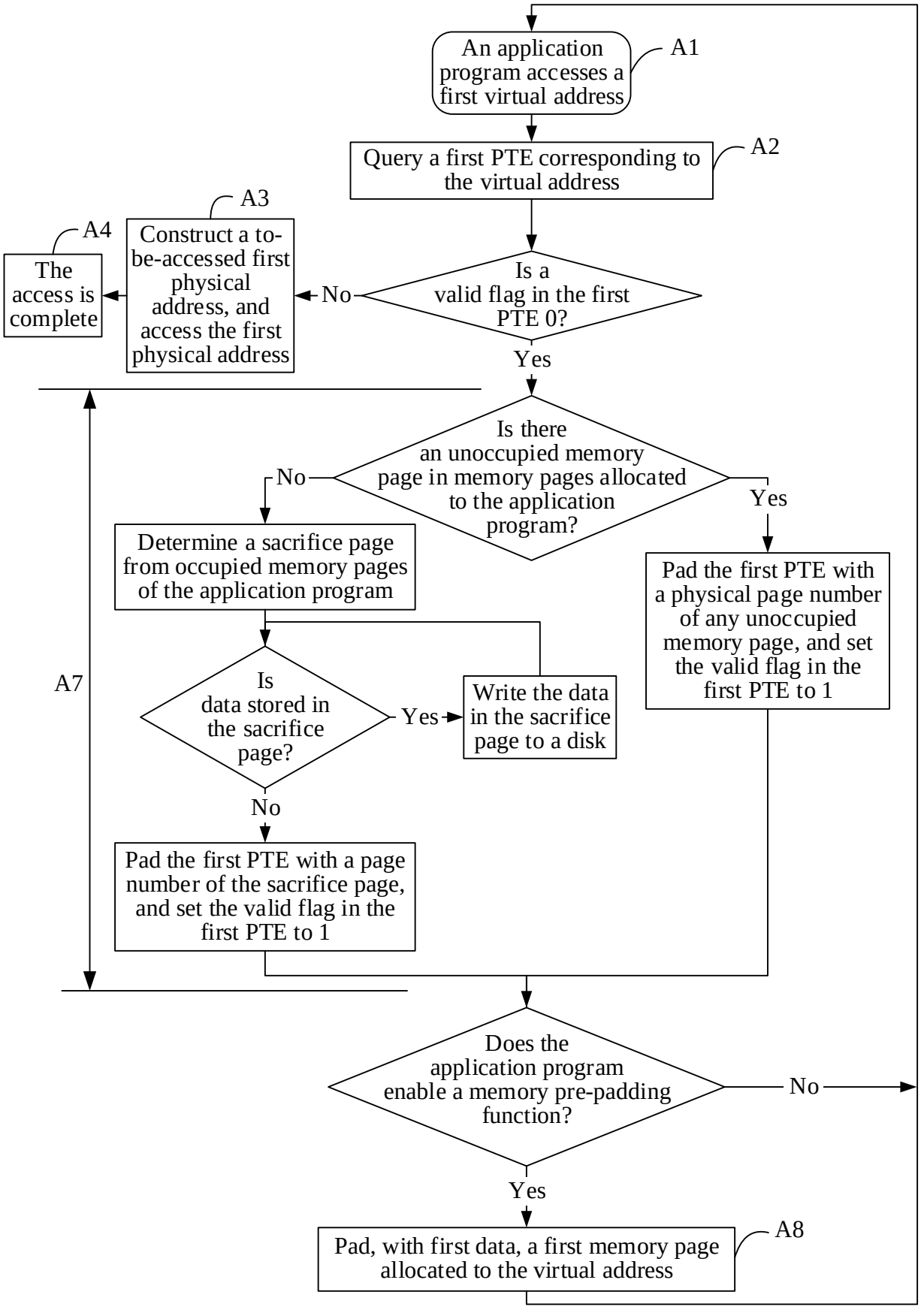

An application program accesses a first virtual address
A1
Query a first PTE corresponding to the virtual address
A2
Is a valid flag in the first PTE 0?
No
A3
Construct a to-be-accessed first physical address, and access the first physical address
A4
The access is complete
Yes
Is there an unoccupied memory page in memory pages allocated to the application program?
No
Yes
Determine a sacrifice page from occupied memory pages of the application program
Pad the first PTE with a physical page number of any unoccupied memory page, and set the valid flag in the first PTE to 1
A7
Is data stored in the sacrifice page?
Yes
Write the data in the sacrifice page to a disk
No
Pad the first PTE with a page number of the sacrifice page, and set the valid flag in the first PTE to 1
Does the application program enable a memory pre-padding function?
No
Yes
Pad, with first data, a first memory page allocated to the virtual address
A8

FIG. 4