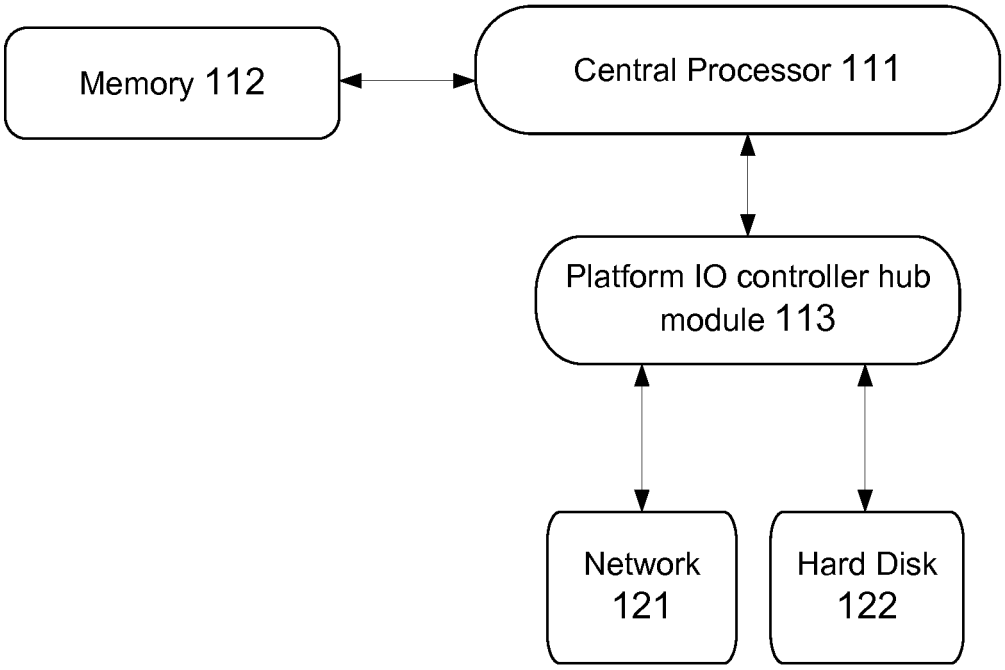
Memory 112
Central Processor 111
Platform IO controller hub module 113
Network 121
Hard Disk 122

FIG. 1A

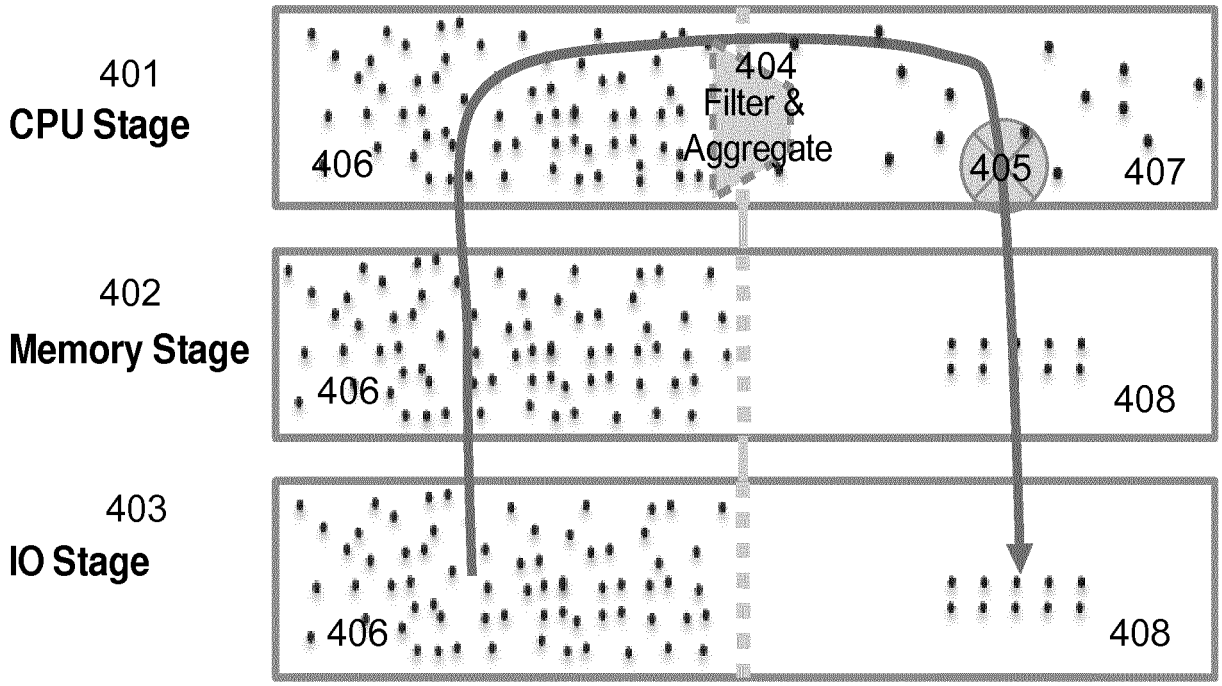
401
CPU Stage
404
Filter &
Aggregate
406
405
407
402
Memory Stage
406
408
403
IO Stage
406
408

FIG. 1B

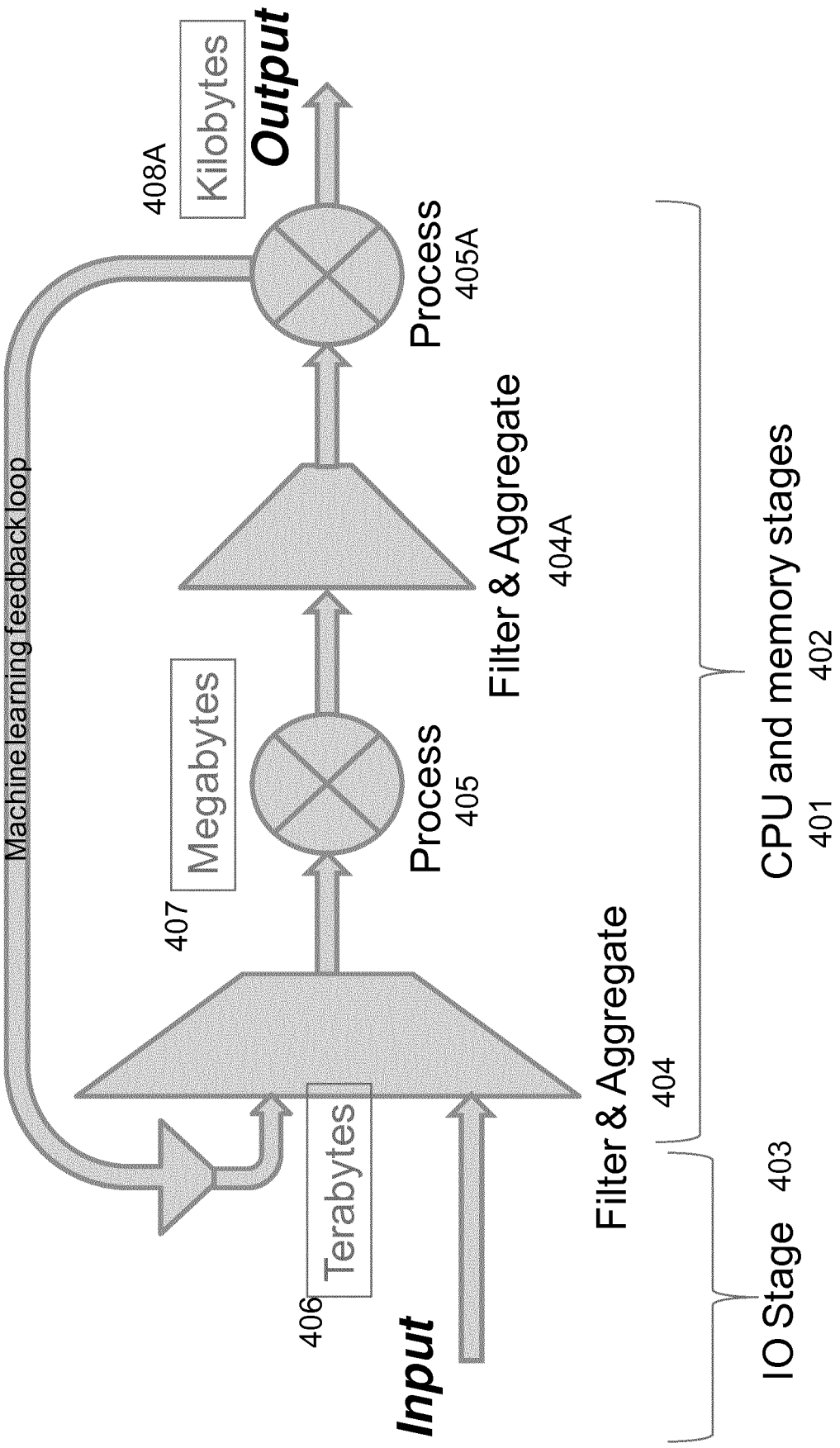
Machine learning feedback loop
Input
406
Terabytes
Filter & Aggregate
404
407
Megabytes
Process
405
Filter & Aggregate
404A
Process
405A
408A
Kilobytes
Output
IO Stage
403
CPU and memory stages
402
401

FIG. 1C

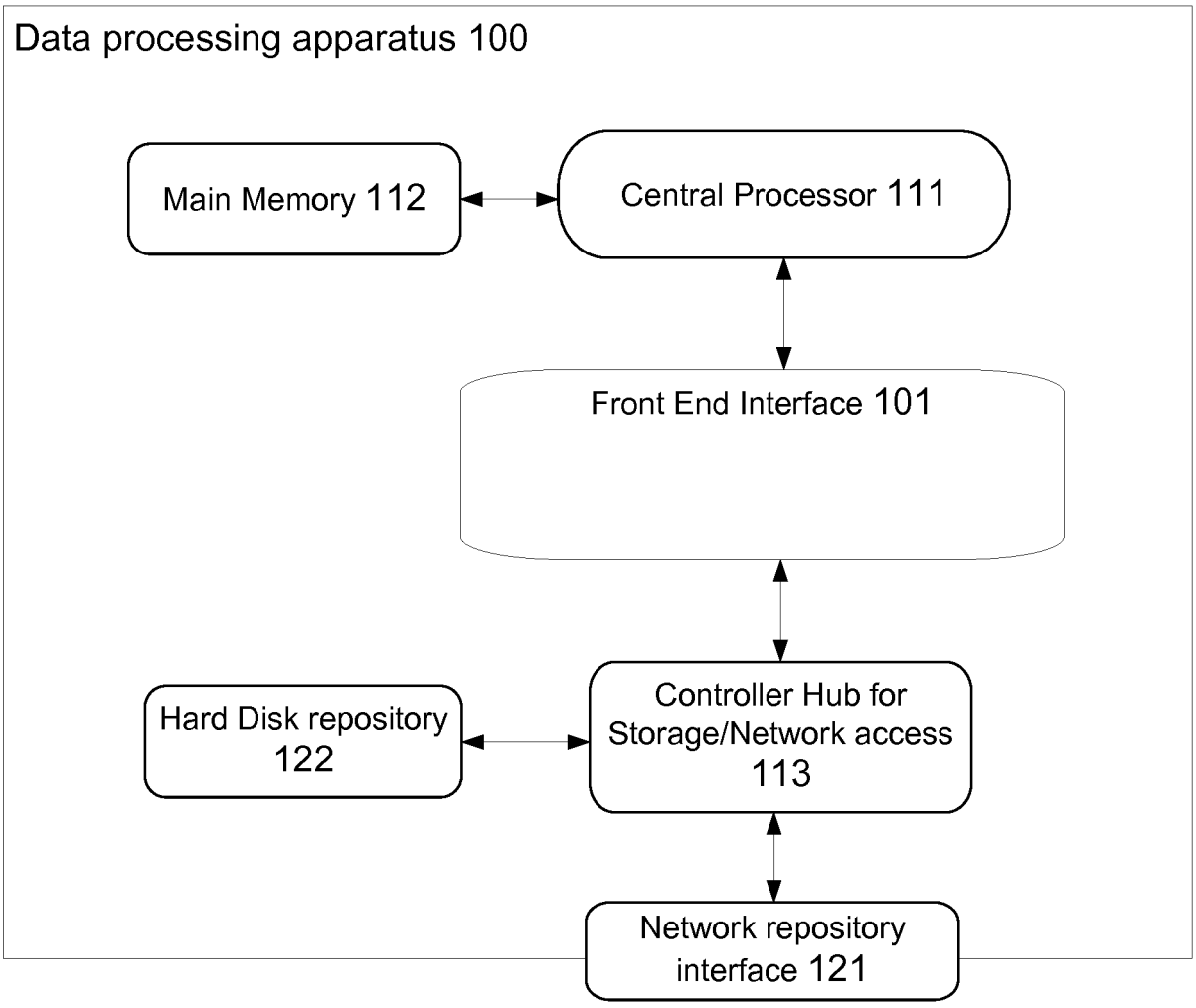
Data processing apparatus 100
Main Memory 112
Central Processor 111
Front End Interface 101
Hard Disk repository 122
Controller Hub for Storage/Network access 113
Network repository interface 121

FIG. 2A

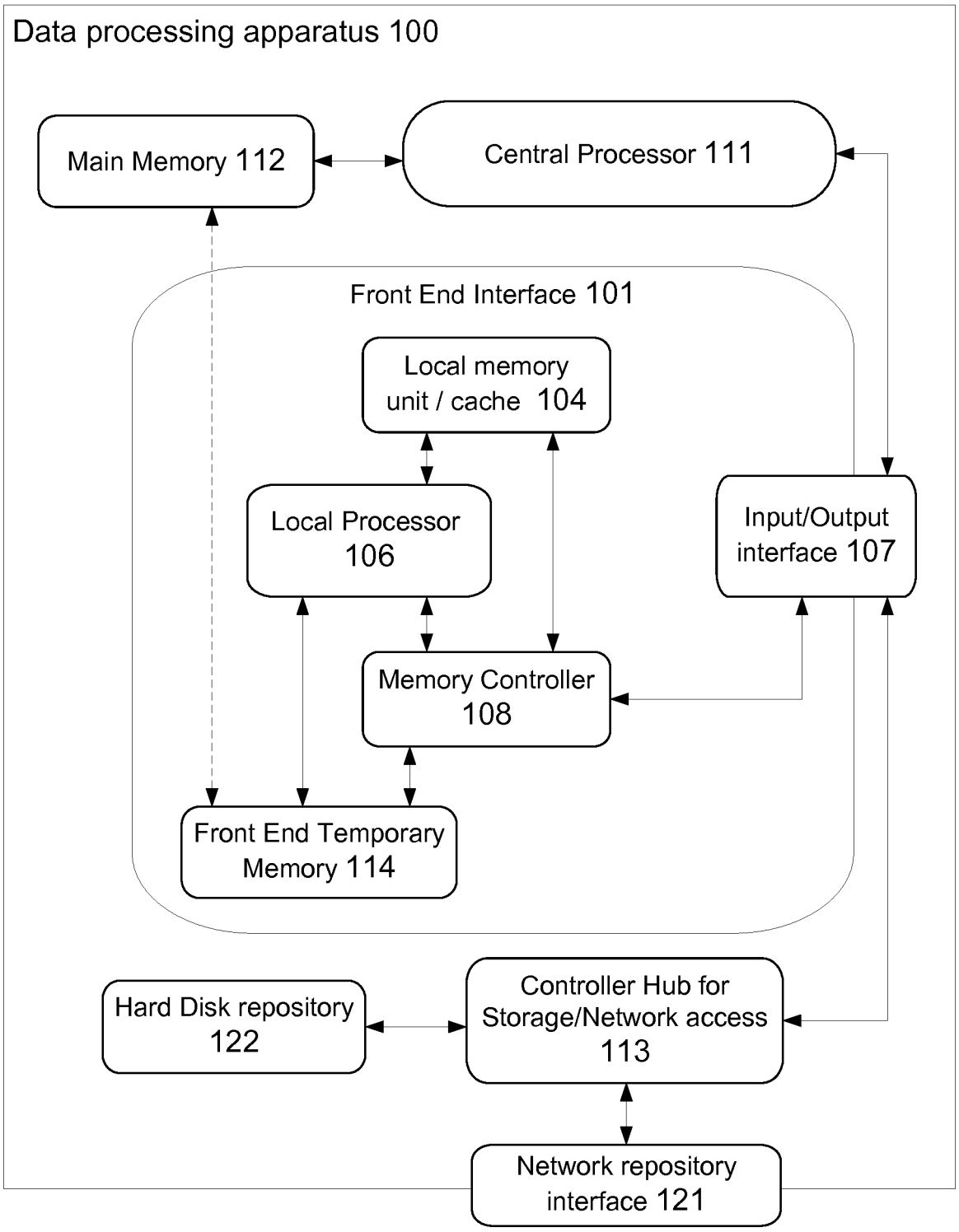
Data processing apparatus 100
Main Memory 112
Central Processor 111
Front End Interface 101
Local memory unit / cache 104
Local Processor 106
Input/Output interface 107
Memory Controller 108
Front End Temporary Memory 114
Hard Disk repository 122
Controller Hub for Storage/Network access 113
Network repository interface 121

FIG. 2B

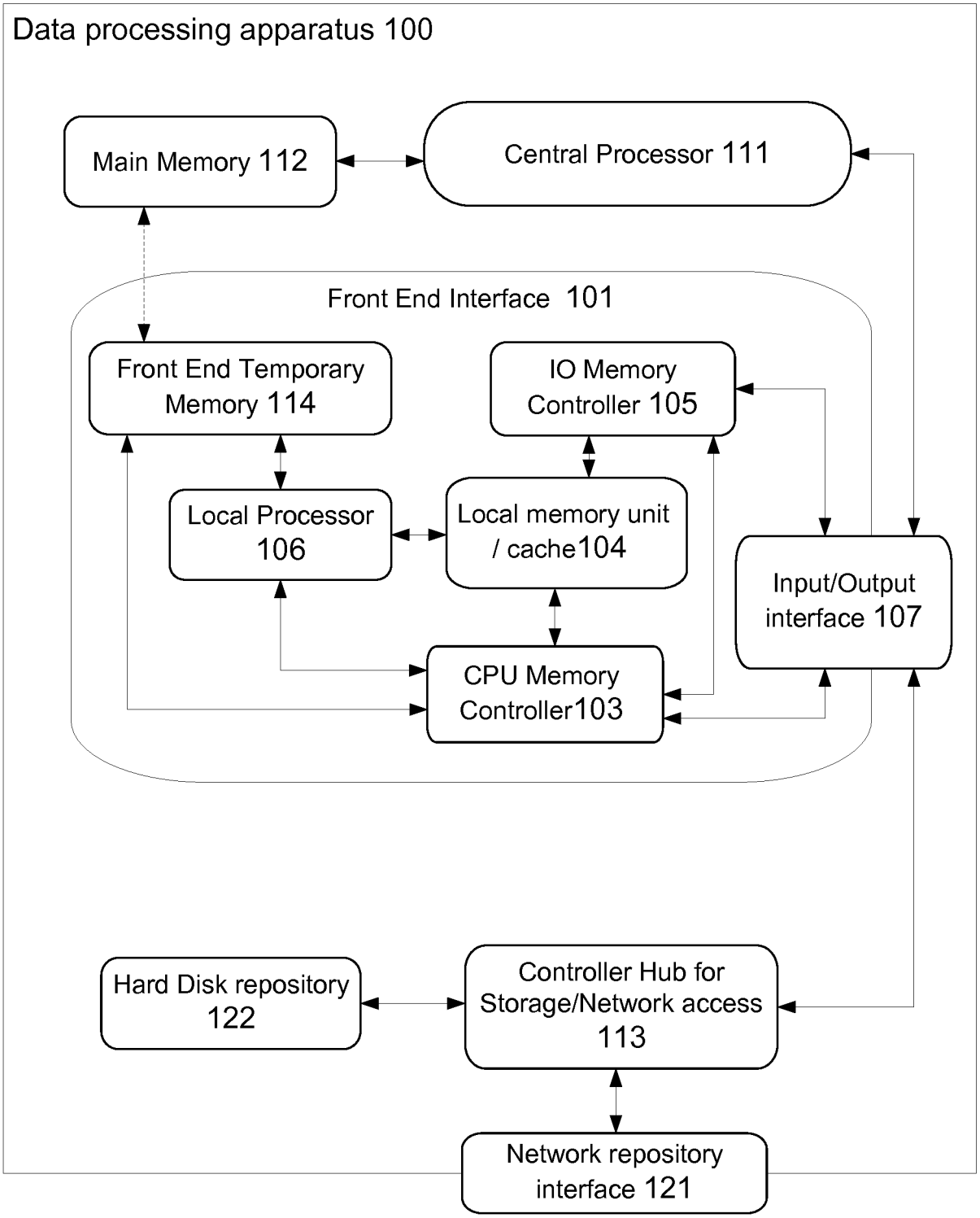
Data processing apparatus 100
Main Memory 112
Central Processor 111
Front End Interface 101
Front End Temporary Memory 114
IO Memory Controller 105
Local Processor 106
Local memory unit / cache104
Input/Output interface 107
CPU Memory Controller103
Hard Disk repository 122
Controller Hub for Storage/Network access 113
Network repository interface 121

FIG. 2C

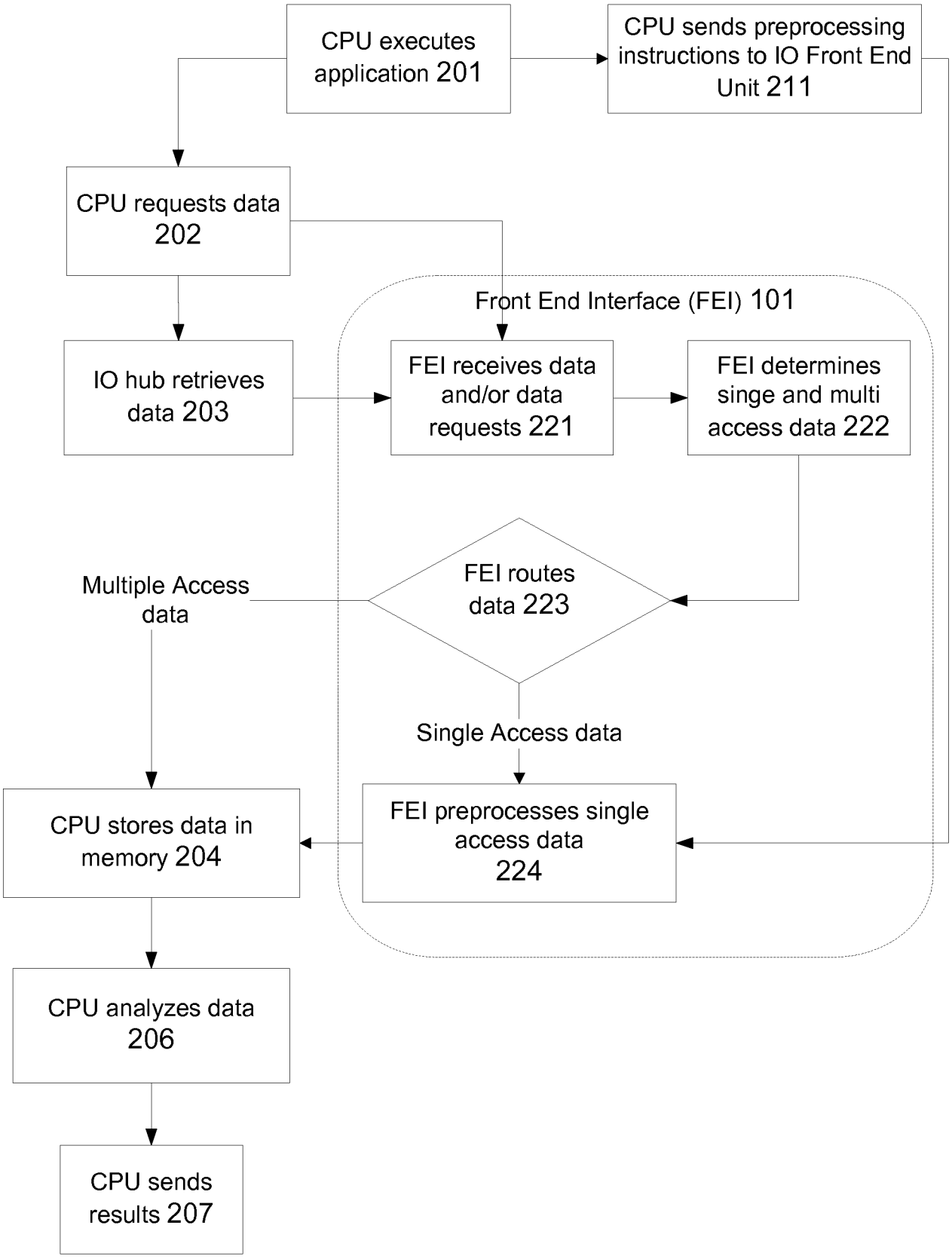
CPU executes application 201
CPU sends preprocessing instructions to IO Front End Unit 211
CPU requests data 202
Front End Interface (FEI) 101
IO hub retrieves data 203
FEI receives data and/or data requests 221
FEI determines singe and multi access data 222
FEI routes data 223
Multiple Access data
Single Access data
FEI preprocesses single access data 224
CPU stores data in memory 204
CPU analyzes data 206
CPU sends results 207

FIG. 3

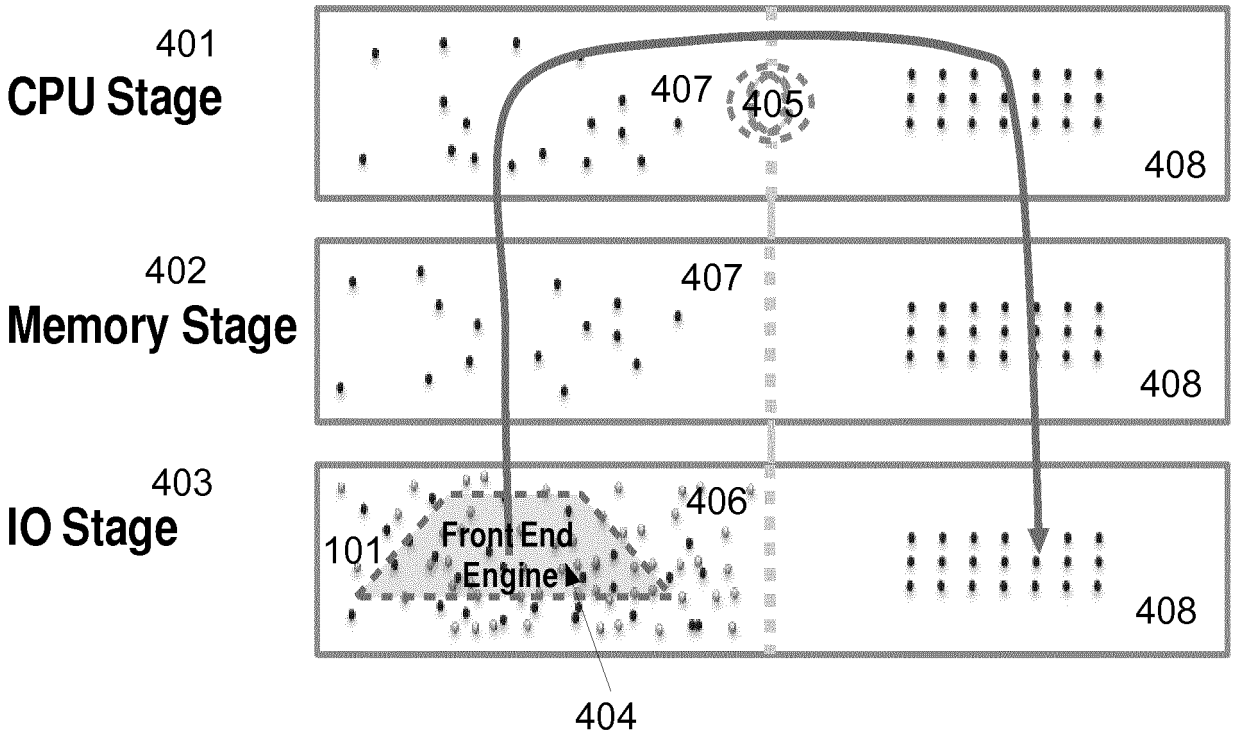
401
CPU Stage
407
405
408
402
Memory Stage
407
408
403
IO Stage
406
101
Front End
Engine
408
404

FIG. 4