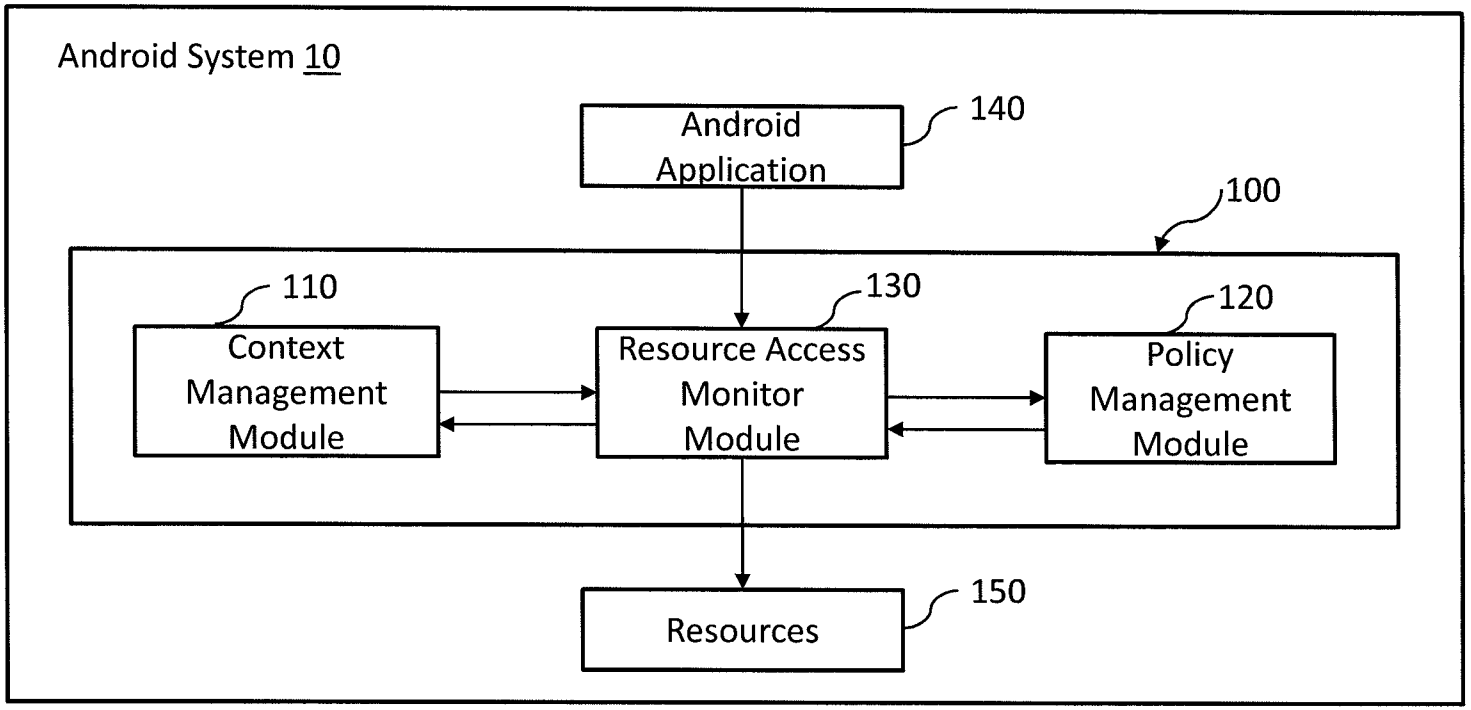
Android System 10
Android Application
140
100
110
Context Management Module
130
Resource Access Monitor Module
120
Policy Management Module
Resources
150

Figure 1(a)

Application	Context
App 1	CON 1
App 2	CON 2

Figure 1(b)

Application	Context	System View
App 1	CON 1	V1
App 1	CON 2	V2
App 2	CON 1	V3
App 2	CON 2	V4

Figure 1(c)

System View	Policy
V1	P1
V2	P2
V3	P3
V4	P4

Figure 1(d)

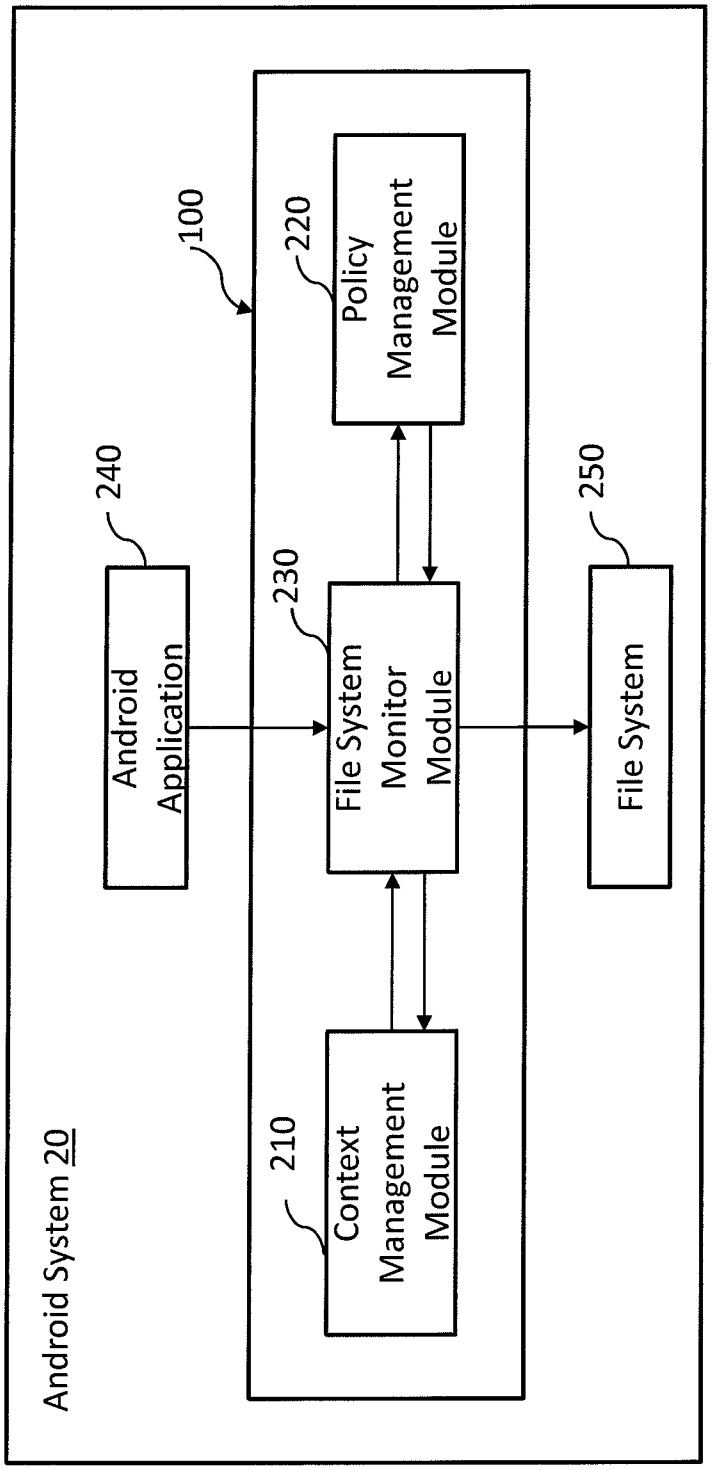
Android System 20
100
210
Context Management Module
220
Policy Management Module
230
File System Monitor Module
240
Android Application
250
File System

Figure 2 (a)

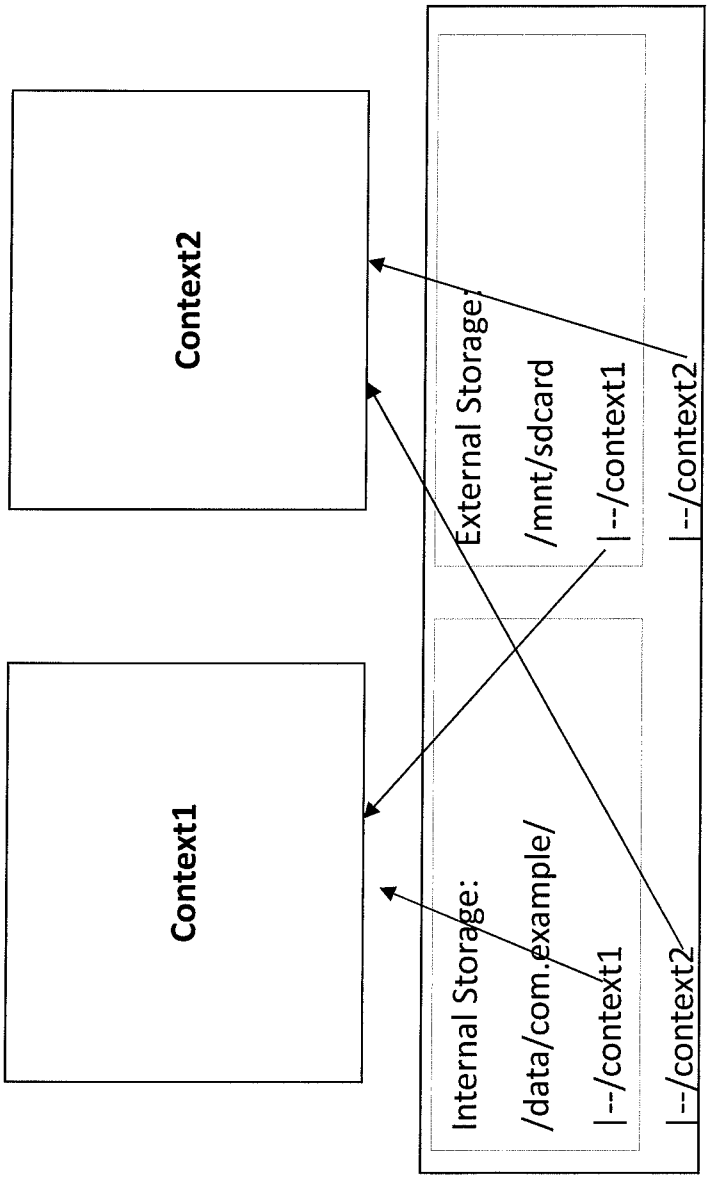
Context2
Context1
External Storage:
/mnt/sdcard
|--/context1
|--/context2
Internal Storage:
/data/com.example/
|--/context1
|--/context2

Figure 2 (b)

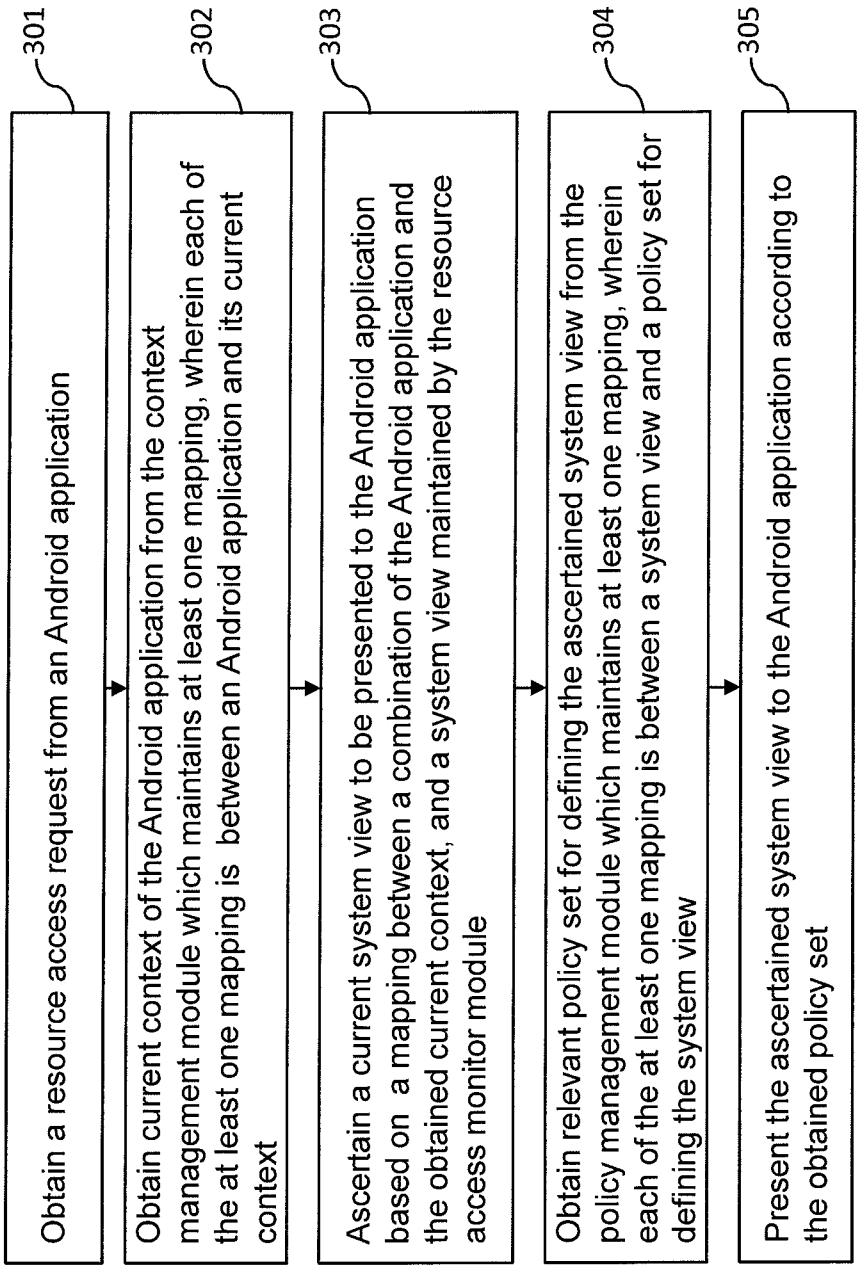
301
Obtain a resource access request from an Android application
302
Obtain current context of the Android application from the context management module which maintains at least one mapping, wherein each of the at least one mapping is between an Android application and its current context
303
Ascertain a current system view to be presented to the Android application based on a mapping between a combination of the Android application and the obtained current context, and a system view maintained by the resource access monitor module
304
Obtain relevant policy set for defining the ascertained system view from the policy management module which maintains at least one mapping, wherein each of the at least one mapping is between a system view and a policy set for defining the system view
305
Present the ascertained system view to the Android application according to the obtained policy set

Figure 3

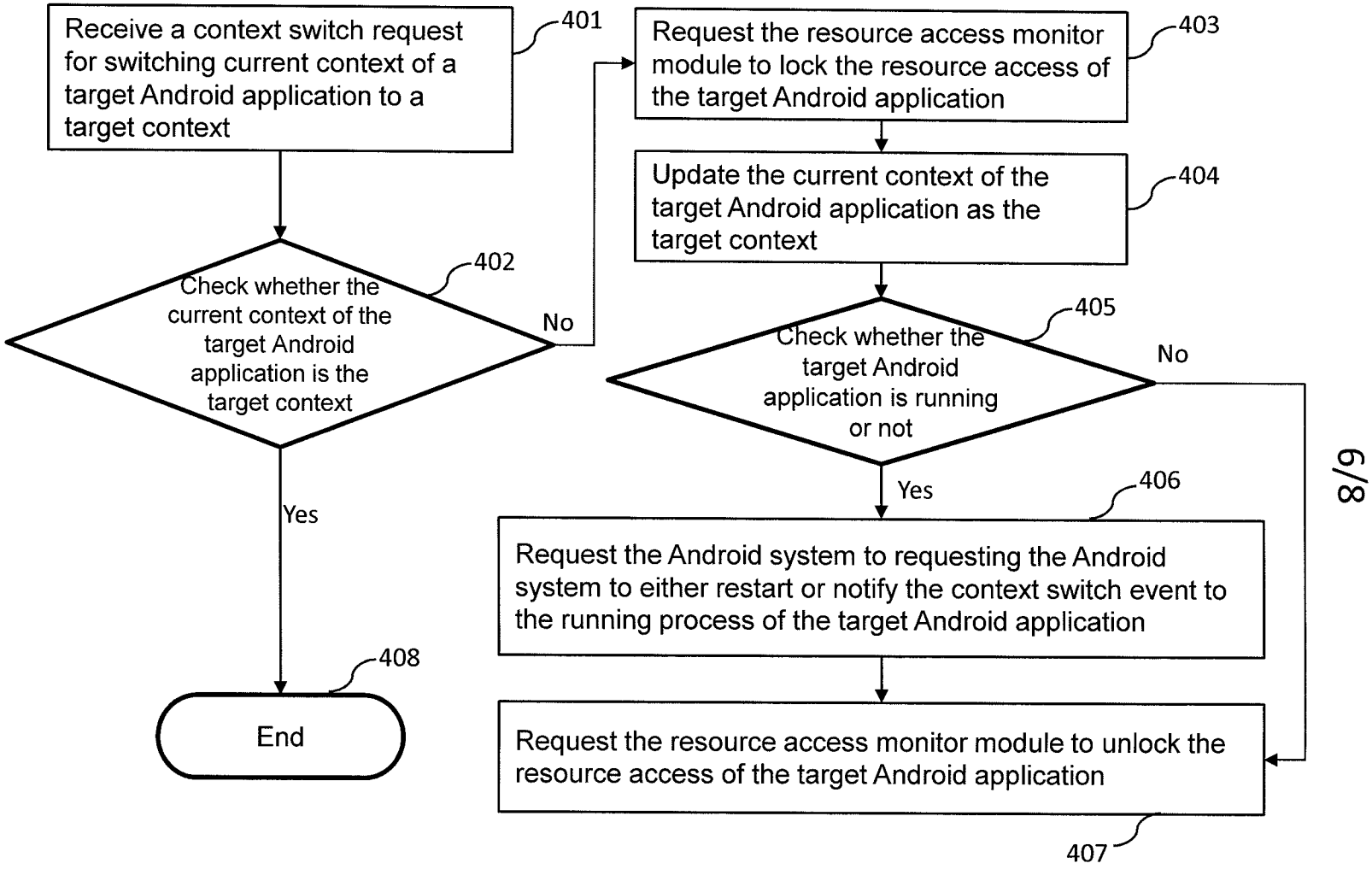
Receive a context switch request for switching current context of a target Android application to a target context
401
Check whether the current context of the target Android application is the target context
402
No
Yes
End
408
Request the resource access monitor module to lock the resource access of the target Android application
403
Update the current context of the target Android application as the target context
404
Check whether the target Android application is running or not
405
No
Yes
Request the Android system to requesting the Android system to either restart or notify the context switch event to the running process of the target Android application
406
Request the resource access monitor module to unlock the resource access of the target Android application
407

Figure 4

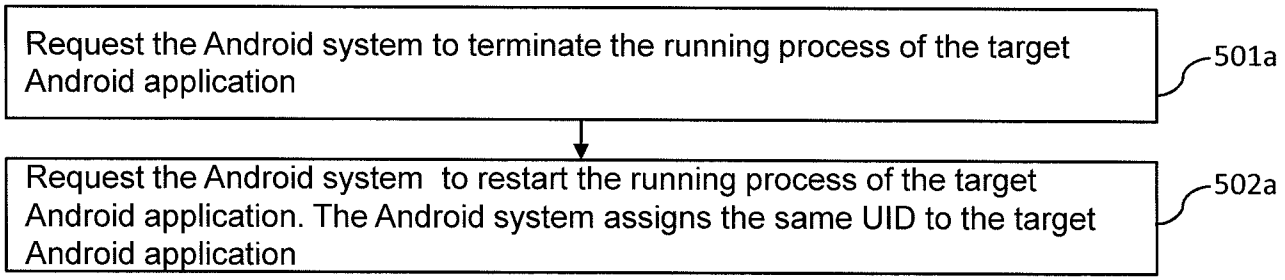

Figure 5 (a)

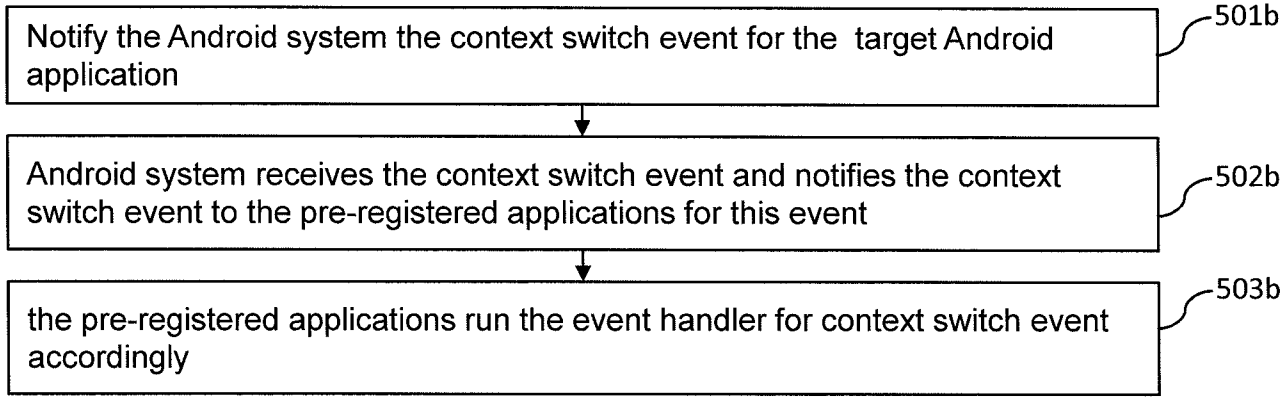

Figure 5 (b)

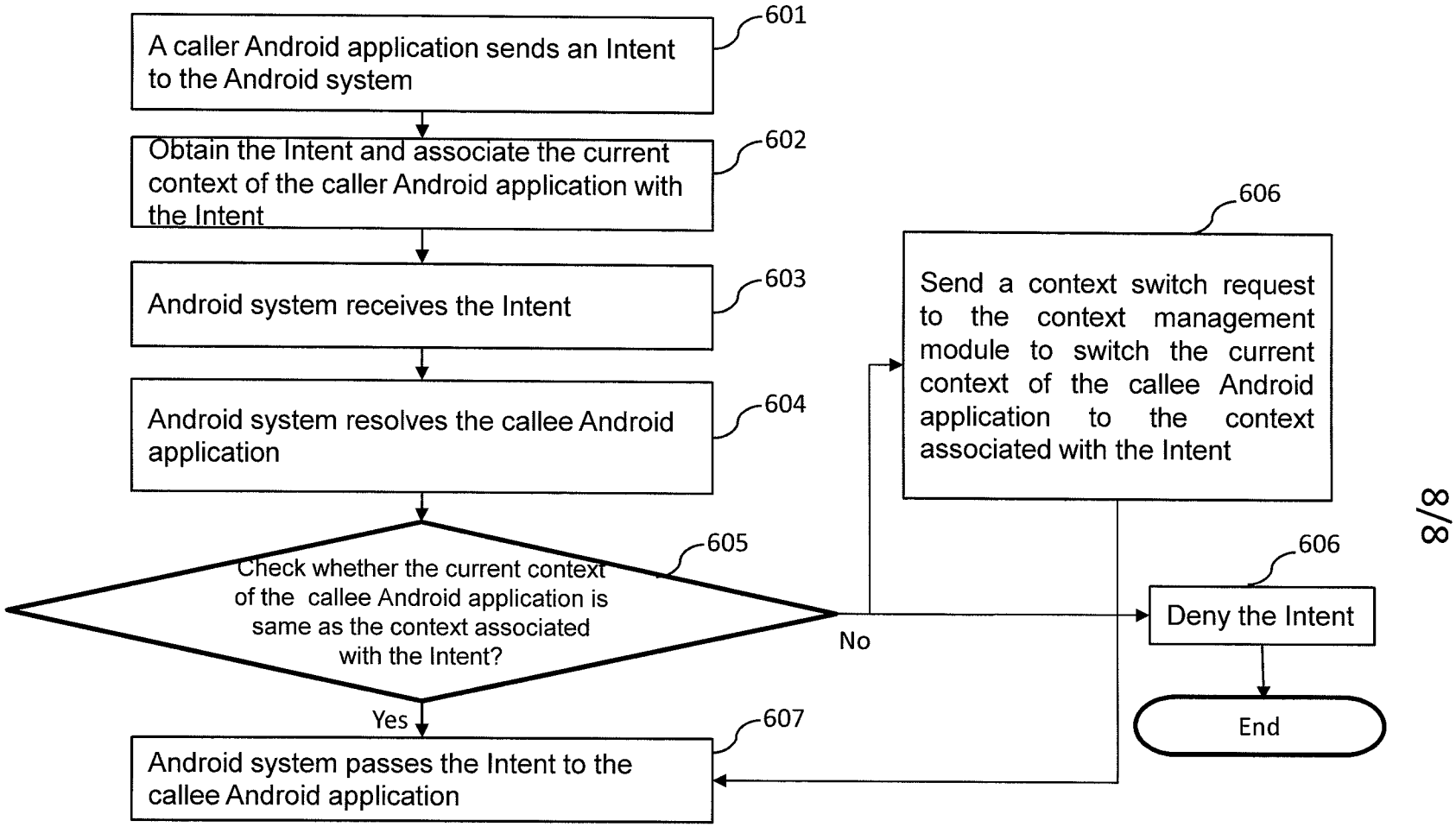
A caller Android application sends an Intent to the Android system
601
Obtain the Intent and associate the current context of the caller Android application with the Intent
602
Android system receives the Intent
603
Android system resolves the callee Android application
604
Check whether the current context of the callee Android application is same as the context associated with the Intent?
605
No
Yes
Send a context switch request to the context management module to switch the current context of the callee Android application to the context associated with the Intent
606
Deny the Intent
606
End
Android system passes the Intent to the callee Android application
607

Figure 6