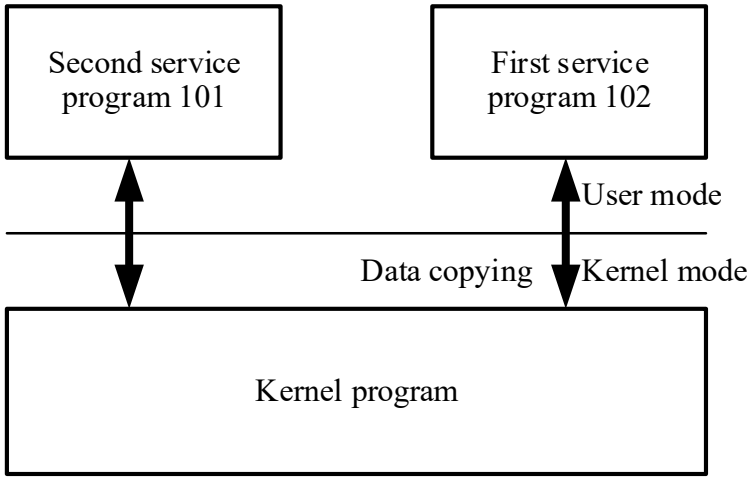

Second service program 101
First service program 102
User mode
Data copying
Kernel mode
Kernel program

FIG. 1

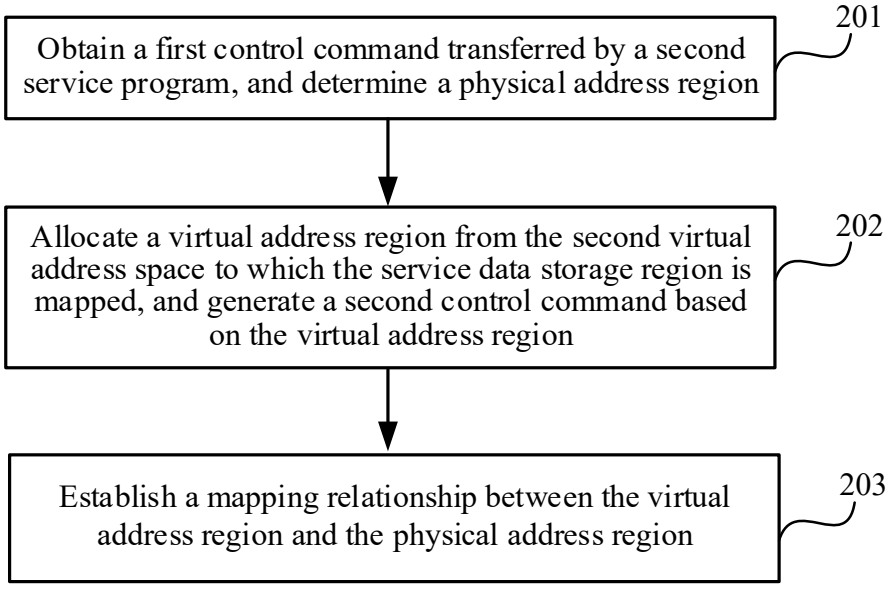

Obtain a first control command transferred by a second service program, and determine a physical address region
201
Allocate a virtual address region from the second virtual address space to which the service data storage region is mapped, and generate a second control command based on the virtual address region
202
Establish a mapping relationship between the virtual address region and the physical address region
203

FIG. 2

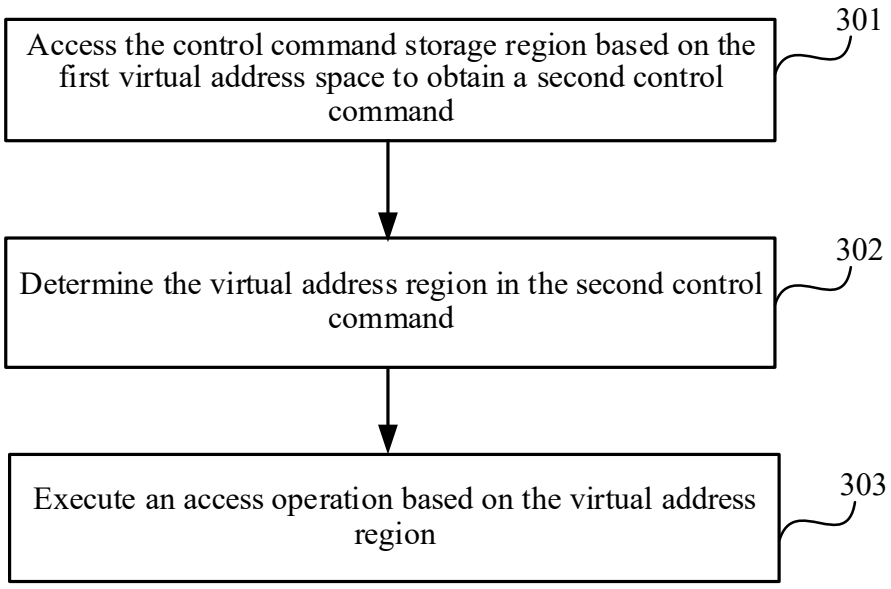

Access the control command storage region based on the first virtual address space to obtain a second control command
301
Determine the virtual address region in the second control command
302
Execute an access operation based on the virtual address region
303

FIG. 3

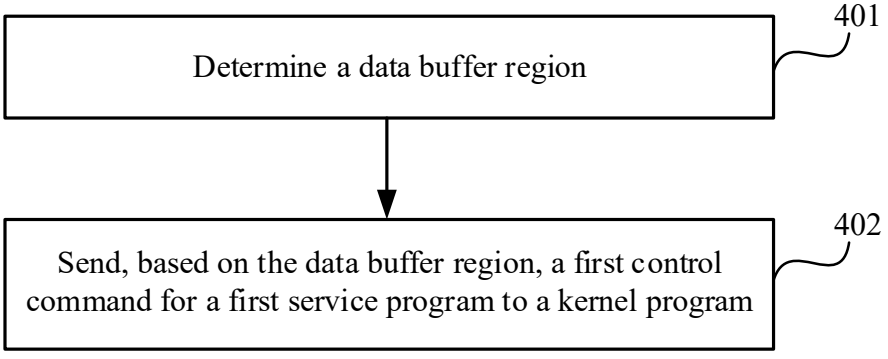

Determine a data buffer region
401
Send, based on the data buffer region, a first control command for a first service program to a kernel program
402

FIG. 4

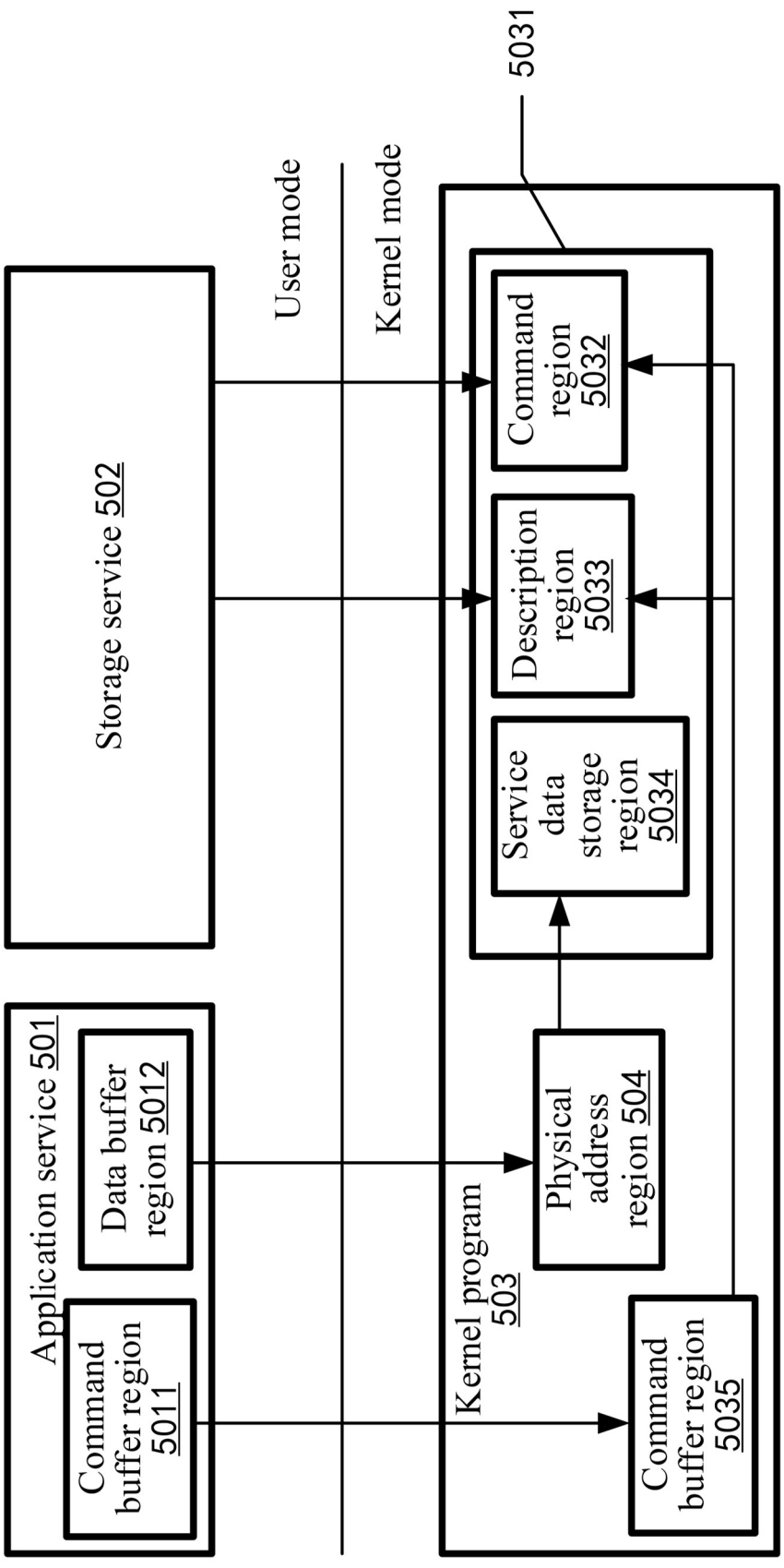

Application service 501
Command buffer region 5011
Data buffer region 5012
Storage service 502
User mode
Kernel mode
5031
Command region 5032
Description region 5033
Service data storage region 5034
Kernel program 503
Physical address region 504
Command buffer region 5035

FIG. 5

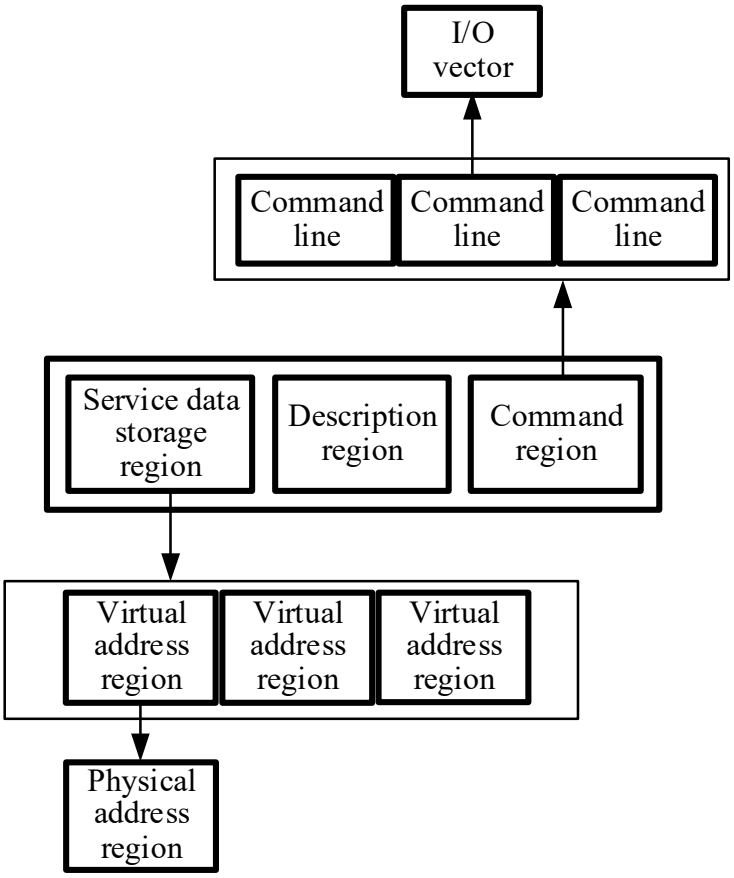

I/O vector
Command line
Command line
Command line
Service data storage region
Description region
Command region
Virtual address region
Virtual address region
Virtual address region
Physical address region

FIG. 6

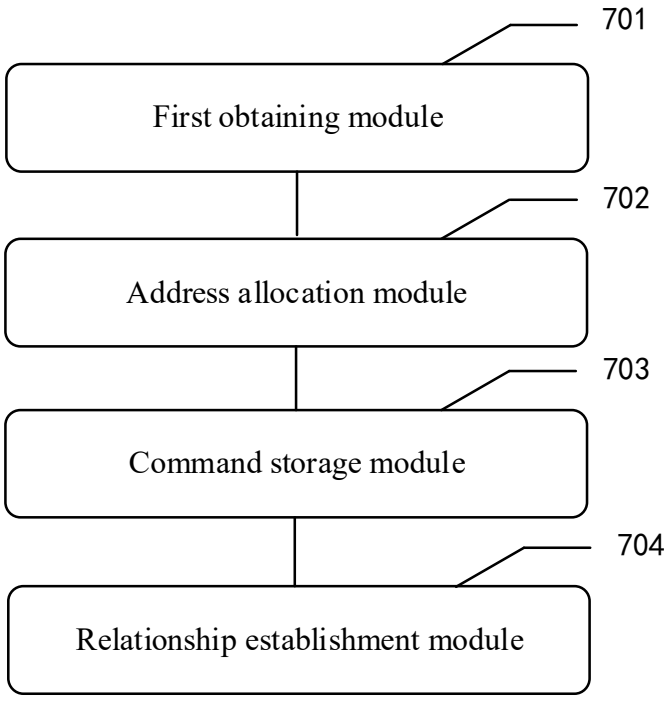

701
First obtaining module
702
Address allocation module
703
Command storage module
704
Relationship establishment module

FIG. 7

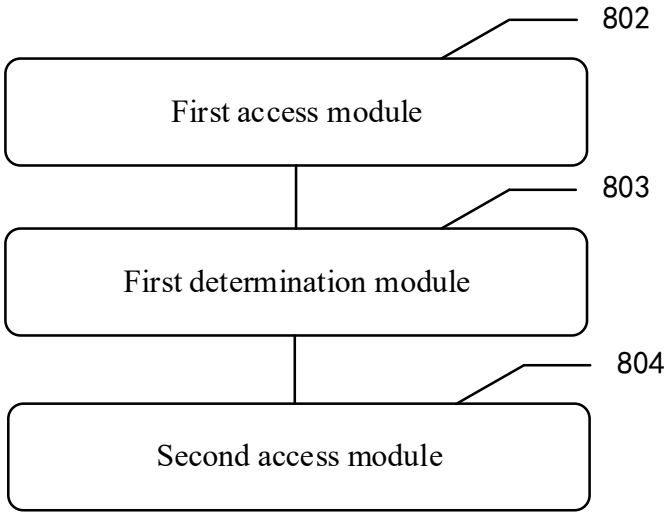


FIG. 8

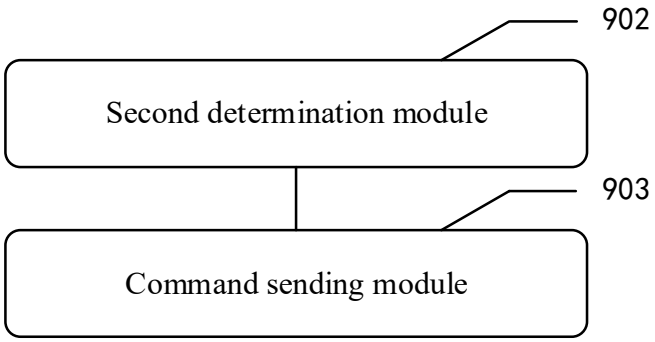


FIG. 9

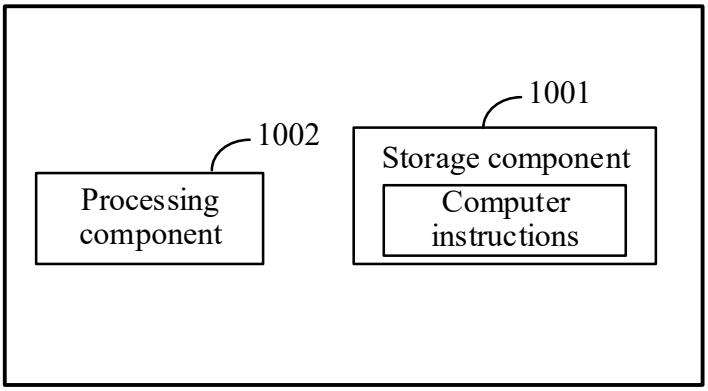


FIG. 10