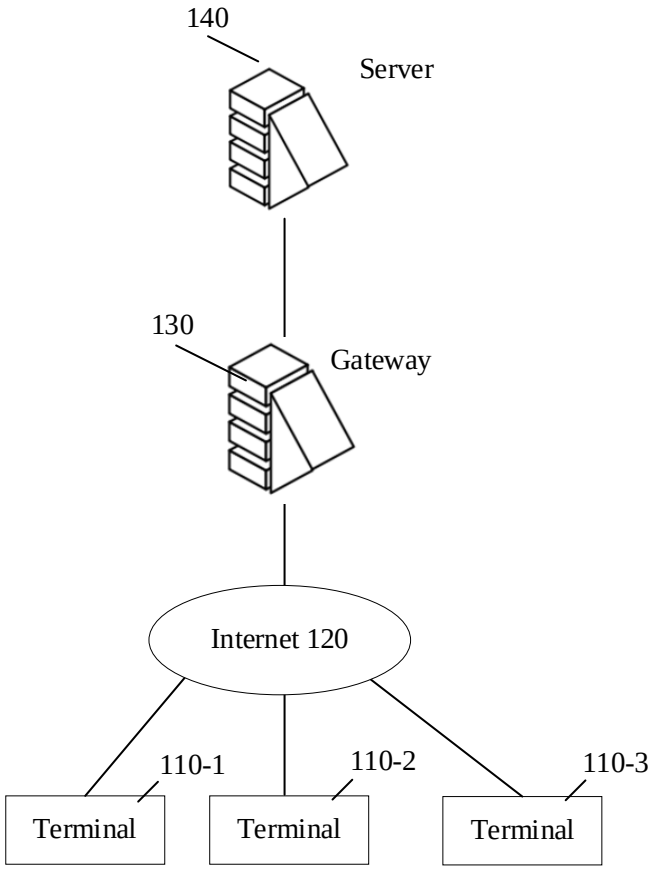
140
Server
130
Gateway
Internet 120
110-1
110-2
110-3
Terminal
Terminal
Terminal

FIG. 1

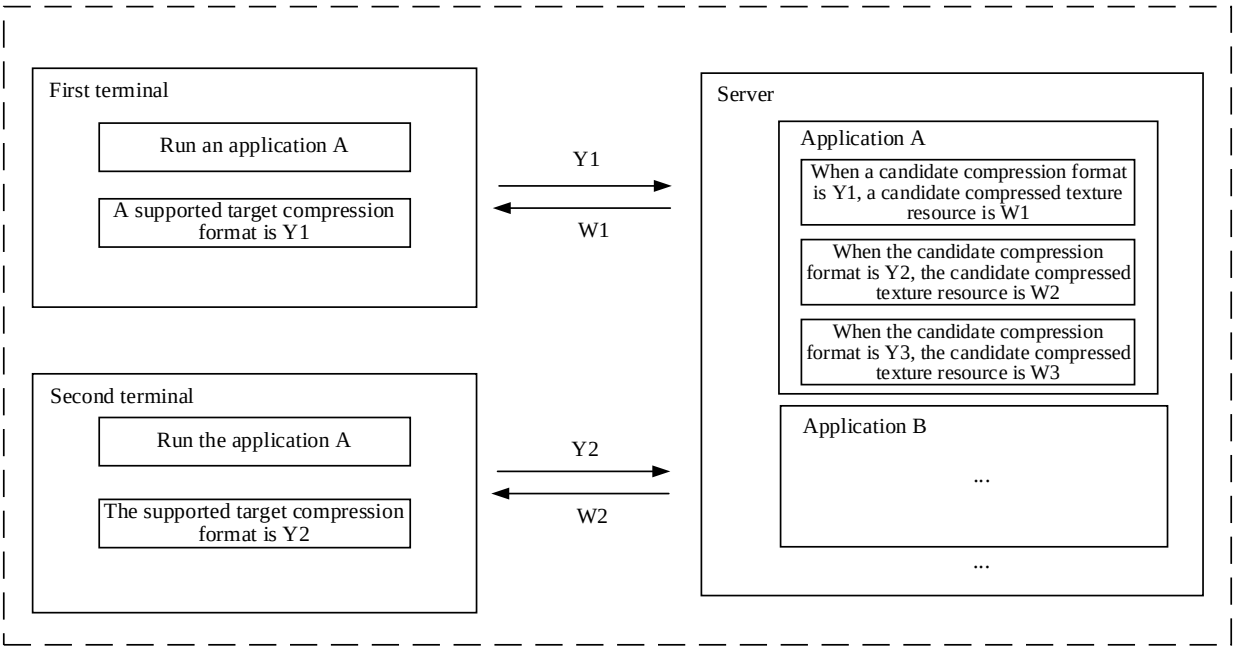
First terminal
Run an application A
A supported target compression format is Y1
Second terminal
Run the application A
The supported target compression format is Y2
Y1
W1
Y2
W2
Server
Application A
When a candidate compression format is Y1, a candidate compressed texture resource is W1
When the candidate compression format is Y2, the candidate compressed texture resource is W2
When the candidate compression format is Y3, the candidate compressed texture resource is W3
Application B
...
...

FIG. 2

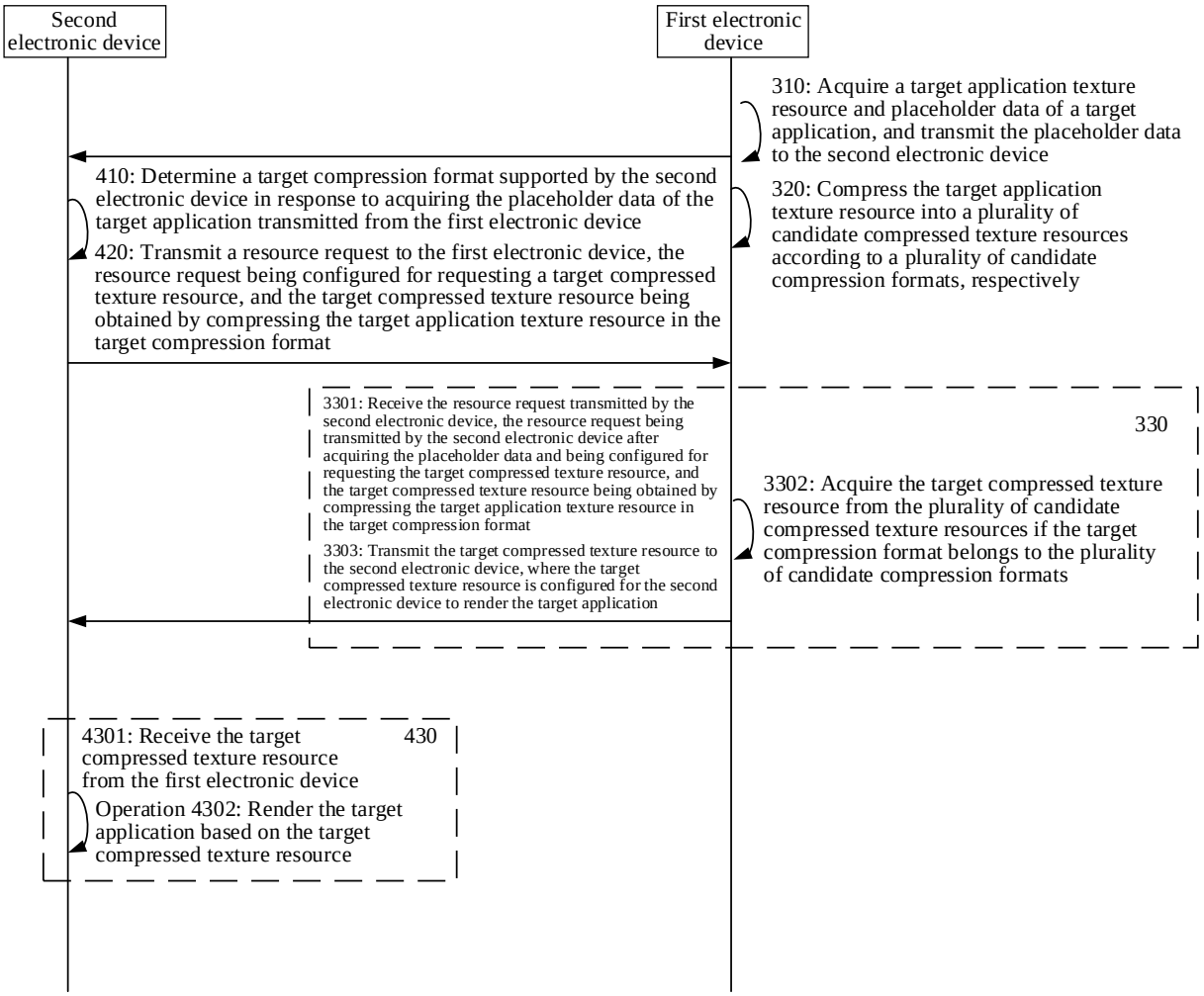
Second electronic device
First electronic device
310: Acquire a target application texture resource and placeholder data of a target application, and transmit the placeholder data to the second electronic device
410: Determine a target compression format supported by the second electronic device in response to acquiring the placeholder data of the target application transmitted from the first electronic device
320: Compress the target application texture resource into a plurality of candidate compressed texture resources according to a plurality of candidate compression formats, respectively
420: Transmit a resource request to the first electronic device, the resource request being configured for requesting a target compressed texture resource, and the target compressed texture resource being obtained by compressing the target application texture resource in the target compression format
330
3301: Receive the resource request transmitted by the second electronic device, the resource request being transmitted by the second electronic device after acquiring the placeholder data and being configured for requesting the target compressed texture resource, and the target compressed texture resource being obtained by compressing the target application texture resource in the target compression format
3302: Acquire the target compressed texture resource from the plurality of candidate compressed texture resources if the target compression format belongs to the plurality of candidate compression formats
3303: Transmit the target compressed texture resource to the second electronic device, where the target compressed texture resource is configured for the second electronic device to render the target application
430
4301: Receive the target compressed texture resource from the first electronic device
Operation 4302: Render the target application based on the target compressed texture resource

FIG. 3

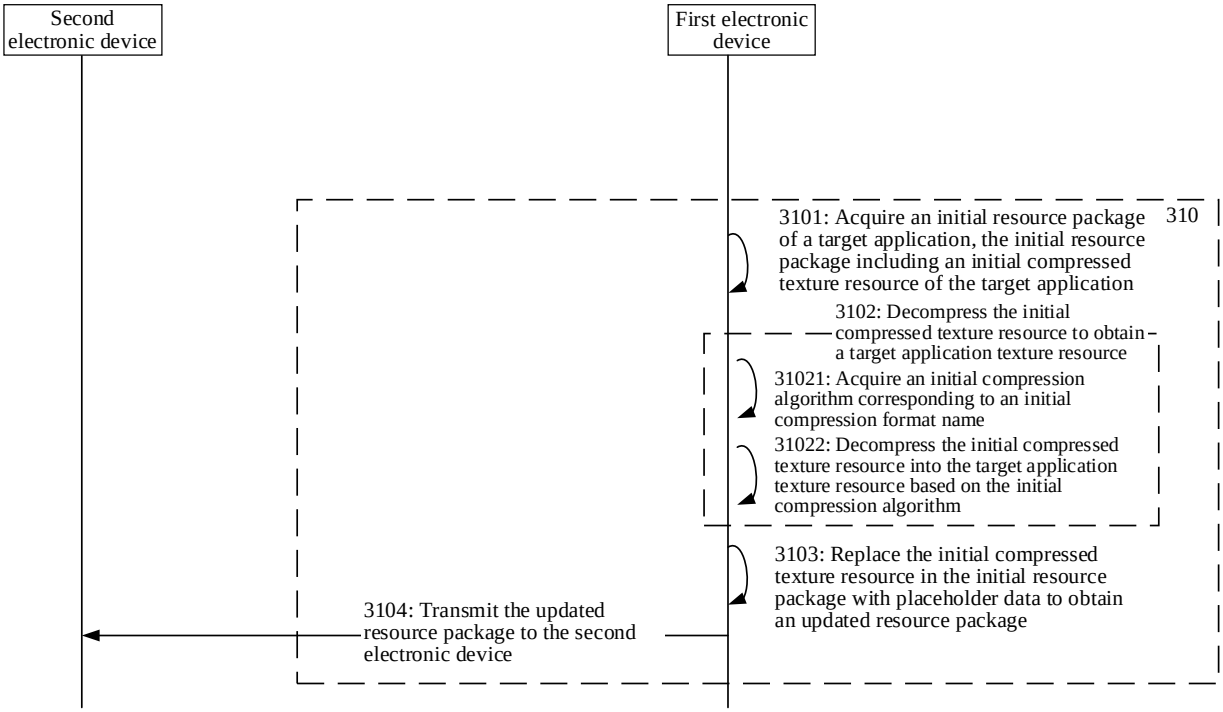
Second electronic device
First electronic device
310
3101: Acquire an initial resource package of a target application, the initial resource package including an initial compressed texture resource of the target application
3102: Decompress the initial compressed texture resource to obtain a target application texture resource
31021: Acquire an initial compression algorithm corresponding to an initial compression format name
31022: Decompress the initial compressed texture resource into the target application texture resource based on the initial compression algorithm
3103: Replace the initial compressed texture resource in the initial resource package with placeholder data to obtain an updated resource package
3104: Transmit the updated resource package to the second electronic device

FIG. 4

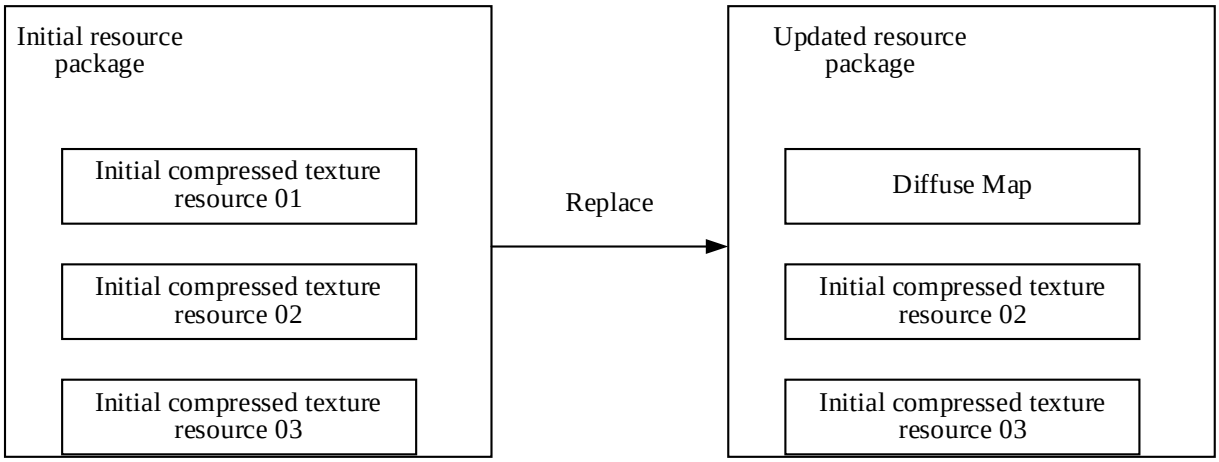
Initial resource package
Initial compressed texture resource 01
Initial compressed texture resource 02
Initial compressed texture resource 03
Replace
Updated resource package
Diffuse Map
Initial compressed texture resource 02
Initial compressed texture resource 03

FIG. 5

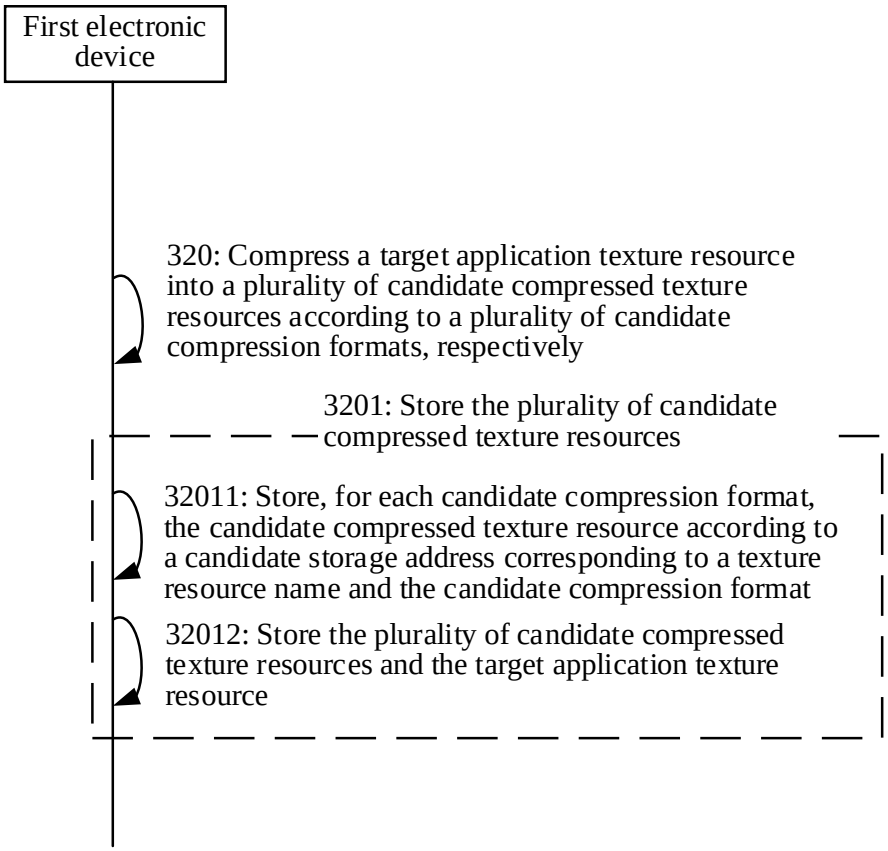
First electronic device
320: Compress a target application texture resource into a plurality of candidate compressed texture resources according to a plurality of candidate compression formats, respectively
3201: Store the plurality of candidate compressed texture resources
32011: Store, for each candidate compression format, the candidate compressed texture resource according to a candidate storage address corresponding to a texture resource name and the candidate compression format
32012: Store the plurality of candidate compressed texture resources and the target application texture resource

FIG. 6

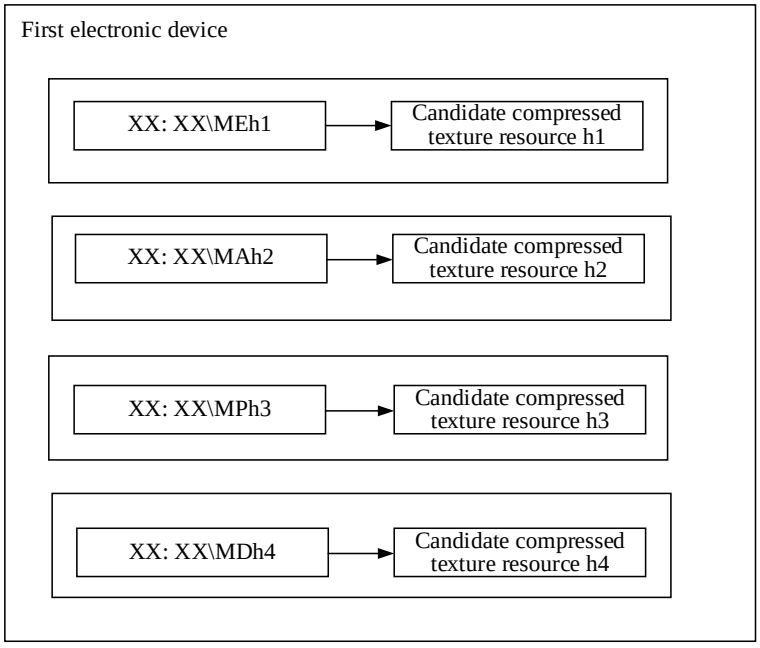
First electronic device
XX: XX\MEh1
Candidate compressed texture resource h1
XX: XX\MAh2
Candidate compressed texture resource h2
XX: XX\MPh3
Candidate compressed texture resource h3
XX: XX\MDh4
Candidate compressed texture resource h4

FIG. 7

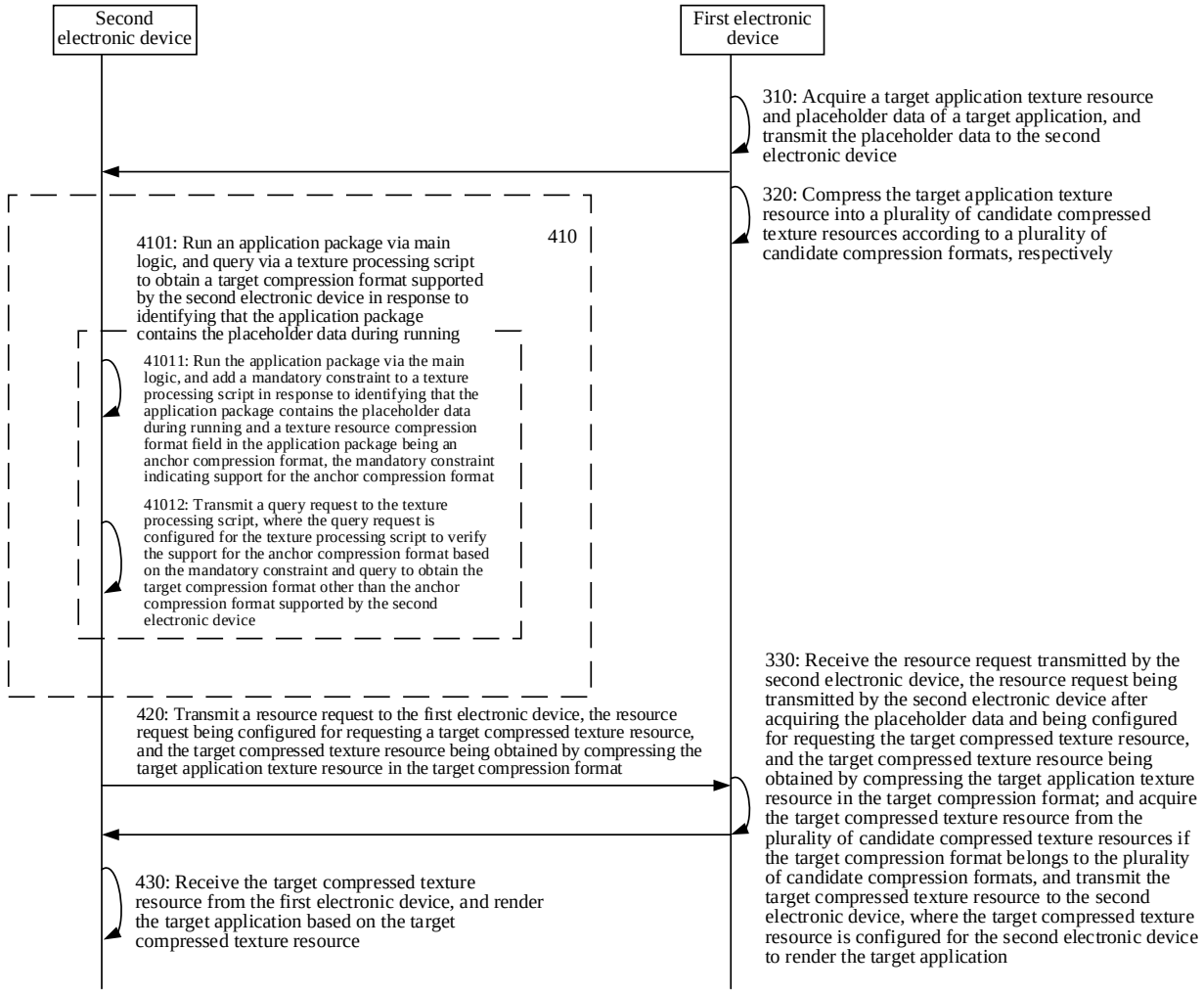
Second electronic device
First electronic device
310: Acquire a target application texture resource and placeholder data of a target application, and transmit the placeholder data to the second electronic device
320: Compress the target application texture resource into a plurality of candidate compressed texture resources according to a plurality of candidate compression formats, respectively
410
4101: Run an application package via main logic, and query via a texture processing script to obtain a target compression format supported by the second electronic device in response to identifying that the application package contains the placeholder data during running
41011: Run the application package via the main logic, and add a mandatory constraint to a texture processing script in response to identifying that the application package contains the placeholder data during running and a texture resource compression format field in the application package being an anchor compression format, the mandatory constraint indicating support for the anchor compression format
41012: Transmit a query request to the texture processing script, where the query request is configured for the texture processing script to verify the support for the anchor compression format based on the mandatory constraint and query to obtain the target compression format other than the anchor compression format supported by the second electronic device
420: Transmit a resource request to the first electronic device, the resource request being configured for requesting a target compressed texture resource, and the target compressed texture resource being obtained by compressing the target application texture resource in the target compression format
330: Receive the resource request transmitted by the second electronic device, the resource request being transmitted by the second electronic device after acquiring the placeholder data and being configured for requesting the target compressed texture resource, and the target compressed texture resource being obtained by compressing the target application texture resource in the target compression format; and acquire the target compressed texture resource from the plurality of candidate compressed texture resources if the target compression format belongs to the plurality of candidate compression formats, and transmit the target compressed texture resource to the second electronic device, where the target compressed texture resource is configured for the second electronic device to render the target application
430: Receive the target compressed texture resource from the first electronic device, and render the target application based on the target compressed texture resource

FIG. 8

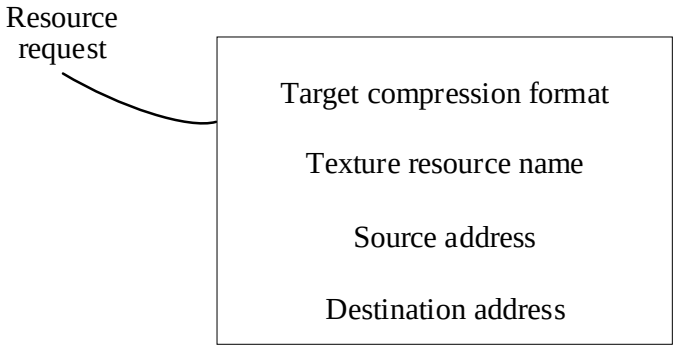
Resource request
Target compression format
Texture resource name
Source address
Destination address

FIG. 9

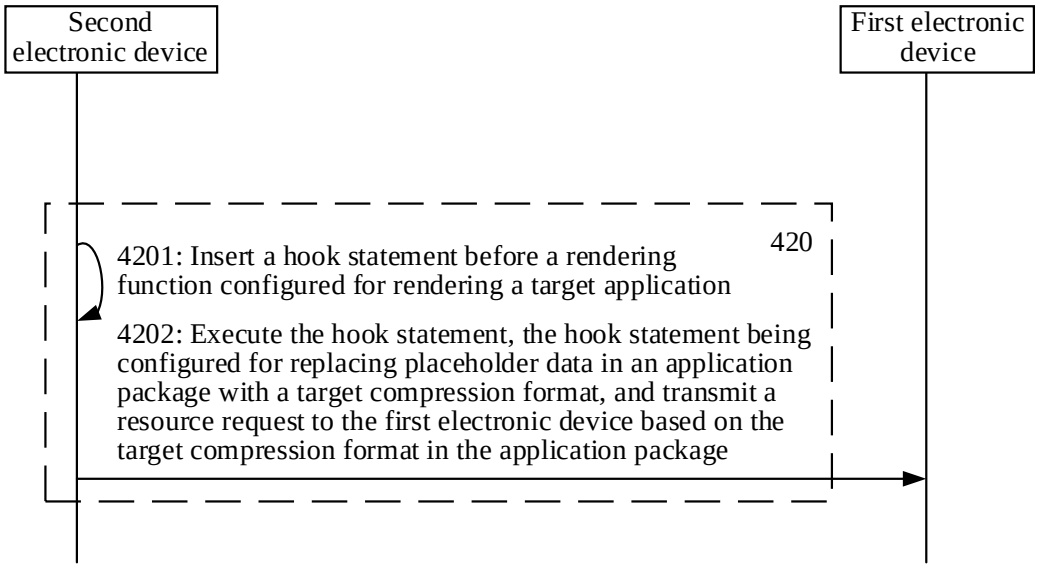
Second electronic device
First electronic device
420
4201: Insert a hook statement before a rendering function configured for rendering a target application
4202: Execute the hook statement, the hook statement being configured for replacing placeholder data in an application package with a target compression format, and transmit a resource request to the first electronic device based on the target compression format in the application package

FIG. 10

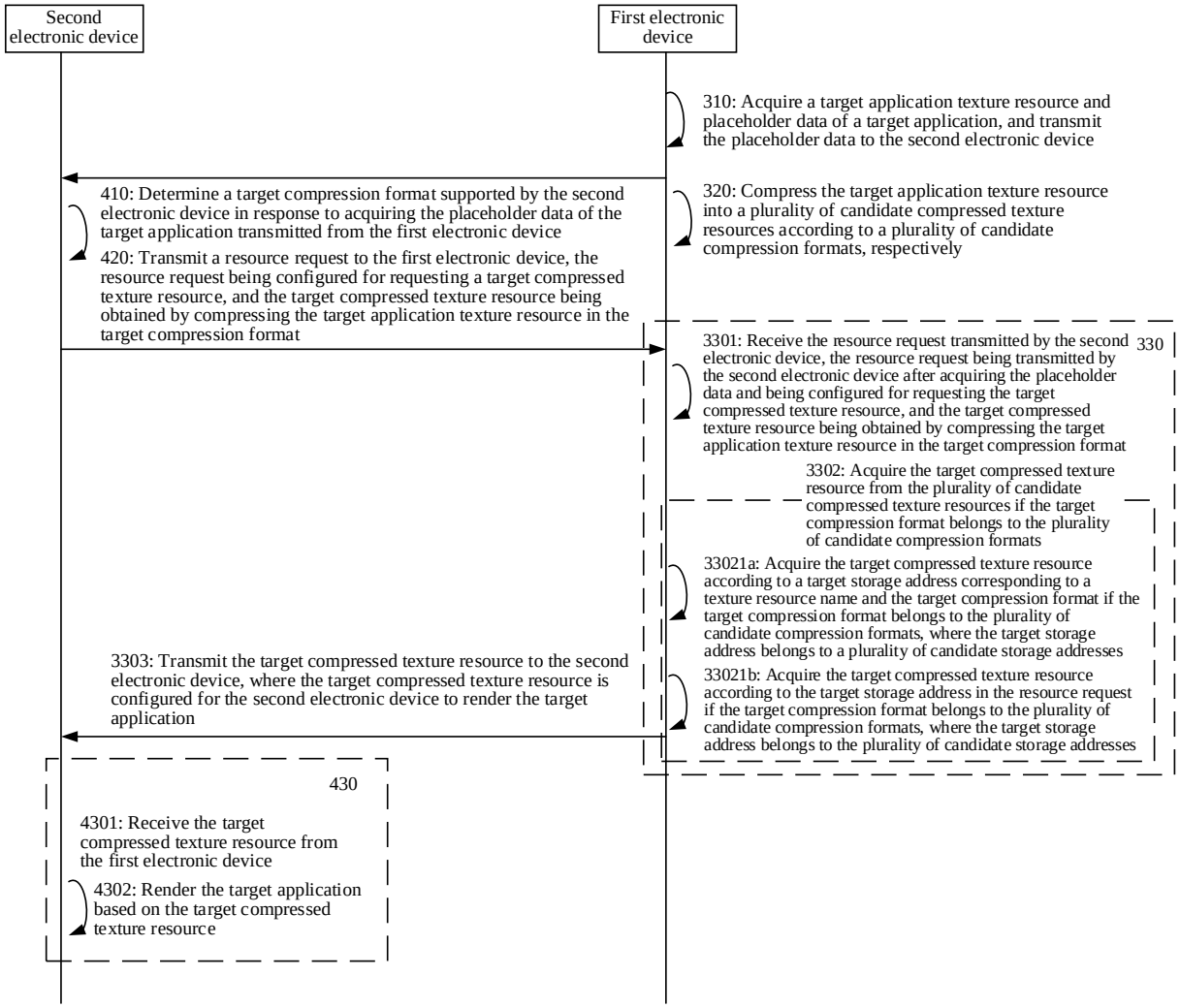
Second electronic device
First electronic device
310: Acquire a target application texture resource and placeholder data of a target application, and transmit the placeholder data to the second electronic device
410: Determine a target compression format supported by the second electronic device in response to acquiring the placeholder data of the target application transmitted from the first electronic device
320: Compress the target application texture resource into a plurality of candidate compressed texture resources according to a plurality of candidate compression formats, respectively
420: Transmit a resource request to the first electronic device, the resource request being configured for requesting a target compressed texture resource, and the target compressed texture resource being obtained by compressing the target application texture resource in the target compression format
330
3301: Receive the resource request transmitted by the second electronic device, the resource request being transmitted by the second electronic device after acquiring the placeholder data and being configured for requesting the target compressed texture resource, and the target compressed texture resource being obtained by compressing the target application texture resource in the target compression format
3302: Acquire the target compressed texture resource from the plurality of candidate compressed texture resources if the target compression format belongs to the plurality of candidate compression formats
33021a: Acquire the target compressed texture resource according to a target storage address corresponding to a texture resource name and the target compression format if the target compression format belongs to the plurality of candidate compression formats, where the target storage address belongs to a plurality of candidate storage addresses
33021b: Acquire the target compressed texture resource according to the target storage address in the resource request if the target compression format belongs to the plurality of candidate compression formats, where the target storage address belongs to the plurality of candidate storage addresses
3303: Transmit the target compressed texture resource to the second electronic device, where the target compressed texture resource is configured for the second electronic device to render the target application
430
4301: Receive the target compressed texture resource from the first electronic device
4302: Render the target application based on the target compressed texture resource

FIG. 11

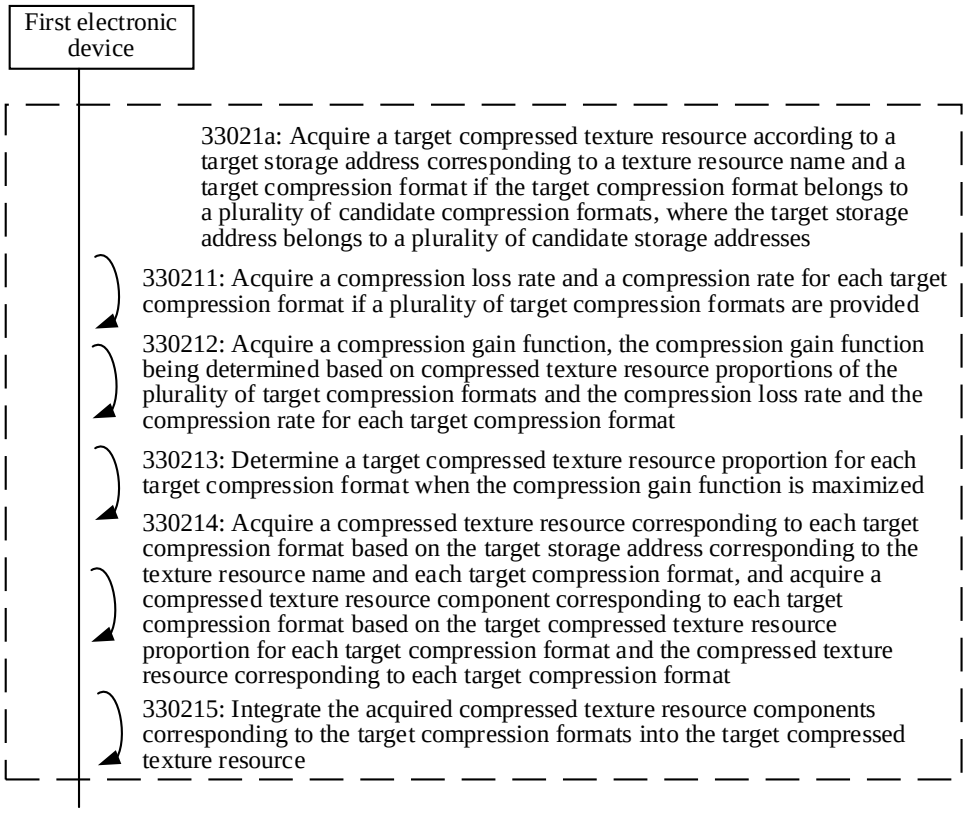
First electronic device
33021a: Acquire a target compressed texture resource according to a target storage address corresponding to a texture resource name and a target compression format if the target compression format belongs to a plurality of candidate compression formats, where the target storage address belongs to a plurality of candidate storage addresses
330211: Acquire a compression loss rate and a compression rate for each target compression format if a plurality of target compression formats are provided
330212: Acquire a compression gain function, the compression gain function being determined based on compressed texture resource proportions of the plurality of target compression formats and the compression loss rate and the compression rate for each target compression format
330213: Determine a target compressed texture resource proportion for each target compression format when the compression gain function is maximized
330214: Acquire a compressed texture resource corresponding to each target compression format based on the target storage address corresponding to the texture resource name and each target compression format, and acquire a compressed texture resource component corresponding to each target compression format based on the target compressed texture resource proportion for each target compression format and the compressed texture resource corresponding to each target compression format
330215: Integrate the acquired compressed texture resource components corresponding to the target compression formats into the target compressed texture resource

FIG. 12

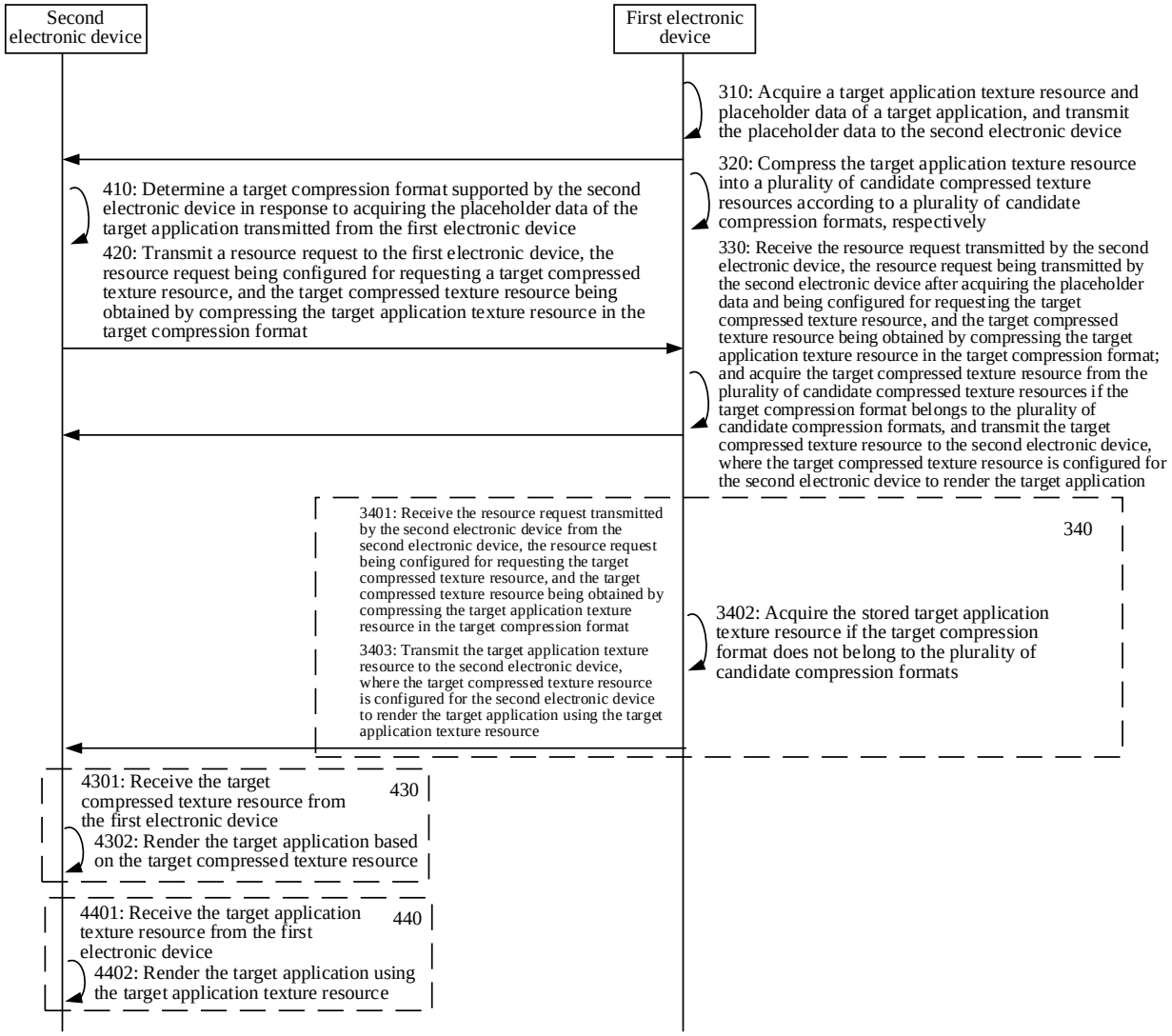
Second electronic device
First electronic device
310: Acquire a target application texture resource and placeholder data of a target application, and transmit the placeholder data to the second electronic device
320: Compress the target application texture resource into a plurality of candidate compressed texture resources according to a plurality of candidate compression formats, respectively
410: Determine a target compression format supported by the second electronic device in response to acquiring the placeholder data of the target application transmitted from the first electronic device
420: Transmit a resource request to the first electronic device, the resource request being configured for requesting a target compressed texture resource, and the target compressed texture resource being obtained by compressing the target application texture resource in the target compression format
330: Receive the resource request transmitted by the second electronic device, the resource request being transmitted by the second electronic device after acquiring the placeholder data and being configured for requesting the target compressed texture resource, and the target compressed texture resource being obtained by compressing the target application texture resource in the target compression format; and acquire the target compressed texture resource from the plurality of candidate compressed texture resources if the target compression format belongs to the plurality of candidate compression formats, and transmit the target compressed texture resource to the second electronic device, where the target compressed texture resource is configured for the second electronic device to render the target application
340
3401: Receive the resource request transmitted by the second electronic device from the second electronic device, the resource request being configured for requesting the target compressed texture resource, and the target compressed texture resource being obtained by compressing the target application texture resource in the target compression format
3402: Acquire the stored target application texture resource if the target compression format does not belong to the plurality of candidate compression formats
3403: Transmit the target application texture resource to the second electronic device, where the target compressed texture resource is configured for the second electronic device to render the target application using the target application texture resource
4301: Receive the target compressed texture resource from the first electronic device
430
4302: Render the target application based on the target compressed texture resource
4401: Receive the target application texture resource from the first electronic device
440
4402: Render the target application using the target application texture resource

FIG. 13

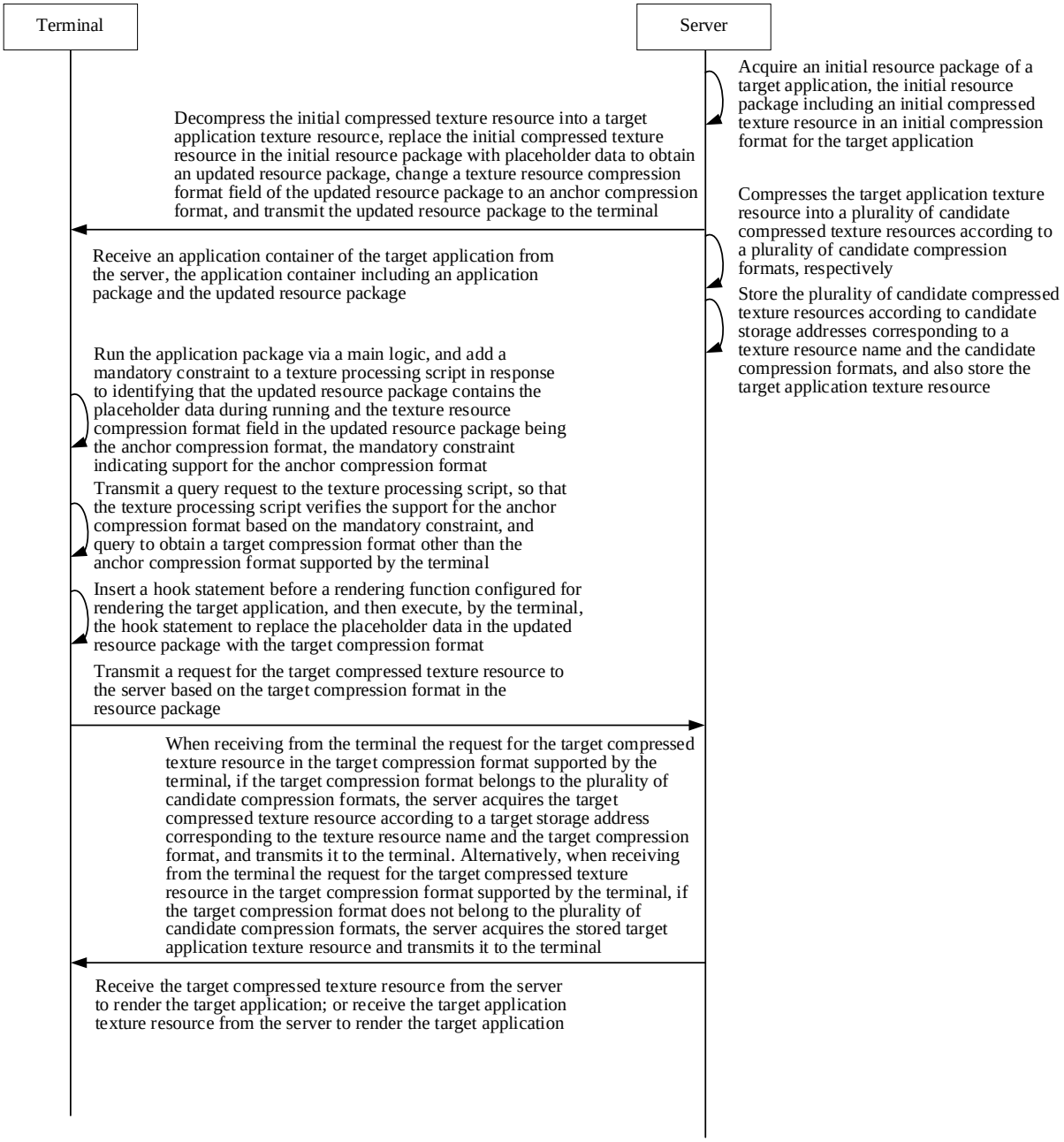
Terminal
Server
Acquire an initial resource package of a target application, the initial resource package including an initial compressed texture resource in an initial compression format for the target application
Decompress the initial compressed texture resource into a target application texture resource, replace the initial compressed texture resource in the initial resource package with placeholder data to obtain an updated resource package, change a texture resource compression format field of the updated resource package to an anchor compression format, and transmit the updated resource package to the terminal
Compresses the target application texture resource into a plurality of candidate compressed texture resources according to a plurality of candidate compression formats, respectively
Store the plurality of candidate compressed texture resources according to candidate storage addresses corresponding to a texture resource name and the candidate compression formats, and also store the target application texture resource
Receive an application container of the target application from the server, the application container including an application package and the updated resource package
Run the application package via a main logic, and add a mandatory constraint to a texture processing script in response to identifying that the updated resource package contains the placeholder data during running and the texture resource compression format field in the updated resource package being the anchor compression format, the mandatory constraint indicating support for the anchor compression format
Transmit a query request to the texture processing script, so that the texture processing script verifies the support for the anchor compression format based on the mandatory constraint, and query to obtain a target compression format other than the anchor compression format supported by the terminal
Insert a hook statement before a rendering function configured for rendering the target application, and then execute, by the terminal, the hook statement to replace the placeholder data in the updated resource package with the target compression format
Transmit a request for the target compressed texture resource to the server based on the target compression format in the resource package
When receiving from the terminal the request for the target compressed texture resource in the target compression format supported by the terminal, if the target compression format belongs to the plurality of candidate compression formats, the server acquires the target compressed texture resource according to a target storage address corresponding to the texture resource name and the target compression format, and transmits it to the terminal. Alternatively, when receiving from the terminal the request for the target compressed texture resource in the target compression format supported by the terminal, if the target compression format does not belong to the plurality of candidate compression formats, the server acquires the stored target application texture resource and transmits it to the terminal
Receive the target compressed texture resource from the server to render the target application; or receive the target application texture resource from the server to render the target application

FIG. 14

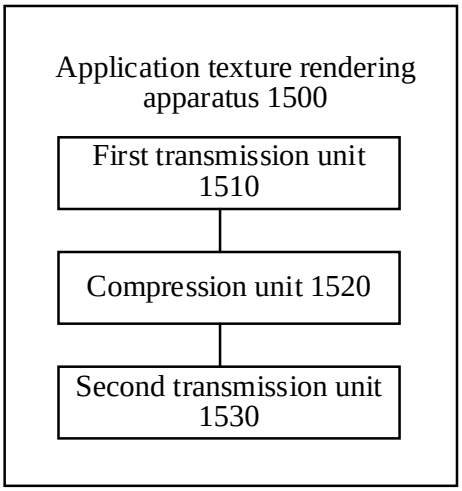
Application texture rendering apparatus 1500
First transmission unit 1510
Compression unit 1520
Second transmission unit 1530

FIG. 15

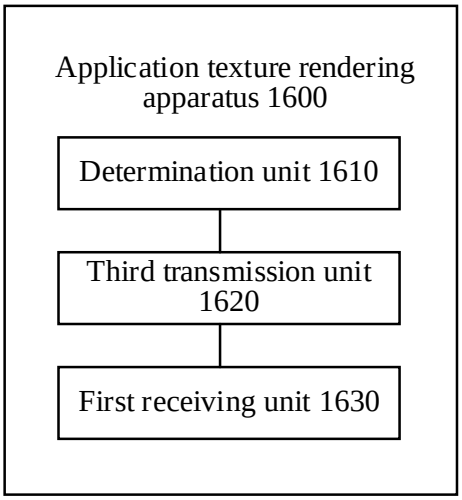
Application texture rendering apparatus 1600
Determination unit 1610
Third transmission unit 1620
First receiving unit 1630

FIG. 16

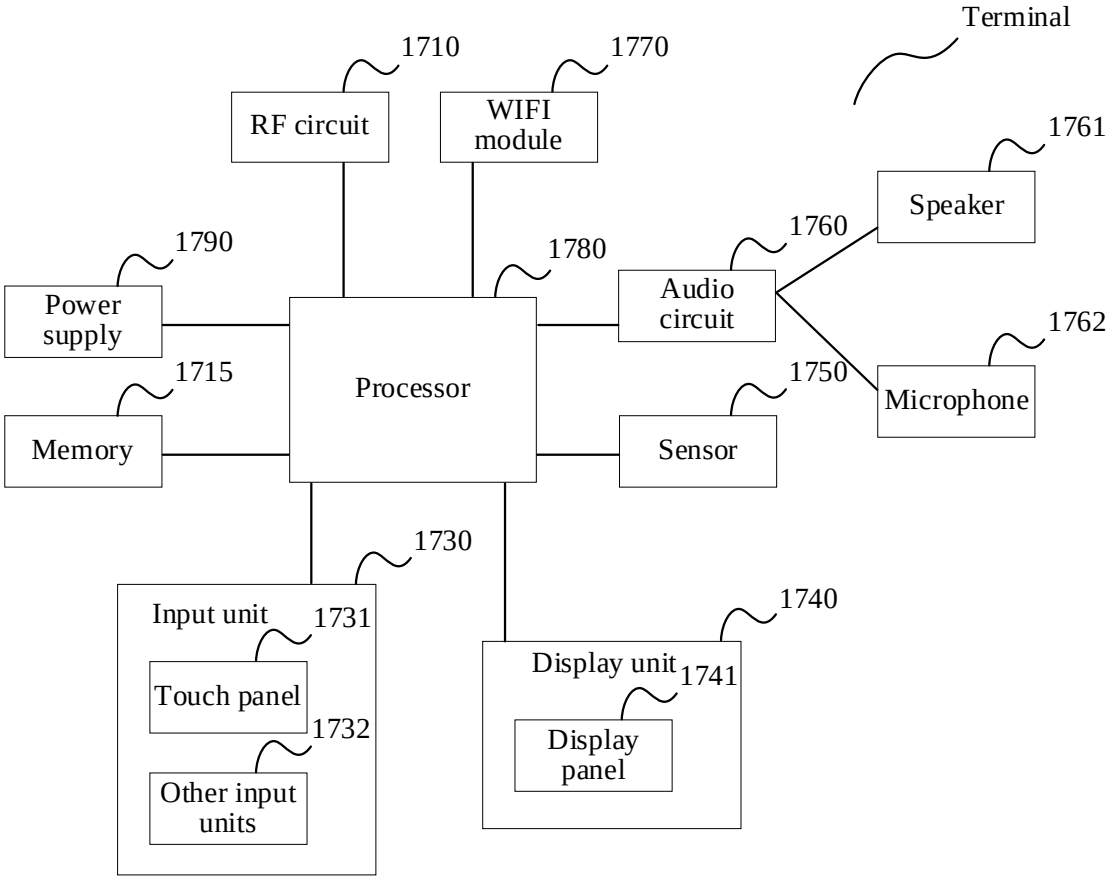
Terminal
1710
RF circuit
1770
WIFI module
1761
Speaker
1790
Power supply
1780
1760
Audio circuit
1762
Microphone
1715
Memory
Processor
1750
Sensor
1730
Input unit
1731
Touch panel
1732
Other input units
1740
Display unit
1741
Display panel

FIG. 17

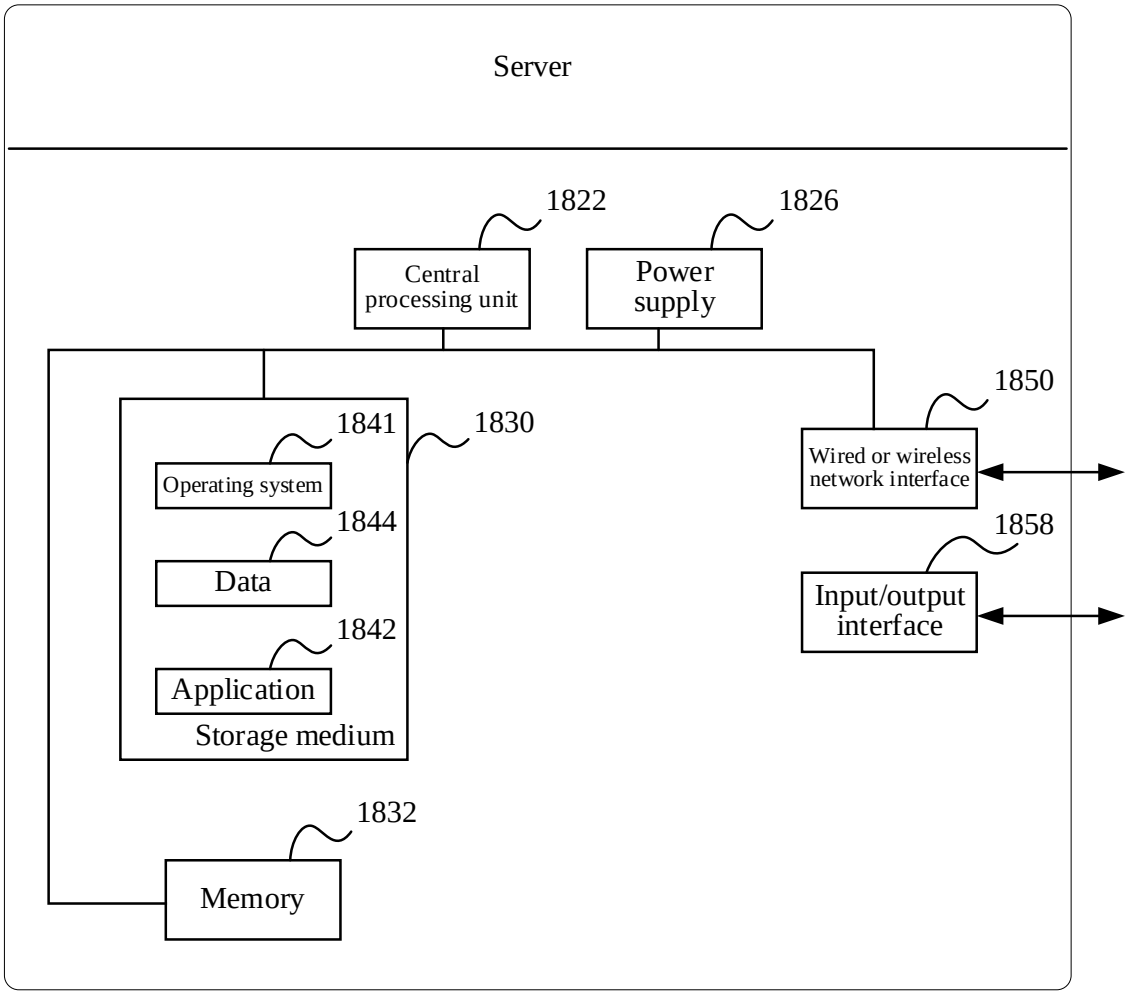
Server
1822
1826
Central processing unit
Power supply
1850
1841
1830
Operating system
Wired or wireless network interface
1844
1858
Data
Input/output interface
1842
Application
Storage medium
1832
Memory

FIG. 18