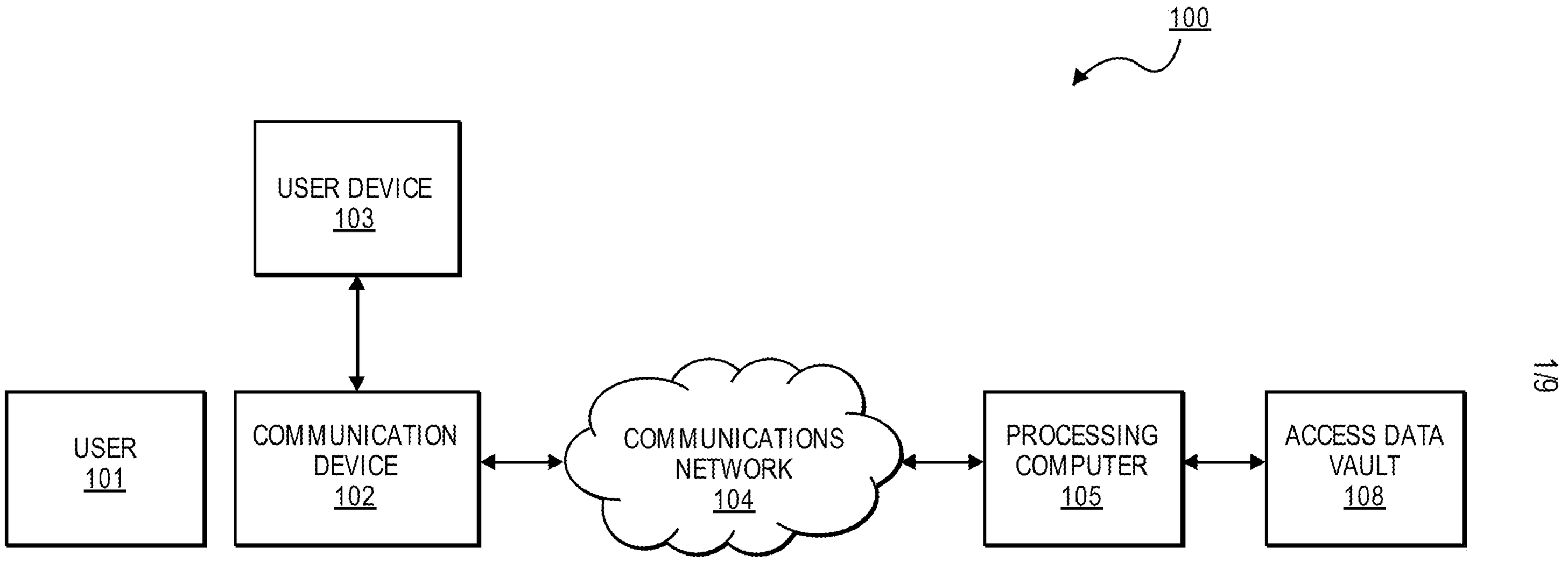
100
USER DEVICE
103
USER
101
COMMUNICATION DEVICE
102
COMMUNICATIONS NETWORK
104
PROCESSING COMPUTER
105
ACCESS DATA VAULT
108

FIG. 1

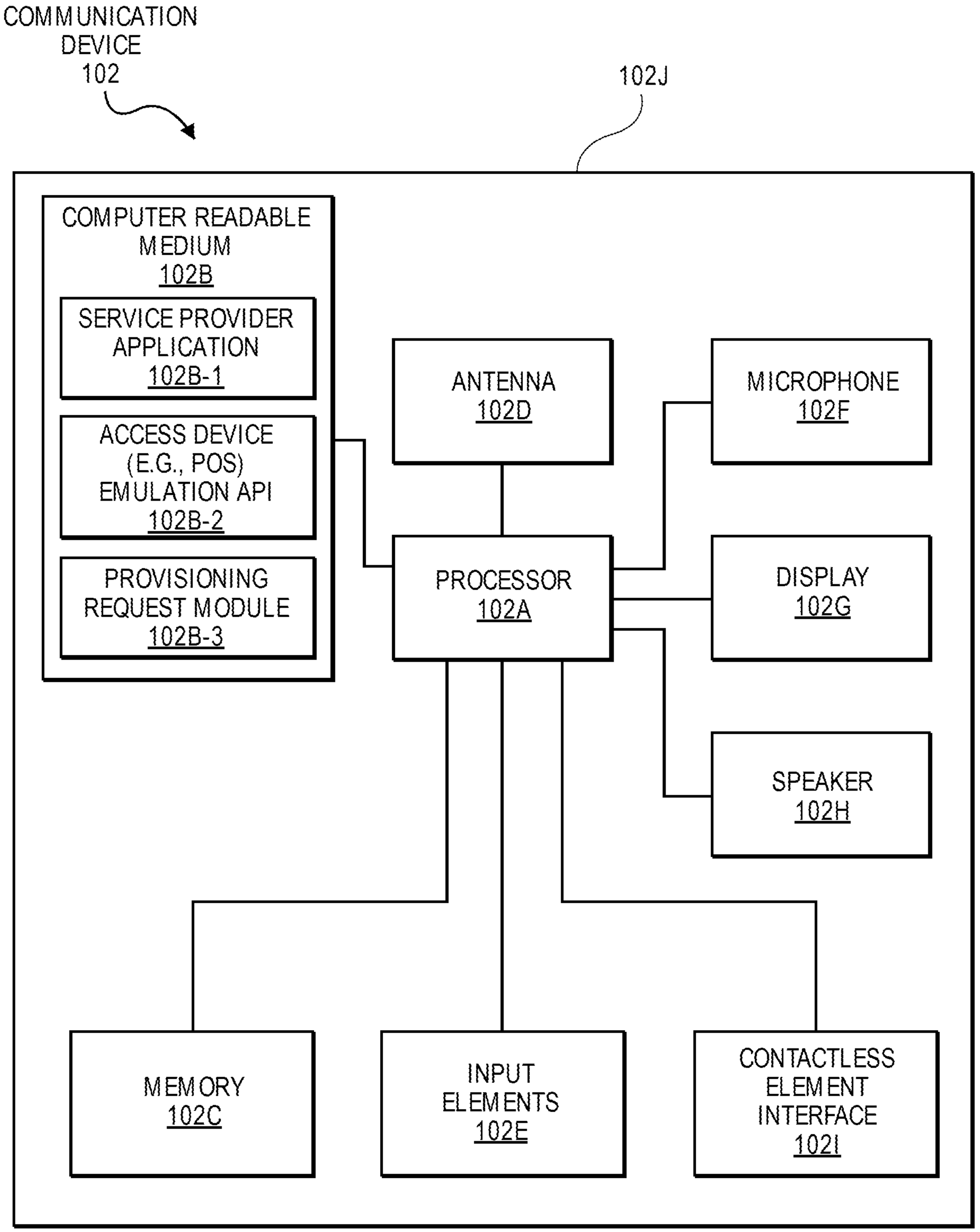
COMMUNICATION DEVICE 102
102J
COMPUTER READABLE MEDIUM 102B
SERVICE PROVIDER APPLICATION 102B-1
ACCESS DEVICE (E.G., POS) EMULATION API 102B-2
PROVISIONING REQUEST MODULE 102B-3
ANTENNA 102D
MICROPHONE 102F
PROCESSOR 102A
DISPLAY 102G
SPEAKER 102H
MEMORY 102C
INPUT ELEMENTS 102E
CONTACTLESS ELEMENT INTERFACE 102I

FIG. 2

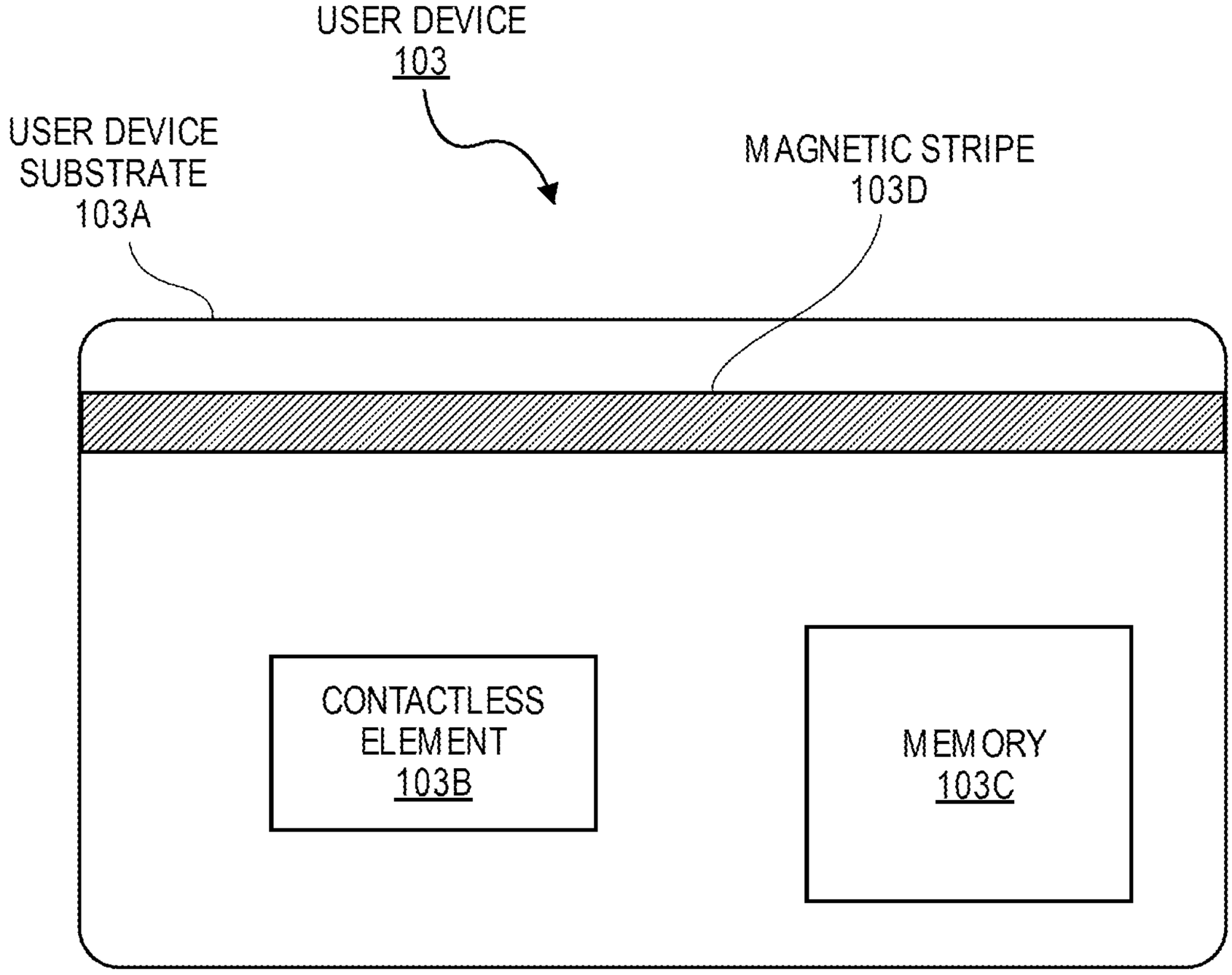
USER DEVICE
103
USER DEVICE SUBSTRATE 103A
MAGNETIC STRIPE 103D
CONTACTLESS ELEMENT 103B
MEMORY 103C

FIG. 3

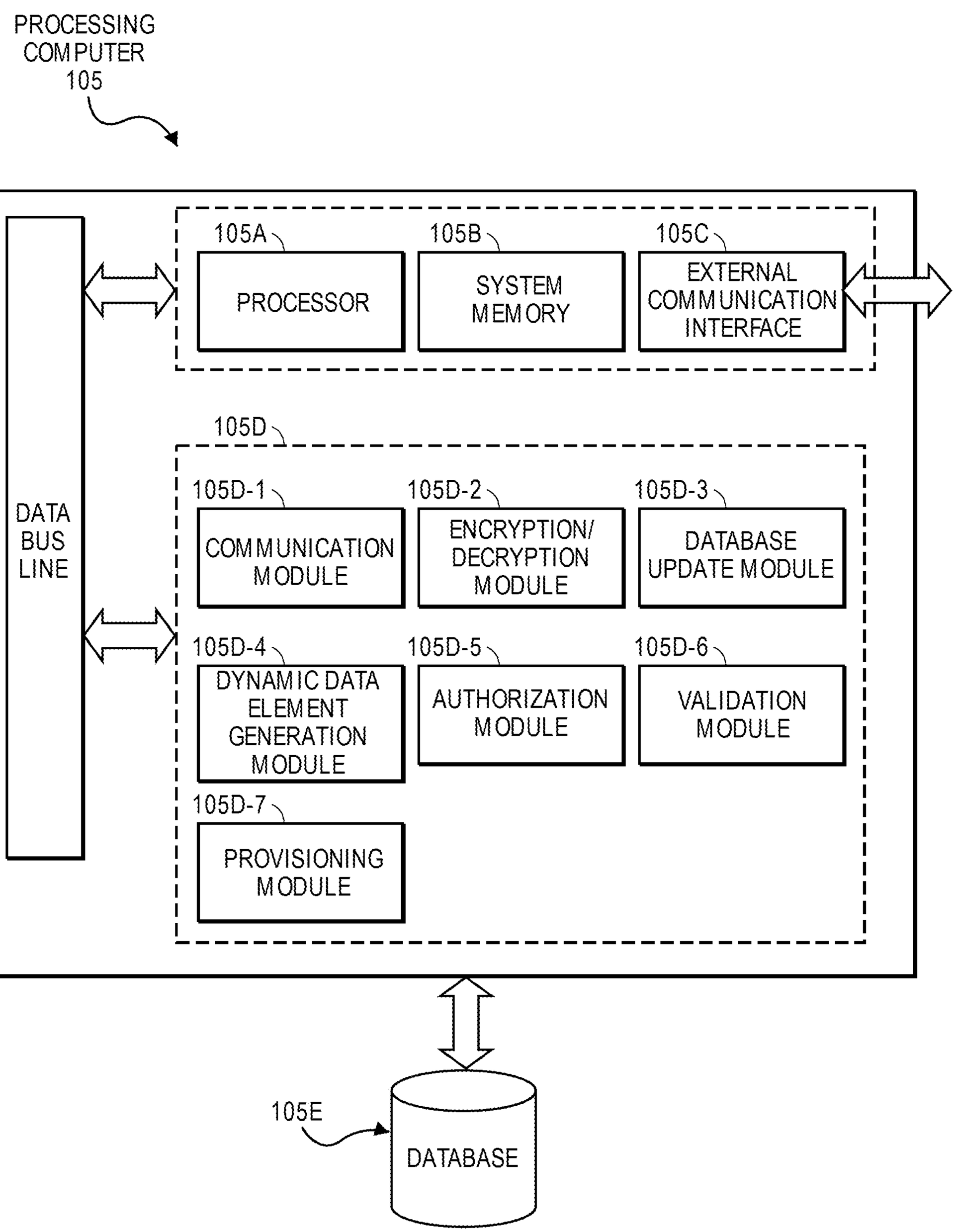
PROCESSING COMPUTER 105
105A
PROCESSOR
105B
SYSTEM MEMORY
105C
EXTERNAL COMMUNICATION INTERFACE
DATA BUS LINE
105D
105D-1
COMMUNICATION MODULE
105D-2
ENCRYPTION/ DECRYPTION MODULE
105D-3
DATABASE UPDATE MODULE
105D-4
DYNAMIC DATA ELEMENT GENERATION MODULE
105D-5
AUTHORIZATION MODULE
105D-6
VALIDATION MODULE
105D-7
PROVISIONING MODULE
105E
DATABASE

FIG. 4

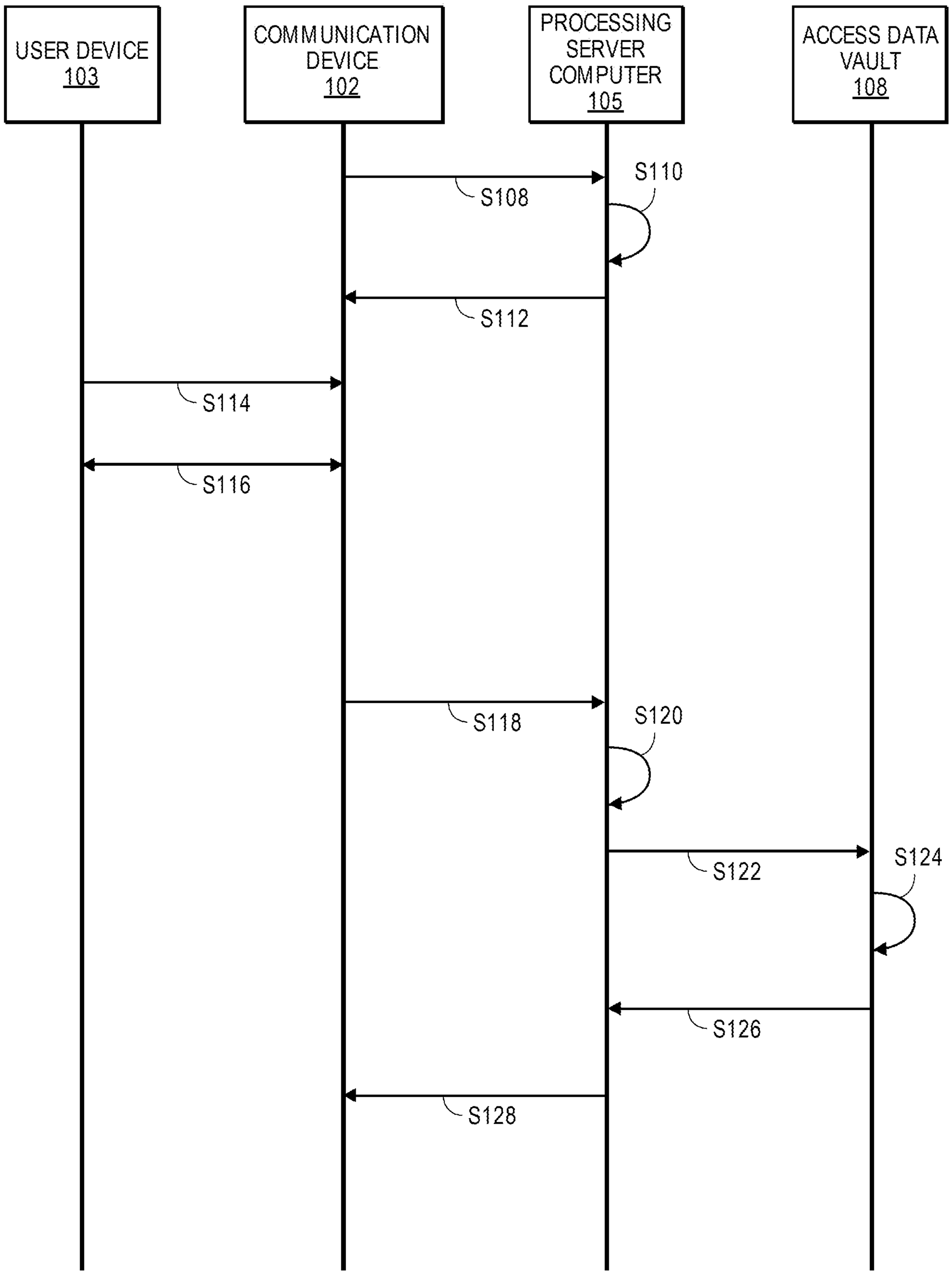
USER DEVICE
103
COMMUNICATION DEVICE
102
PROCESSING SERVER COMPUTER
105
ACCESS DATA VAULT
108
S108
S110
S112
S114
S116
S118
S120
S122
S124
S126
S128

FIG. 5

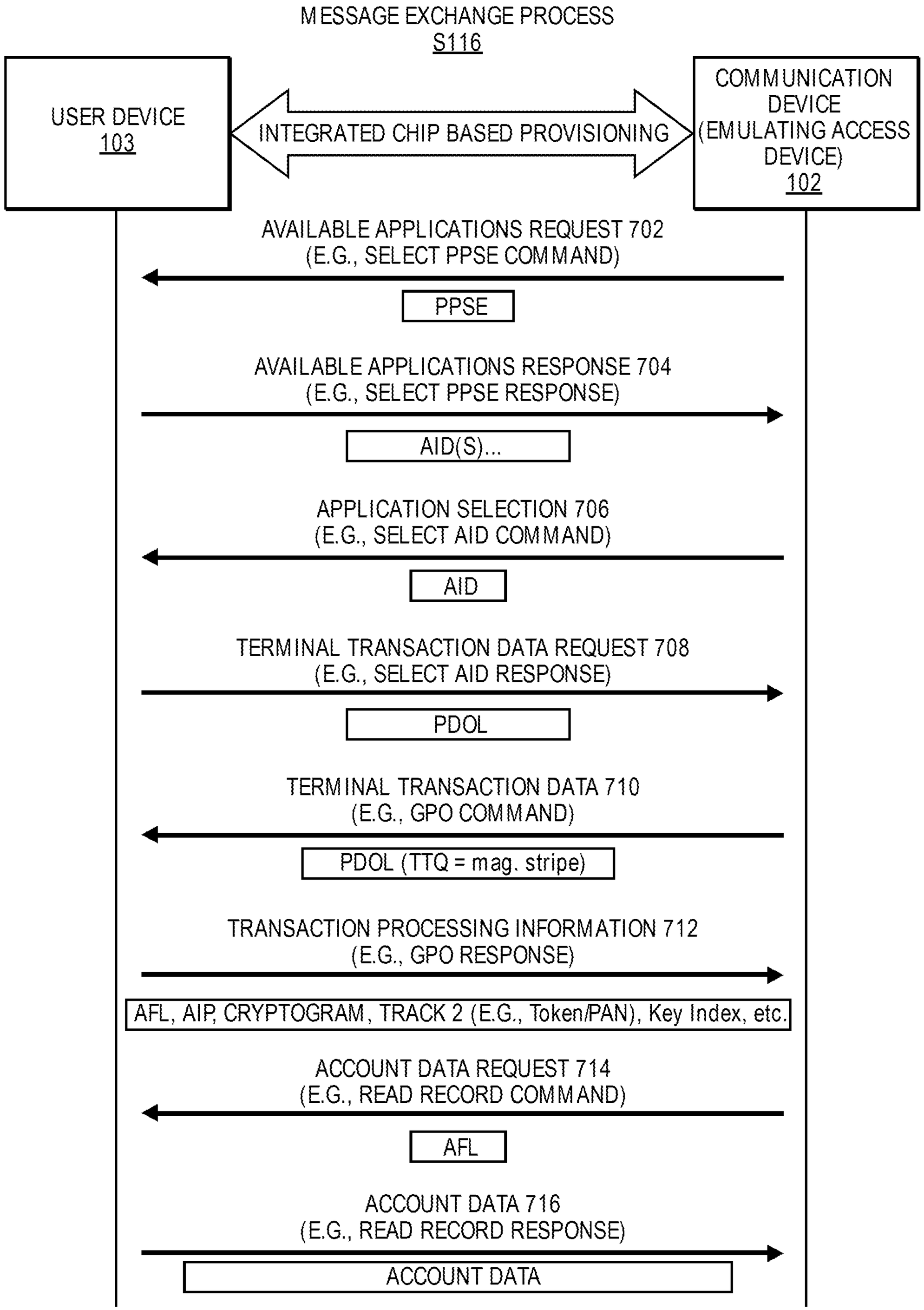
MESSAGE EXCHANGE PROCESS
S116
USER DEVICE
103
INTEGRATED CHIP BASED PROVISIONING
COMMUNICATION DEVICE (EMULATING ACCESS DEVICE)
102
AVAILABLE APPLICATIONS REQUEST 702
(E.G., SELECT PPSE COMMAND)
PPSE
AVAILABLE APPLICATIONS RESPONSE 704
(E.G., SELECT PPSE RESPONSE)
AID(S)...
APPLICATION SELECTION 706
(E.G., SELECT AID COMMAND)
AID
TERMINAL TRANSACTION DATA REQUEST 708
(E.G., SELECT AID RESPONSE)
PDOL
TERMINAL TRANSACTION DATA 710
(E.G., GPO COMMAND)
PDOL (TTQ = mag. stripe)
TRANSACTION PROCESSING INFORMATION 712
(E.G., GPO RESPONSE)
AFL, AIP, CRYPTOGRAM, TRACK 2 (E.G., Token/PAN), Key Index, etc.
ACCOUNT DATA REQUEST 714
(E.G., READ RECORD COMMAND)
AFL
ACCOUNT DATA 716
(E.G., READ RECORD RESPONSE)
ACCOUNT DATA

FIG. 6

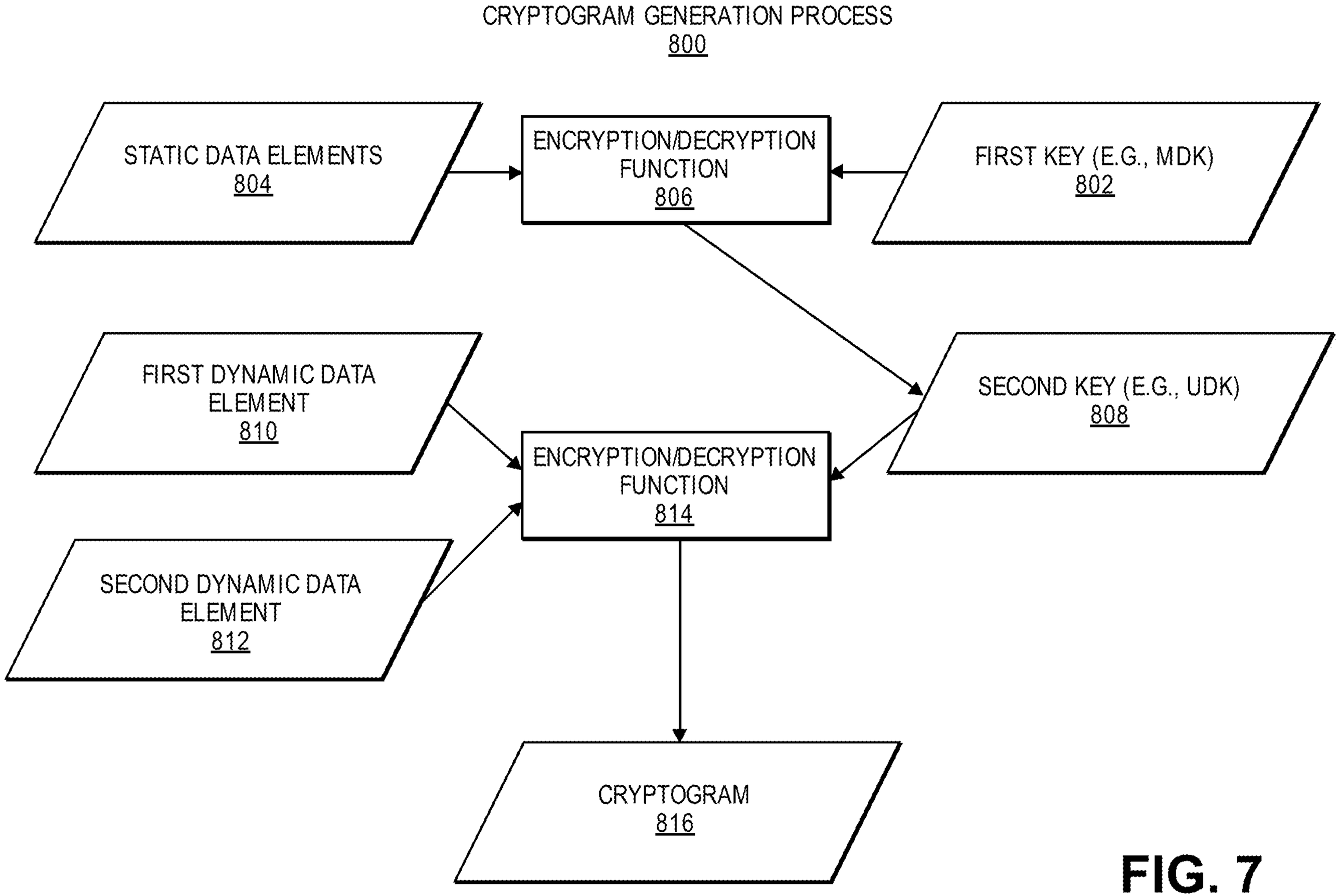
CRYPTOGRAM GENERATION PROCESS
800
STATIC DATA ELEMENTS
804
ENCRYPTION/DECRYPTION FUNCTION
806
FIRST KEY (E.G., MDK)
802
FIRST DYNAMIC DATA ELEMENT
810
SECOND KEY (E.G., UDK)
808
ENCRYPTION/DECRYPTION FUNCTION
814
SECOND DYNAMIC DATA ELEMENT
812
CRYPTOGRAM
816

FIG. 7

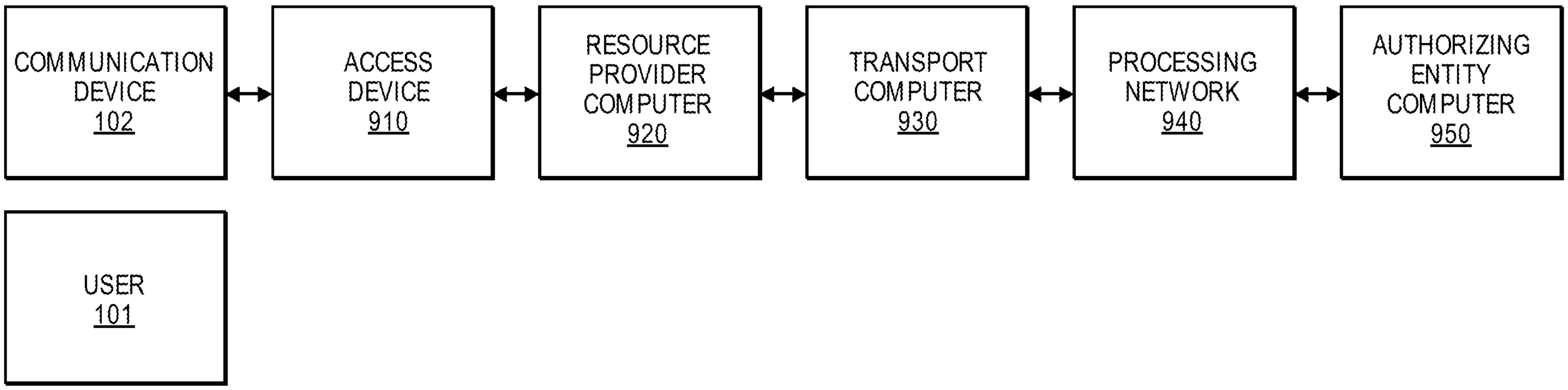
COMMUNICATION DEVICE 102
ACCESS DEVICE 910
RESOURCE PROVIDER COMPUTER 920
TRANSPORT COMPUTER 930
PROCESSING NETWORK 940
AUTHORIZING ENTITY COMPUTER 950
USER 101

FIG. 8

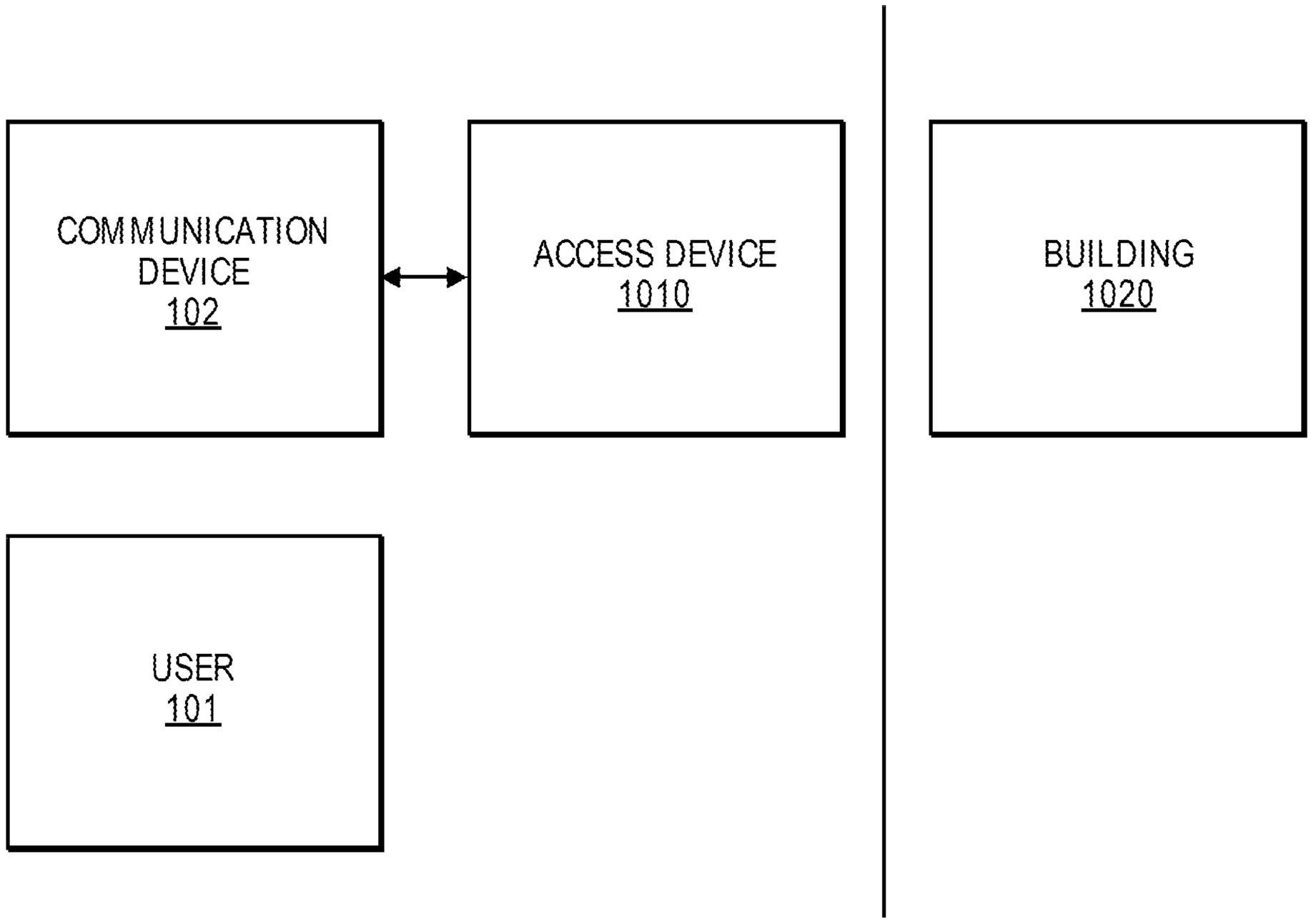
COMMUNICATION DEVICE
102
ACCESS DEVICE
1010
BUILDING
1020
USER
101

FIG. 9