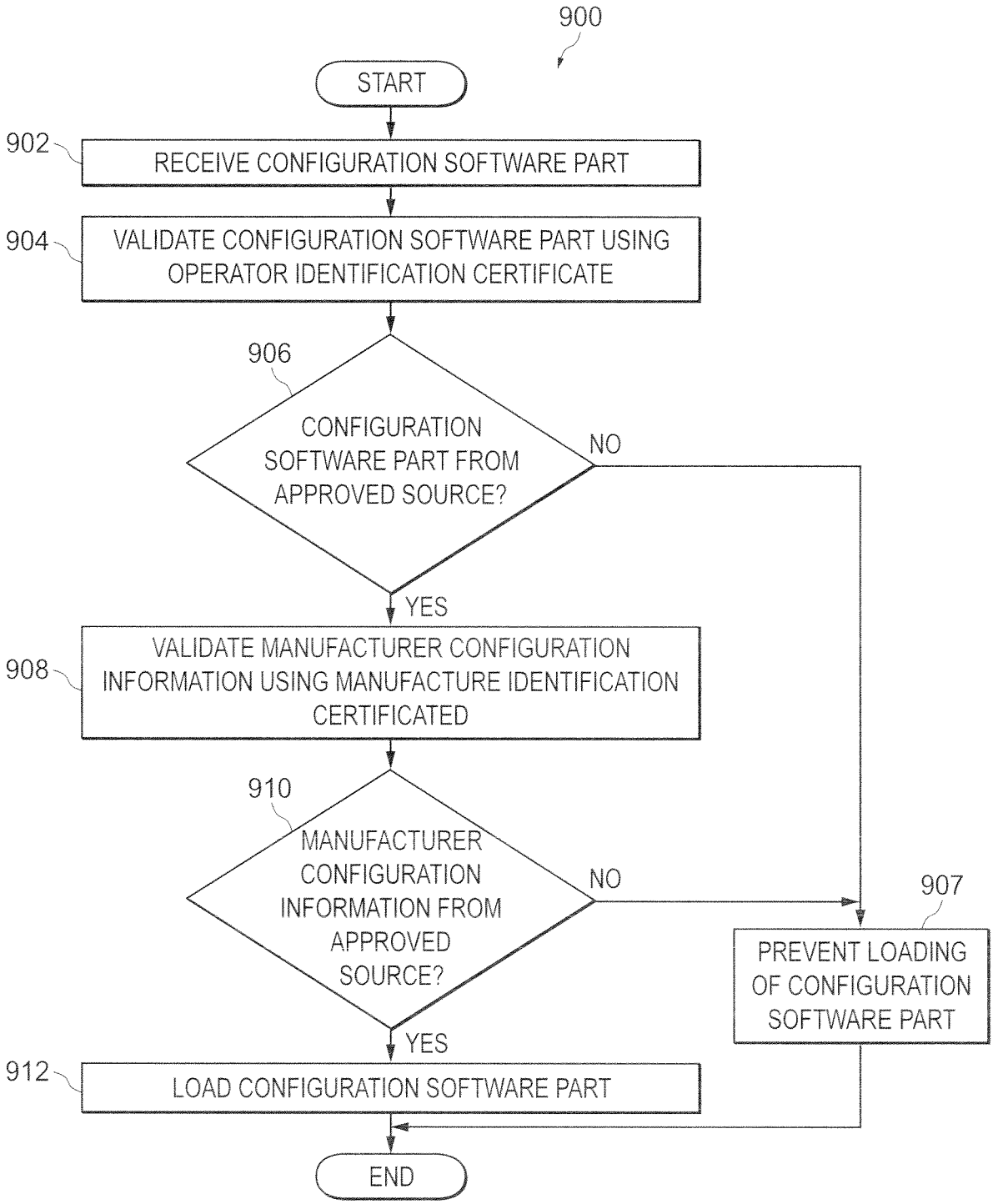

900
START
902
RECEIVE CONFIGURATION SOFTWARE PART
904
VALIDATE CONFIGURATION SOFTWARE PART USING OPERATOR IDENTIFICATION CERTIFICATE
906
CONFIGURATION SOFTWARE PART FROM APPROVED SOURCE?
NO
YES
908
VALIDATE MANUFACTURER CONFIGURATION INFORMATION USING MANUFACTURE IDENTIFICATION CERTIFICATED
910
MANUFACTURER CONFIGURATION INFORMATION FROM APPROVED SOURCE?
NO
907
PREVENT LOADING OF CONFIGURATION SOFTWARE PART
YES
912
LOAD CONFIGURATION SOFTWARE PART
END

FIG. 9

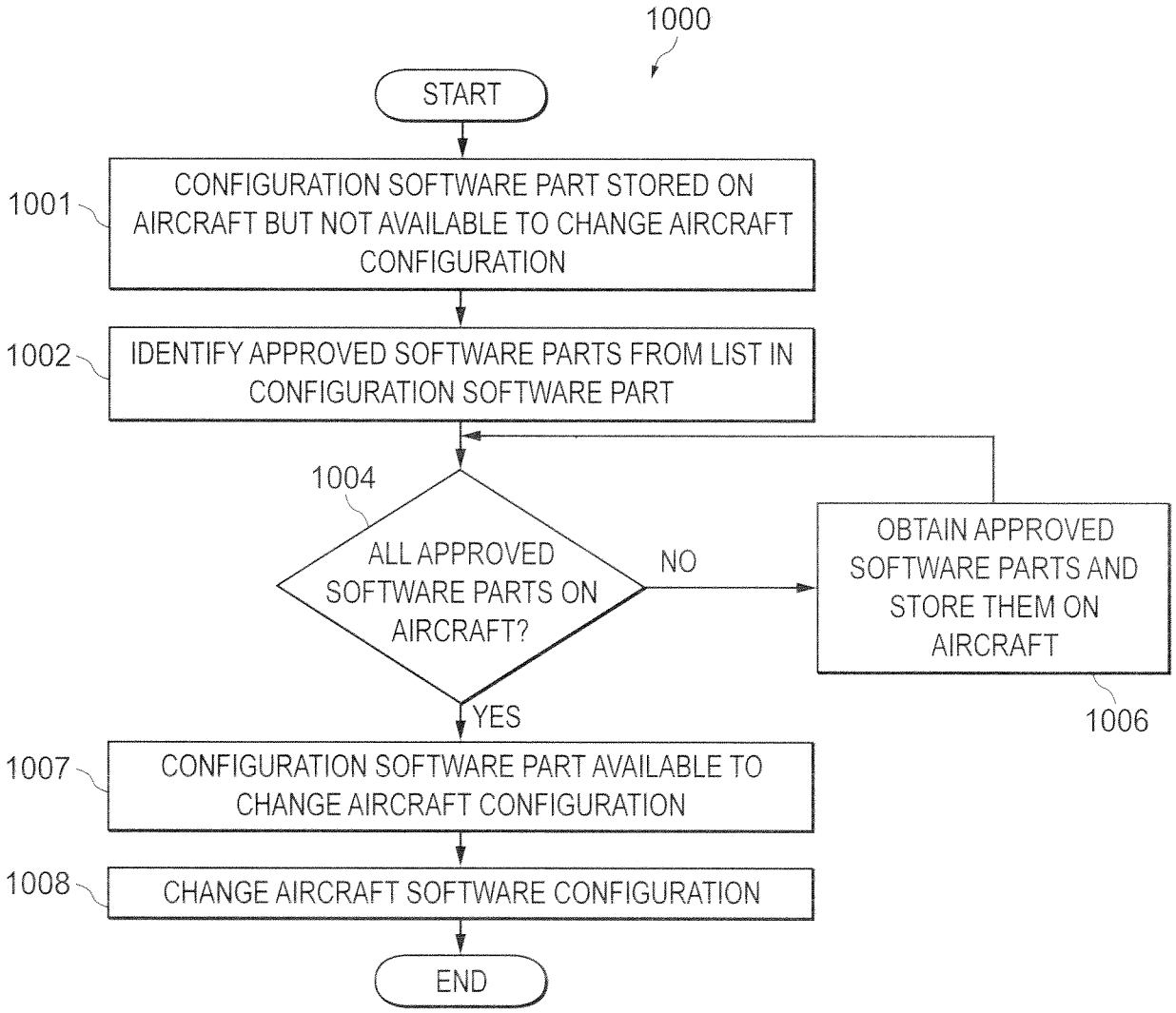

1000
START
1001
CONFIGURATION SOFTWARE PART STORED ON AIRCRAFT BUT NOT AVAILABLE TO CHANGE AIRCRAFT CONFIGURATION
1002
IDENTIFY APPROVED SOFTWARE PARTS FROM LIST IN CONFIGURATION SOFTWARE PART
1004
ALL APPROVED SOFTWARE PARTS ON AIRCRAFT?
NO
OBTAIN APPROVED SOFTWARE PARTS AND STORE THEM ON AIRCRAFT
1006
YES
1007
CONFIGURATION SOFTWARE PART AVAILABLE TO CHANGE AIRCRAFT CONFIGURATION
1008
CHANGE AIRCRAFT SOFTWARE CONFIGURATION
END

FIG. 10

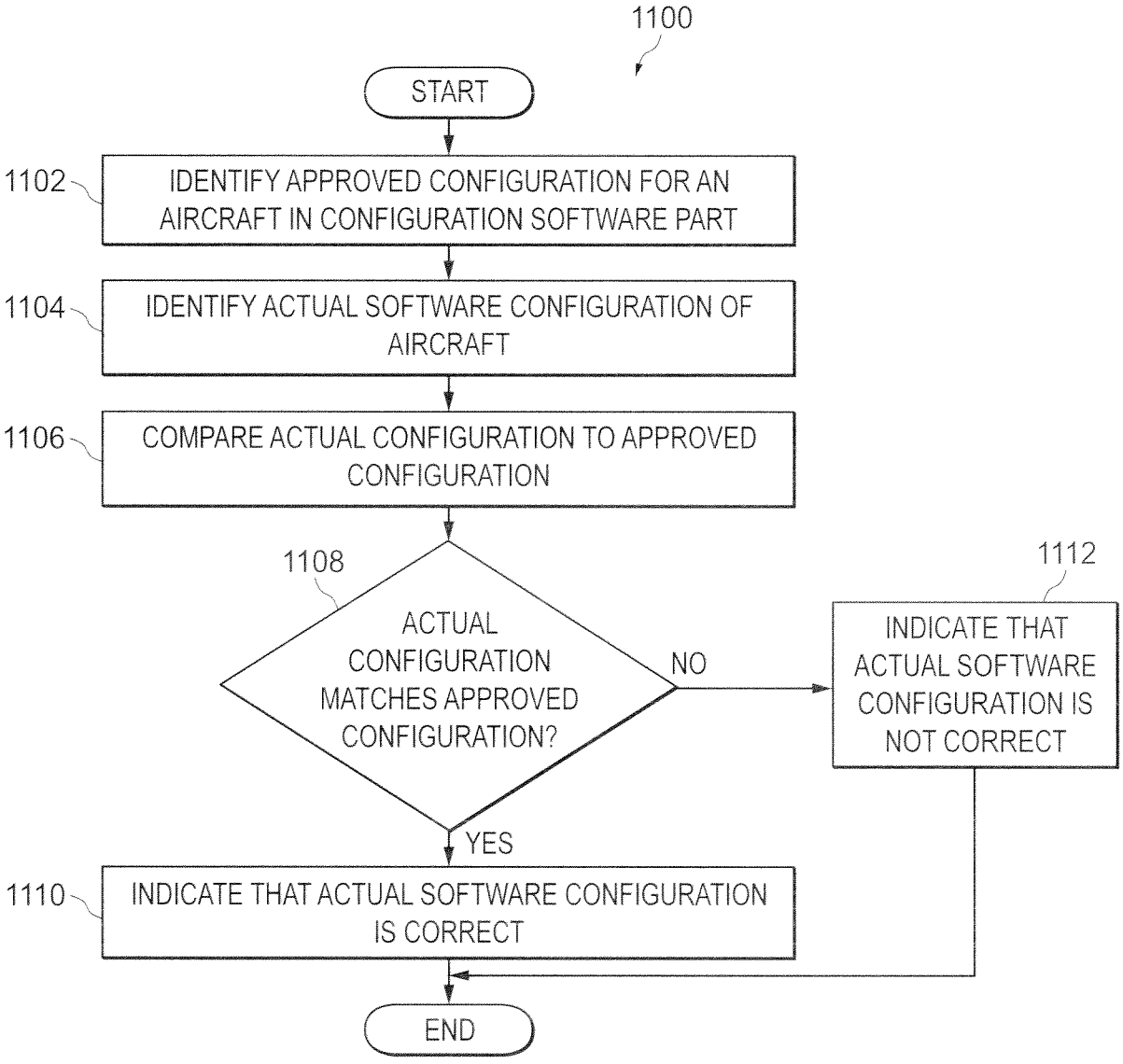

1100
START
1102
IDENTIFY APPROVED CONFIGURATION FOR AN AIRCRAFT IN CONFIGURATION SOFTWARE PART
1104
IDENTIFY ACTUAL SOFTWARE CONFIGURATION OF AIRCRAFT
1106
COMPARE ACTUAL CONFIGURATION TO APPROVED CONFIGURATION
1108
ACTUAL CONFIGURATION MATCHES APPROVED CONFIGURATION?
NO
1112
INDICATE THAT ACTUAL SOFTWARE CONFIGURATION IS NOT CORRECT
YES
1110
INDICATE THAT ACTUAL SOFTWARE CONFIGURATION IS CORRECT
END

FIG. 11

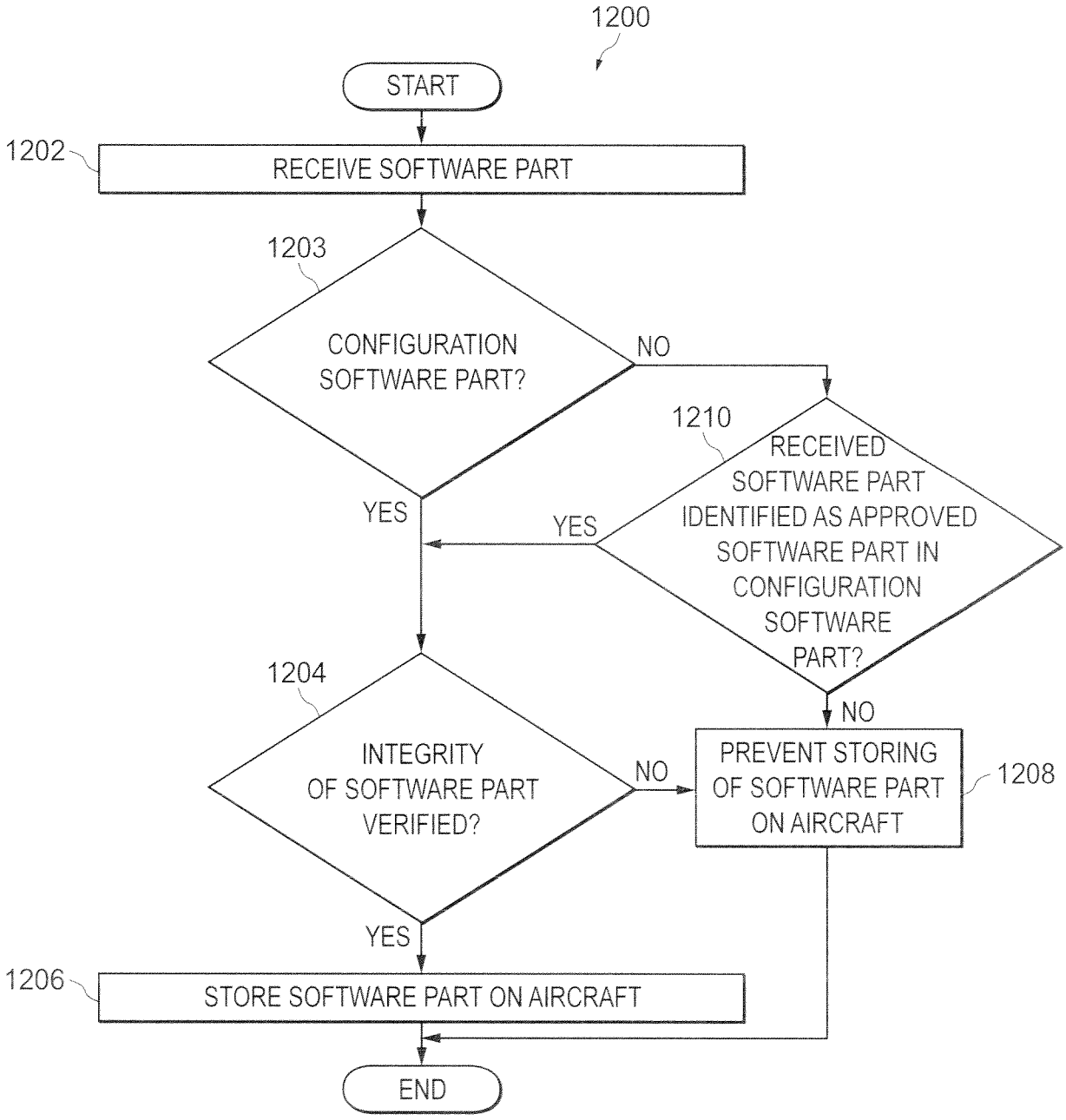

1200
START
1202
RECEIVE SOFTWARE PART
1203
CONFIGURATION SOFTWARE PART?
NO
YES
1210
RECEIVED SOFTWARE PART IDENTIFIED AS APPROVED SOFTWARE PART IN CONFIGURATION SOFTWARE PART?
YES
NO
1204
INTEGRITY OF SOFTWARE PART VERIFIED?
NO
PREVENT STORING OF SOFTWARE PART ON AIRCRAFT
1208
YES
1206
STORE SOFTWARE PART ON AIRCRAFT
END

FIG. 12

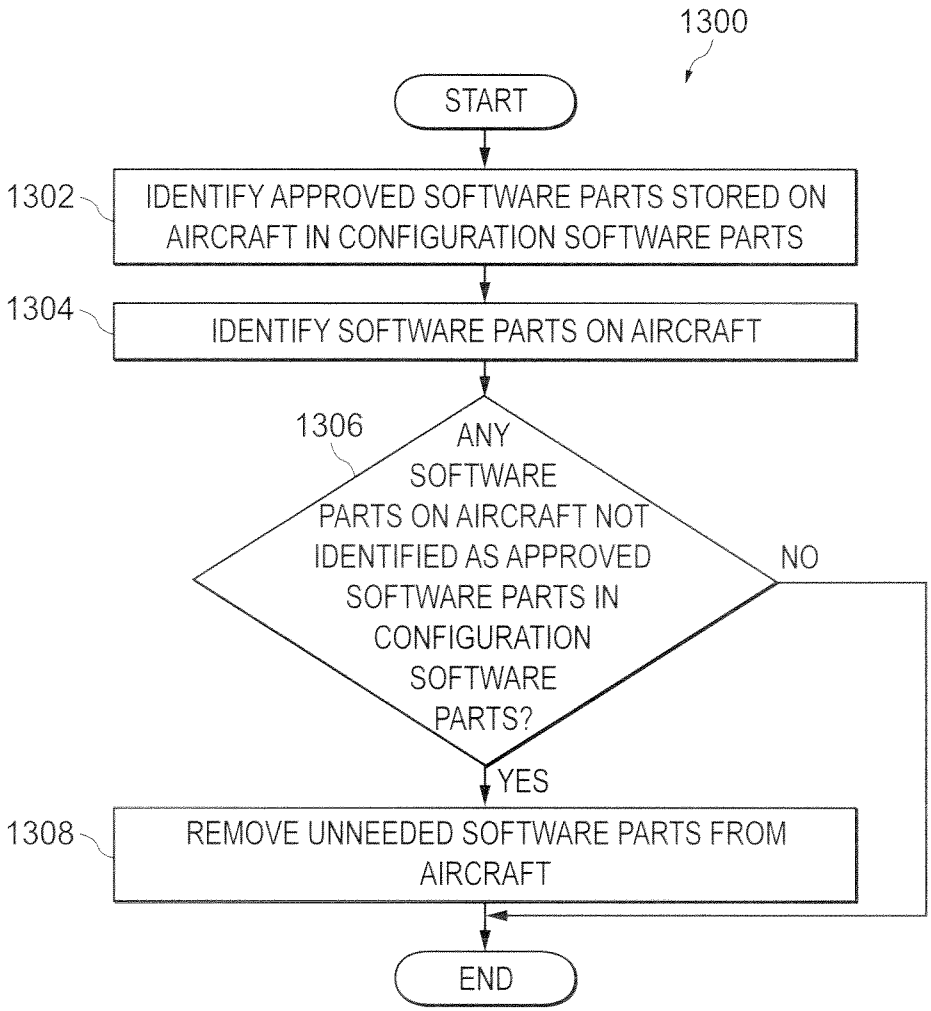
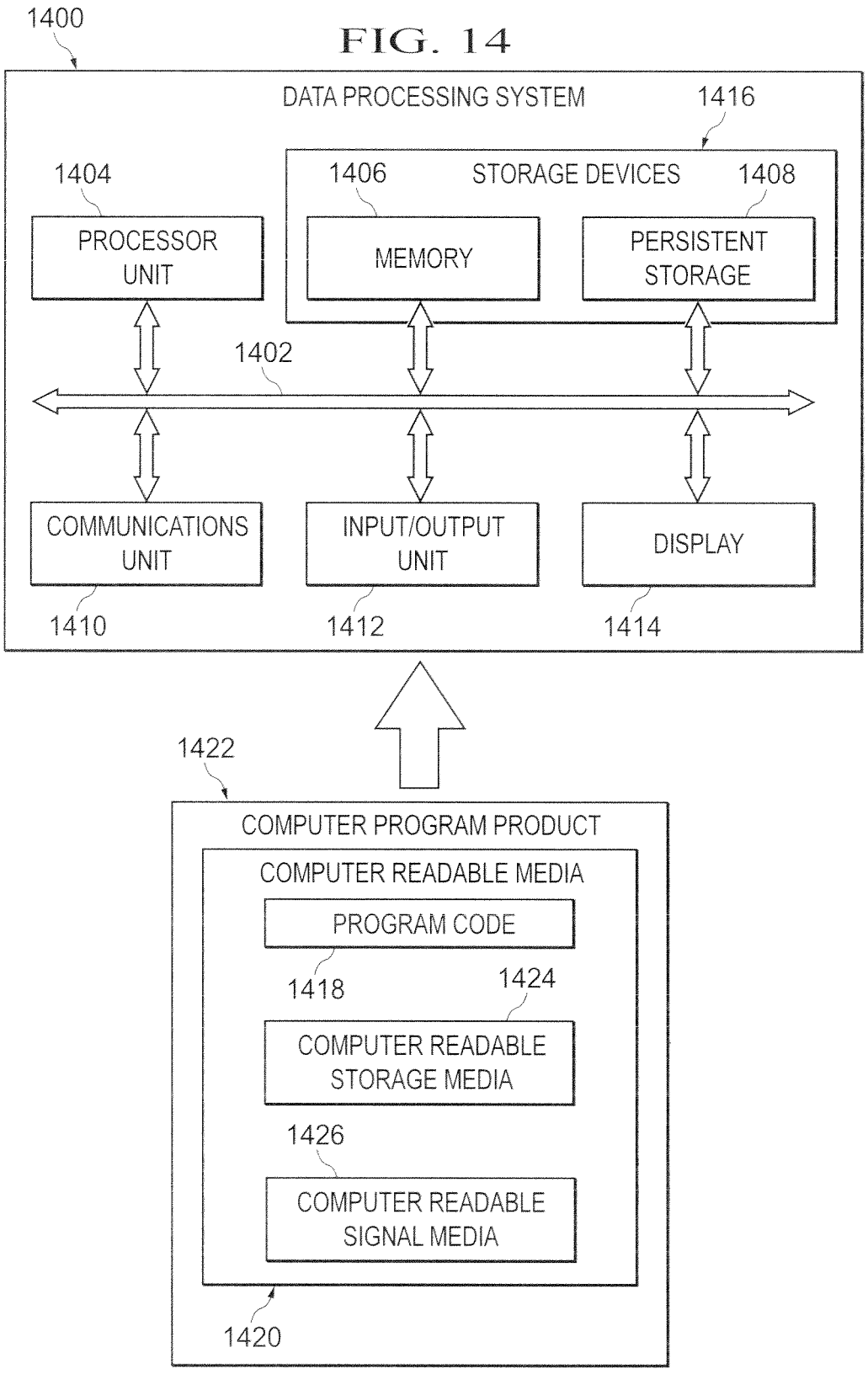

1300
START
1302
IDENTIFY APPROVED SOFTWARE PARTS STORED ON AIRCRAFT IN CONFIGURATION SOFTWARE PARTS
1304
IDENTIFY SOFTWARE PARTS ON AIRCRAFT
1306
ANY SOFTWARE PARTS ON AIRCRAFT NOT IDENTIFIED AS APPROVED SOFTWARE PARTS IN CONFIGURATION SOFTWARE PARTS?
NO
YES
1308
REMOVE UNNEEDED SOFTWARE PARTS FROM AIRCRAFT
END

FIG. 13

FIG. 14


1400
DATA PROCESSING SYSTEM
1416
1404
1406
STORAGE DEVICES
1408
PROCESSOR UNIT
MEMORY
PERSISTENT STORAGE
1402
COMMUNICATIONS UNIT
INPUT/OUTPUT UNIT
DISPLAY
1410
1412
1414
1422
COMPUTER PROGRAM PRODUCT
COMPUTER READABLE MEDIA
PROGRAM CODE
1418
1424
COMPUTER READABLE STORAGE MEDIA
1426
COMPUTER READABLE SIGNAL MEDIA
1420