FIG. 1

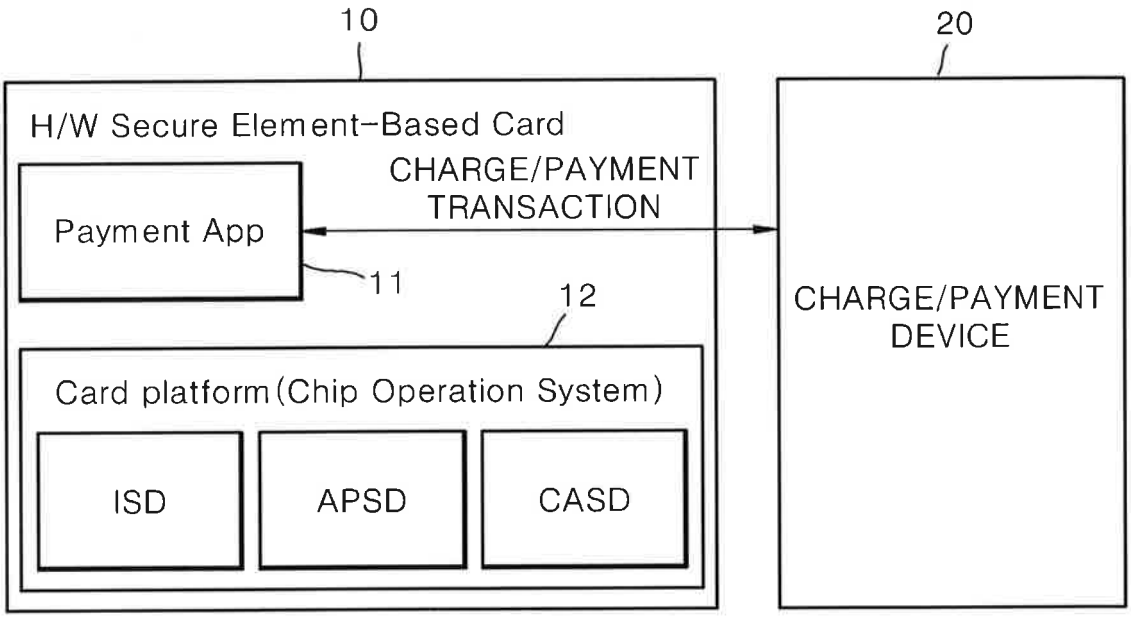

10
20
H/W Secure Element-Based Card
CHARGE/PAYMENT TRANSACTION
Payment App
11
12
CHARGE/PAYMENT DEVICE
Card platform(Chip Operation System)
ISD
APSD
CASD

FIG. 2

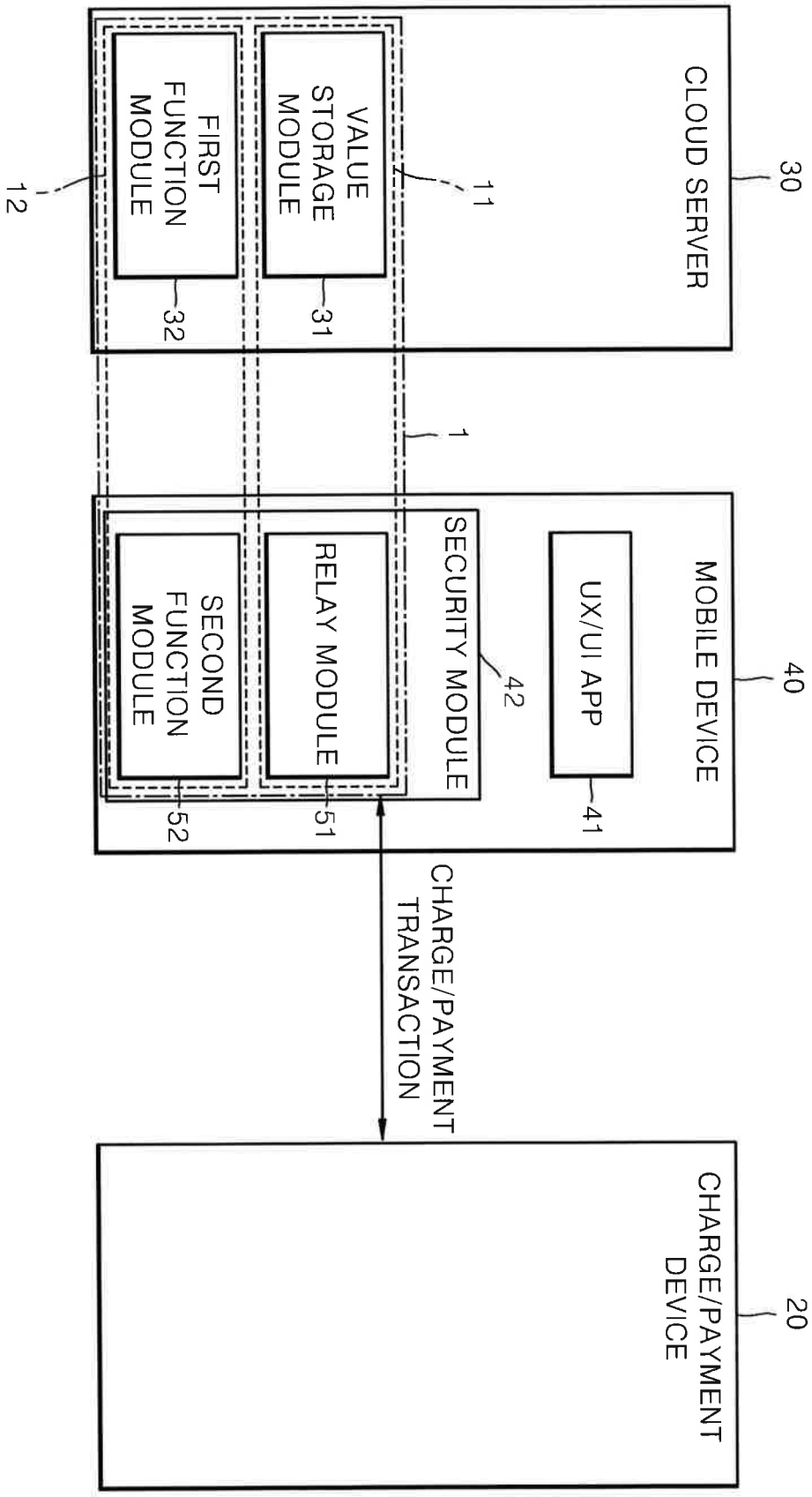

CLOUD SERVER
30
VALUE STORAGE MODULE
31
FIRST FUNCTION MODULE
32
11
12
1
MOBILE DEVICE
40
SECURITY MODULE
42
UX/UI APP
41
RELAY MODULE
51
SECOND FUNCTION MODULE
52
CHARGE/PAYMENT TRANSACTION
CHARGE/PAYMENT DEVICE
20

FIG. 3

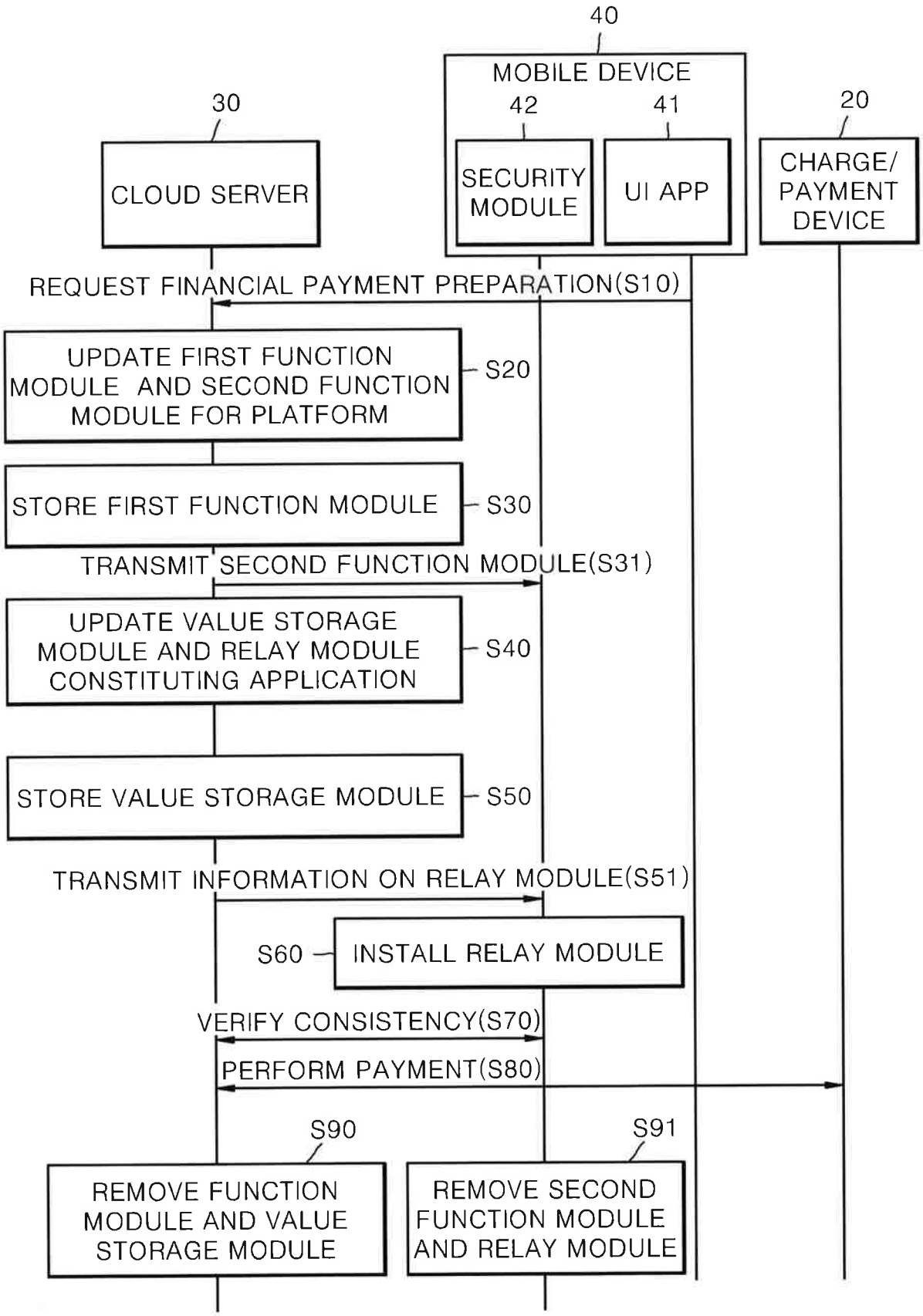

40
MOBILE DEVICE
42
41
30
20
CLOUD SERVER
SECURITY MODULE
UI APP
CHARGE/ PAYMENT DEVICE
REQUEST FINANCIAL PAYMENT PREPARATION(S10)
UPDATE FIRST FUNCTION MODULE AND SECOND FUNCTION MODULE FOR PLATFORM
S20
STORE FIRST FUNCTION MODULE
S30
TRANSMIT SECOND FUNCTION MODULE(S31)
UPDATE VALUE STORAGE MODULE AND RELAY MODULE CONSTITUTING APPLICATION
S40
STORE VALUE STORAGE MODULE
S50
TRANSMIT INFORMATION ON RELAY MODULE(S51)
S60
INSTALL RELAY MODULE
VERIFY CONSISTENCY(S70)
PERFORM PAYMENT(S80)
S90
S91
REMOVE FUNCTION MODULE AND VALUE STORAGE MODULE
REMOVE SECOND FUNCTION MODULE AND RELAY MODULE

FIG. 4

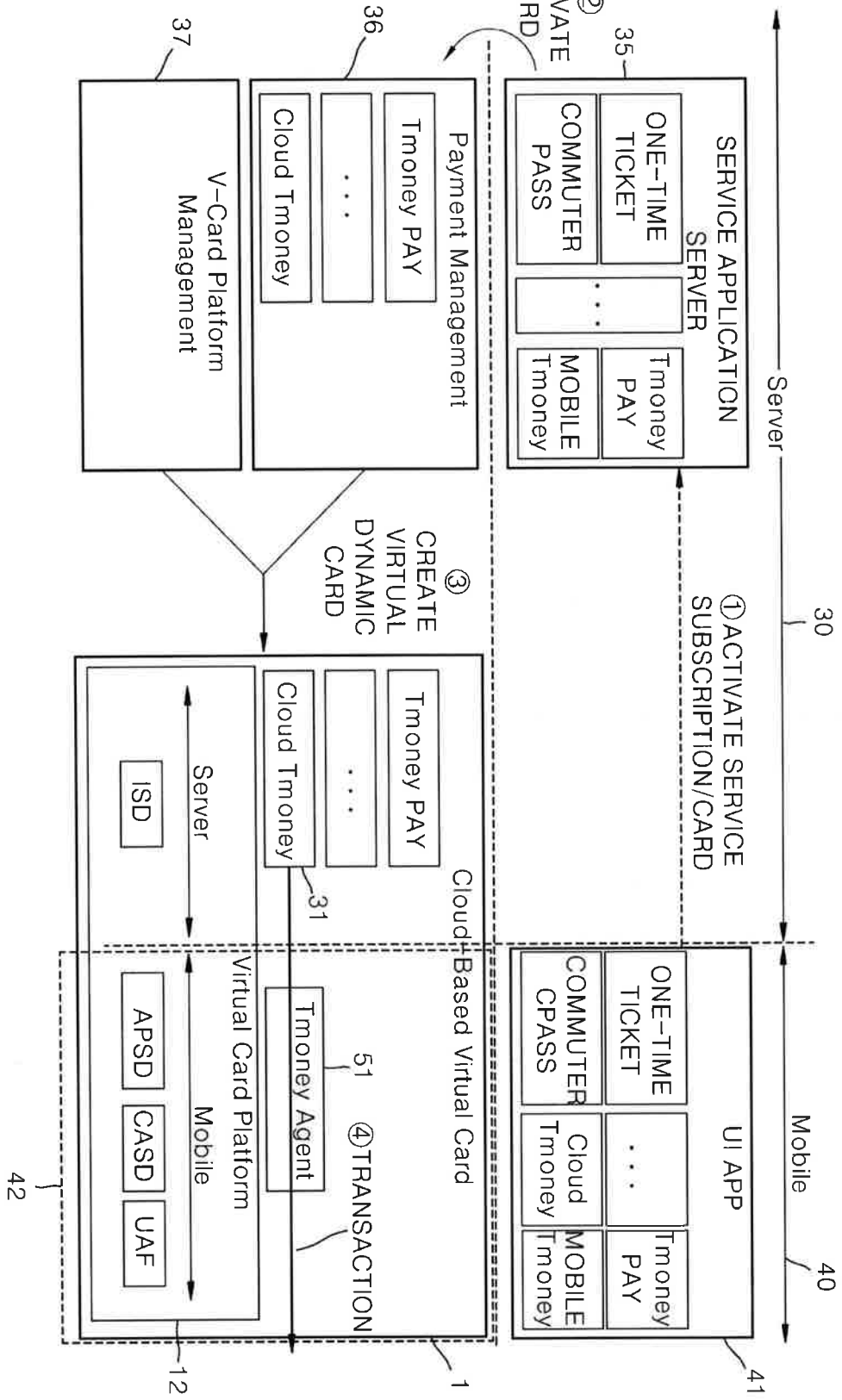

Server
30
Mobile
40
SERVICE APPLICATION SERVER
35
ONE-TIME TICKET
COMMUTER PASS
Tmoney PAY
MOBILE Tmoney
② ACTIVATE CARD
① ACTIVATE SERVICE SUBSCRIPTION/CARD
Payment Management
36
Tmoney PAY
Cloud Tmoney
V-Card Platform Management
37
③ CREATE VIRTUAL DYNAMIC CARD
UI APP
41
ONE-TIME TICKET
COMMUTER CPASS
Tmoney PAY
Cloud Tmoney
MOBILE Tmoney
Cloud-Based Virtual Card
1
Tmoney PAY
Cloud Tmoney
31
Tmoney Agent
51
④TRANSACTION
Server
ISD
Virtual Card Platform
Mobile
APSD
CASD
UAF
12
42

FIG. 5

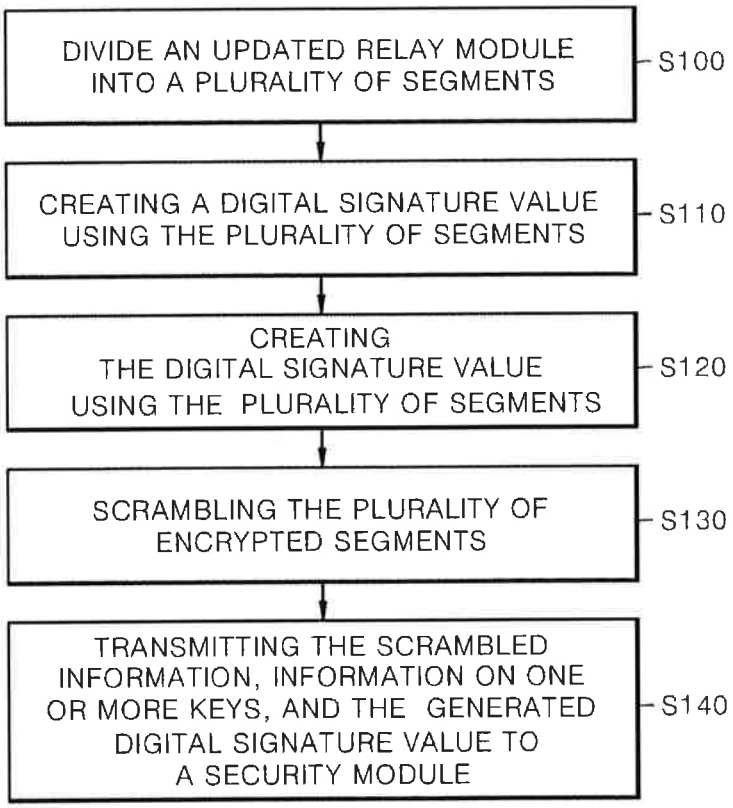
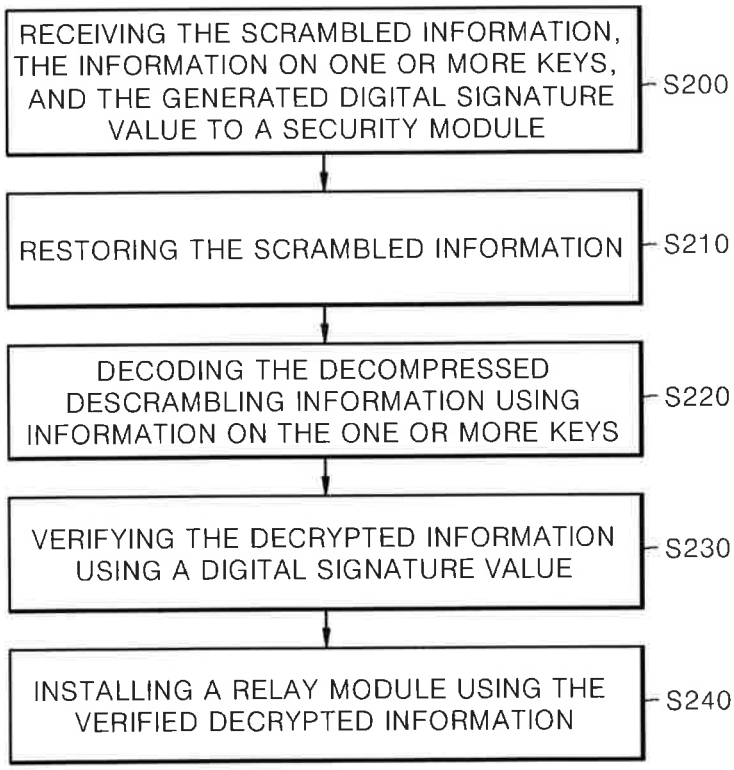

DIVIDE AN UPDATED RELAY MODULE INTO A PLURALITY OF SEGMENTS
S100
CREATING A DIGITAL SIGNATURE VALUE USING THE PLURALITY OF SEGMENTS
S110
CREATING THE DIGITAL SIGNATURE VALUE USING THE PLURALITY OF SEGMENTS
S120
SCRAMBLING THE PLURALITY OF ENCRYPTED SEGMENTS
S130
TRANSMITTING THE SCRAMBLED INFORMATION, INFORMATION ON ONE OR MORE KEYS, AND THE GENERATED DIGITAL SIGNATURE VALUE TO A SECURITY MODULE
S140

FIG. 6


RECEIVING THE SCRAMBLED INFORMATION, THE INFORMATION ON ONE OR MORE KEYS, AND THE GENERATED DIGITAL SIGNATURE VALUE TO A SECURITY MODULE
S200
RESTORING THE SCRAMBLED INFORMATION
S210
DECODING THE DECOMPRESSED DESCRAMBLING INFORMATION USING INFORMATION ON THE ONE OR MORE KEYS
S220
VERIFYING THE DECRYPTED INFORMATION USING A DIGITAL SIGNATURE VALUE
S230
INSTALLING A RELAY MODULE USING THE VERIFIED DECRYPTED INFORMATION
S240