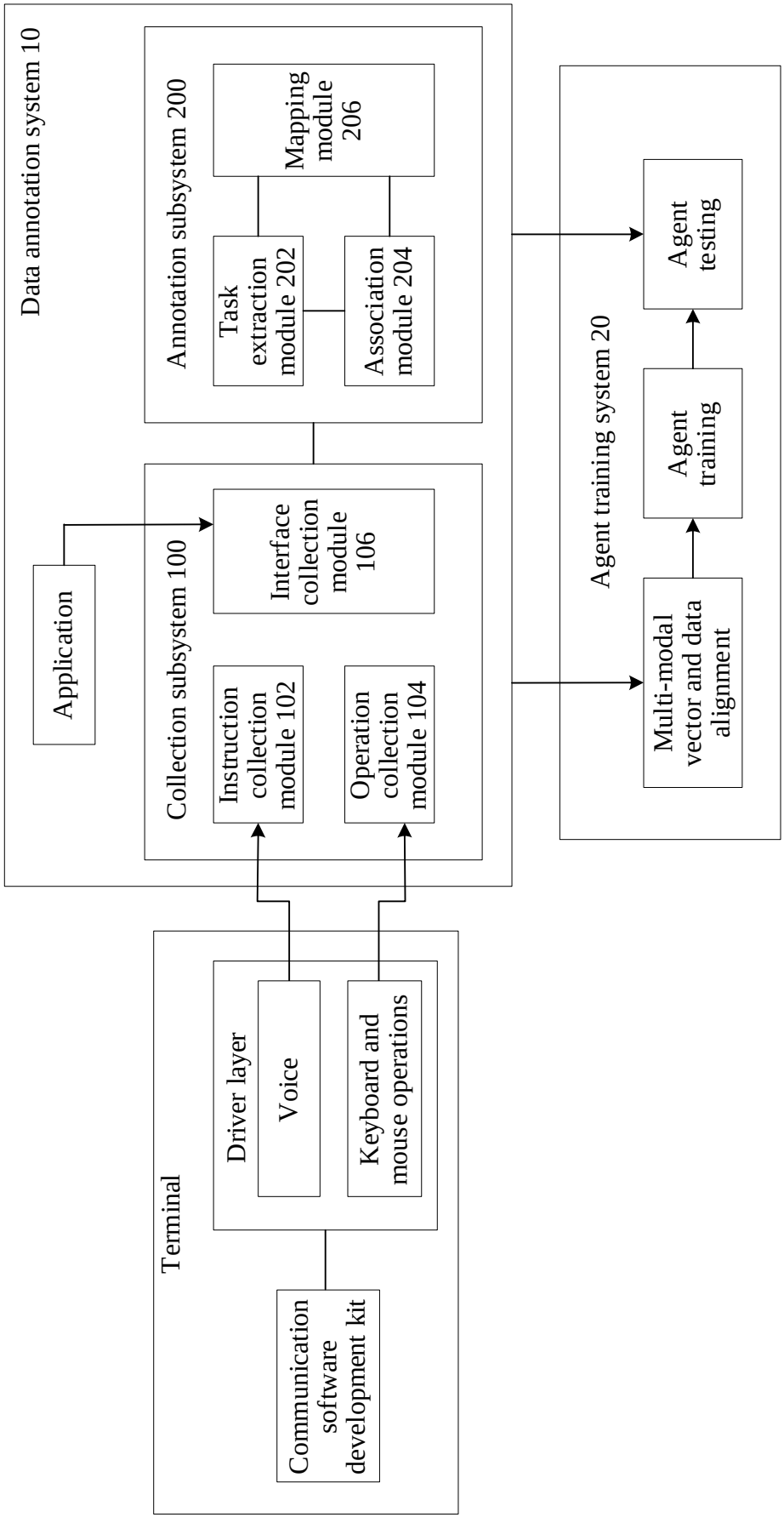
Data annotation system 10
Annotation subsystem 200
Mapping module 206
Task extraction module 202
Association module 204
Application
Collection subsystem 100
Interface collection module 106
Instruction collection module 102
Operation collection module 104
Agent training system 20
Agent testing
Agent training
Multi-modal vector and data alignment
Terminal
Driver layer
Voice
Keyboard and mouse operations
Communication software development kit

FIG. 1

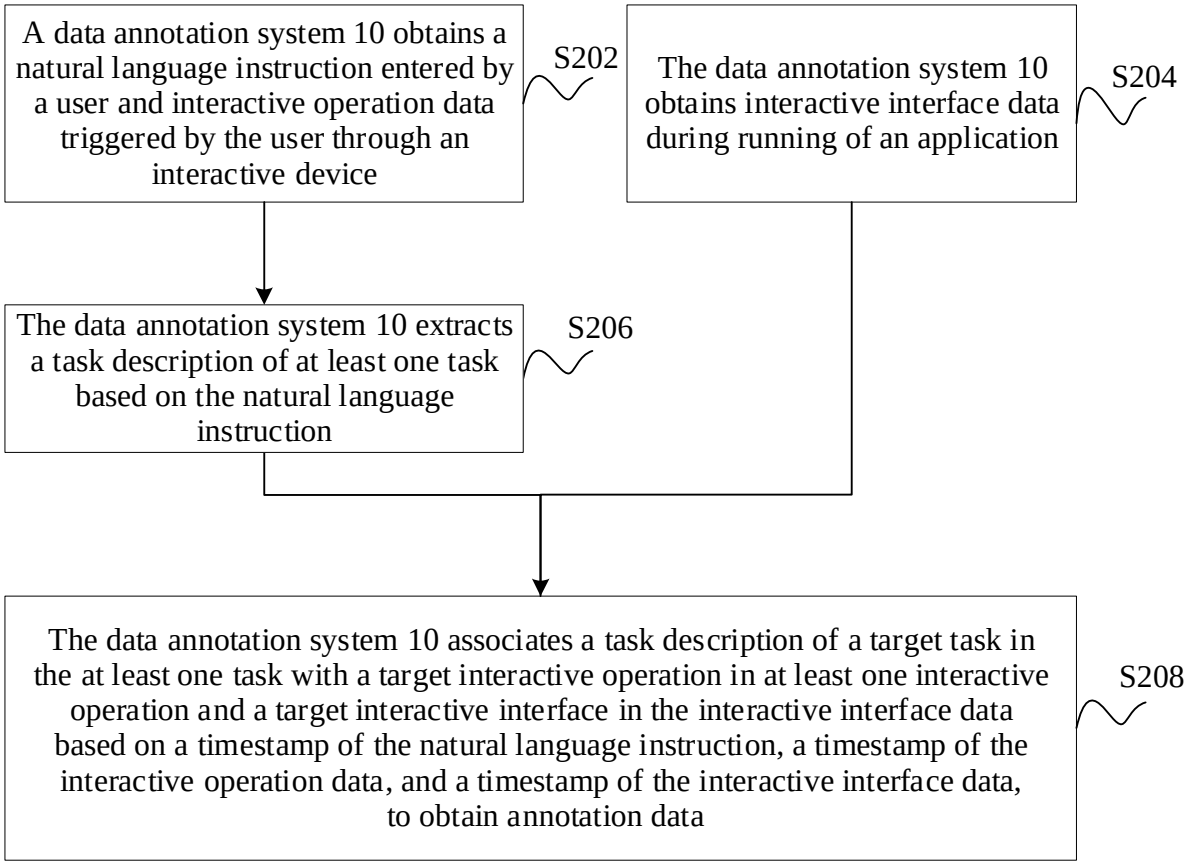
A data annotation system 10 obtains a natural language instruction entered by a user and interactive operation data triggered by the user through an interactive device
S202
The data annotation system 10 obtains interactive interface data during running of an application
S204
The data annotation system 10 extracts a task description of at least one task based on the natural language instruction
S206
The data annotation system 10 associates a task description of a target task in the at least one task with a target interactive operation in at least one interactive operation and a target interactive interface in the interactive interface data based on a timestamp of the natural language instruction, a timestamp of the interactive operation data, and a timestamp of the interactive interface data, to obtain annotation data
S208

FIG. 2

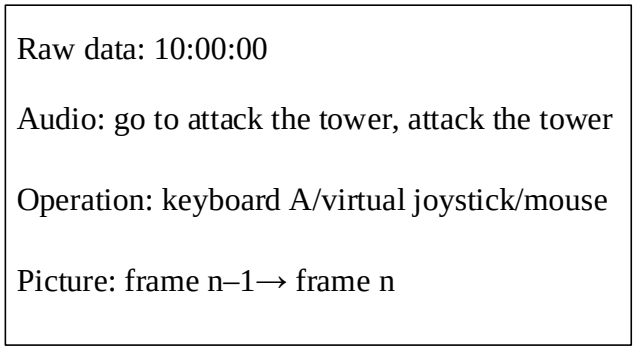
Raw data: 10:00:00
Audio: go to attack the tower, attack the tower
Operation: keyboard A/virtual joystick/mouse
Picture: frame n–1→ frame n

FIG. 3

Data after data understanding: 10:00:00
Task task: attack the defense tower and crystal
Action associated operation: keyboard A/virtual joystick/mouse
Result associated result picture: frame n–1→ frame n
Task effect understanding: one click on the keyboard A reduces the HP of the defense tower by 20%

Long-horizon task analysis (Long-Horizon): 10:00:00-10:02:00
Task task: go top and push the tower
Action associated operation: keyboard A/virtual joystick/mouse
Result associated result picture: frame n–1→ frame n
Task effect understanding: one click on the keyboard A reduces the HP of the defense tower by 20%

FIG. 4

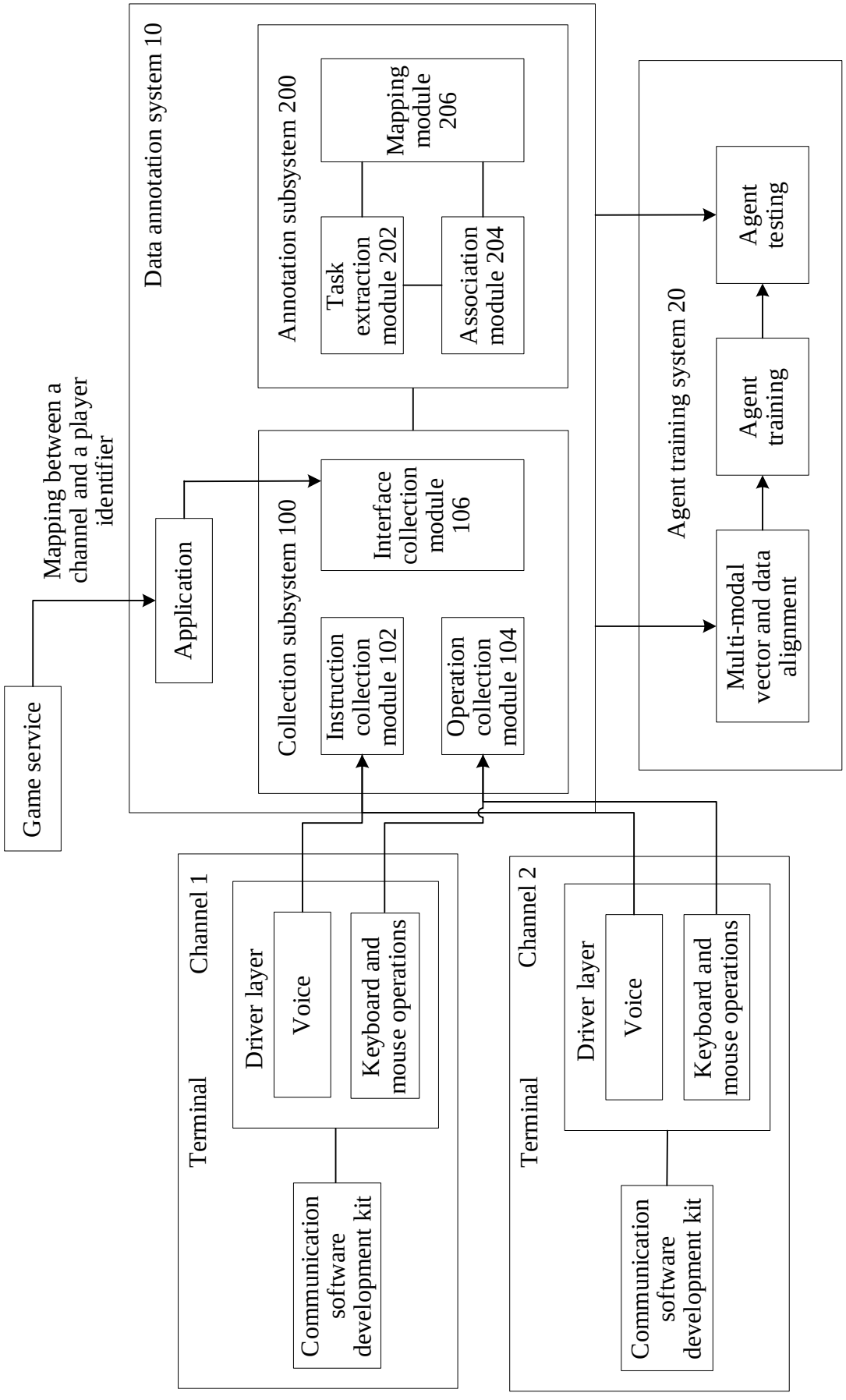
Game service
Mapping between a channel and a player identifier
Data annotation system 10
Application
Collection subsystem 100
Instruction collection module 102
Operation collection module 104
Interface collection module 106
Annotation subsystem 200
Task extraction module 202
Association module 204
Mapping module 206
Agent training system 20
Multi-modal vector and data alignment
Agent training
Agent testing
Terminal
Channel 1
Driver layer
Voice
Keyboard and mouse operations
Communication software development kit
Terminal
Channel 2
Driver layer
Voice
Keyboard and mouse operations
Communication software development kit

FIG. 5

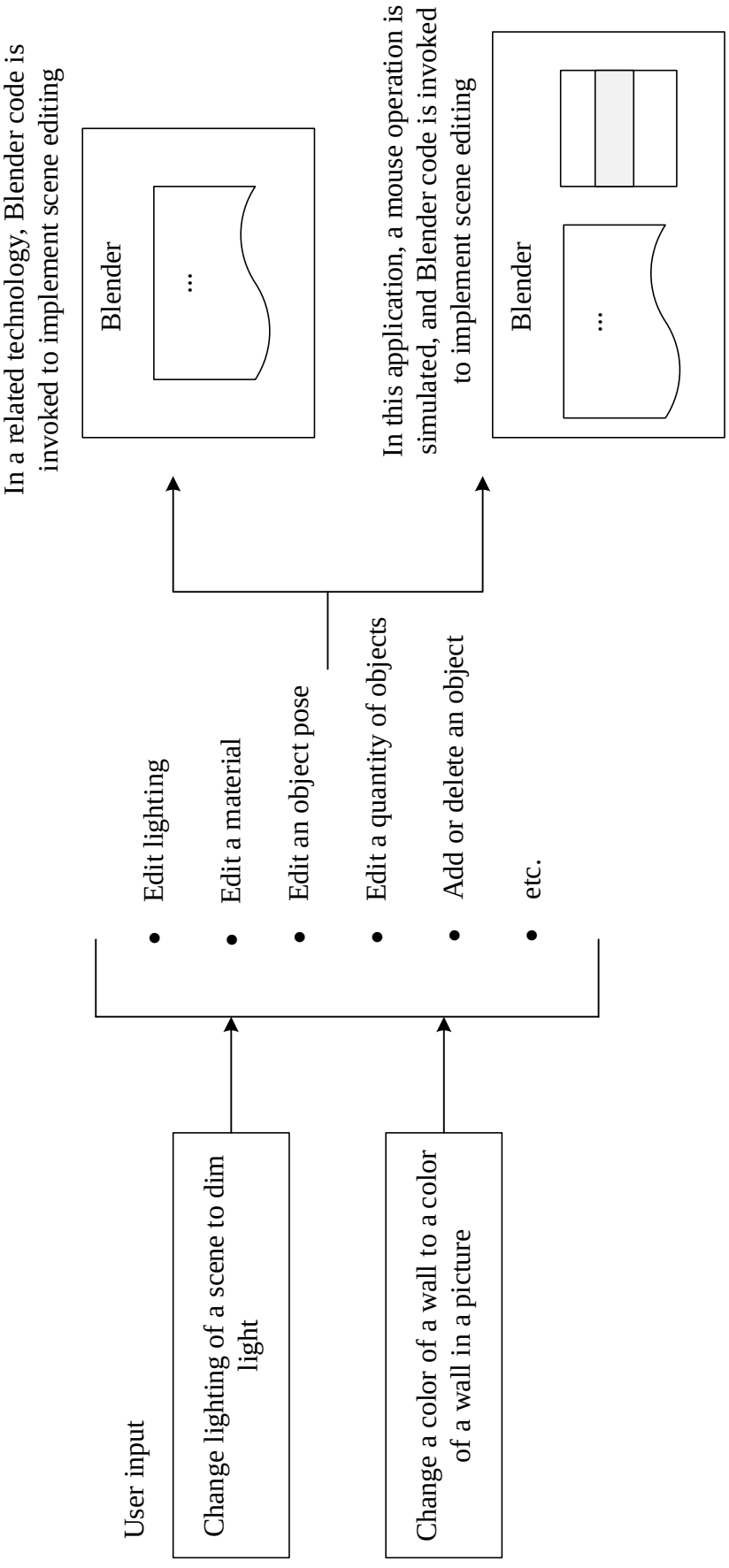
User input
Change lighting of a scene to dim light
Change a color of a wall to a color of a wall in a picture
Edit lighting
Edit a material
Edit an object pose
Edit a quantity of objects
Add or delete an object
etc.
In a related technology, Blender code is invoked to implement scene editing
Blender
...
In this application, a mouse operation is simulated, and Blender code is invoked to implement scene editing
Blender
...

FIG. 6

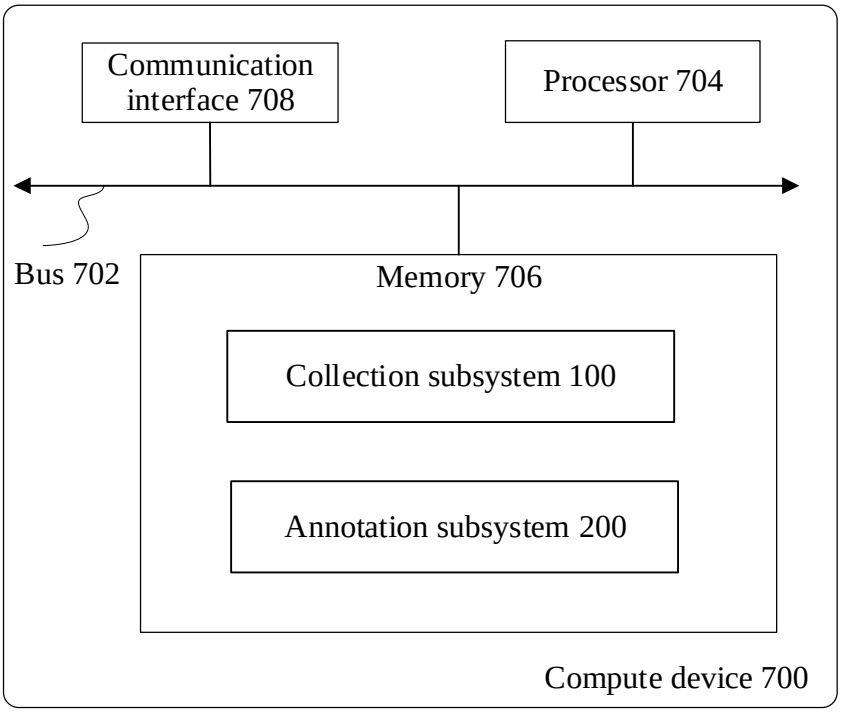
Communication interface 708
Processor 704
Bus 702
Memory 706
Collection subsystem 100
Annotation subsystem 200
Compute device 700

FIG. 7

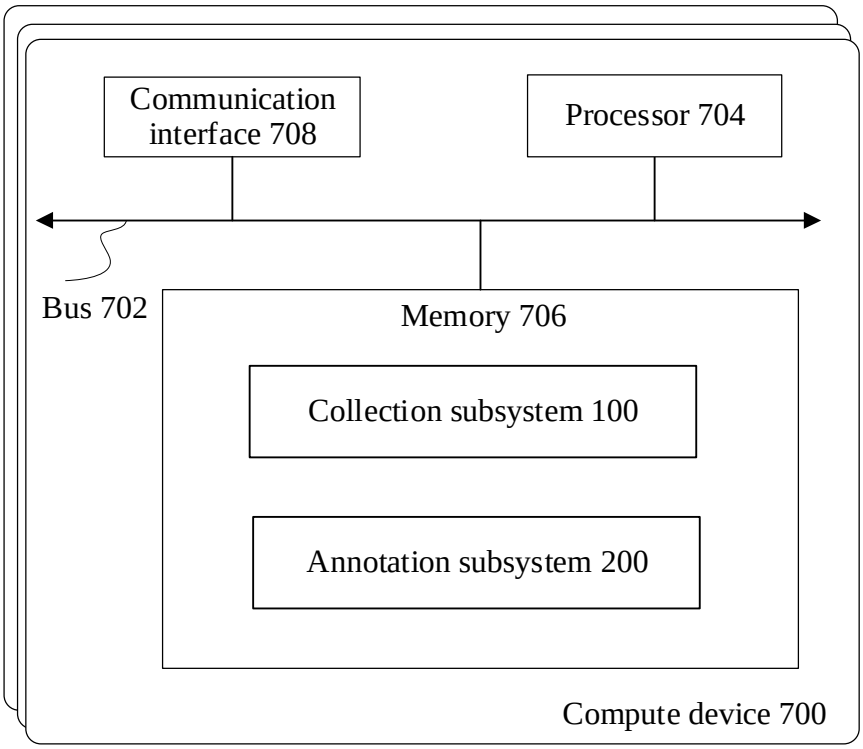
Communication interface 708
Processor 704
Bus 702
Memory 706
Collection subsystem 100
Annotation subsystem 200
Compute device 700

FIG. 8

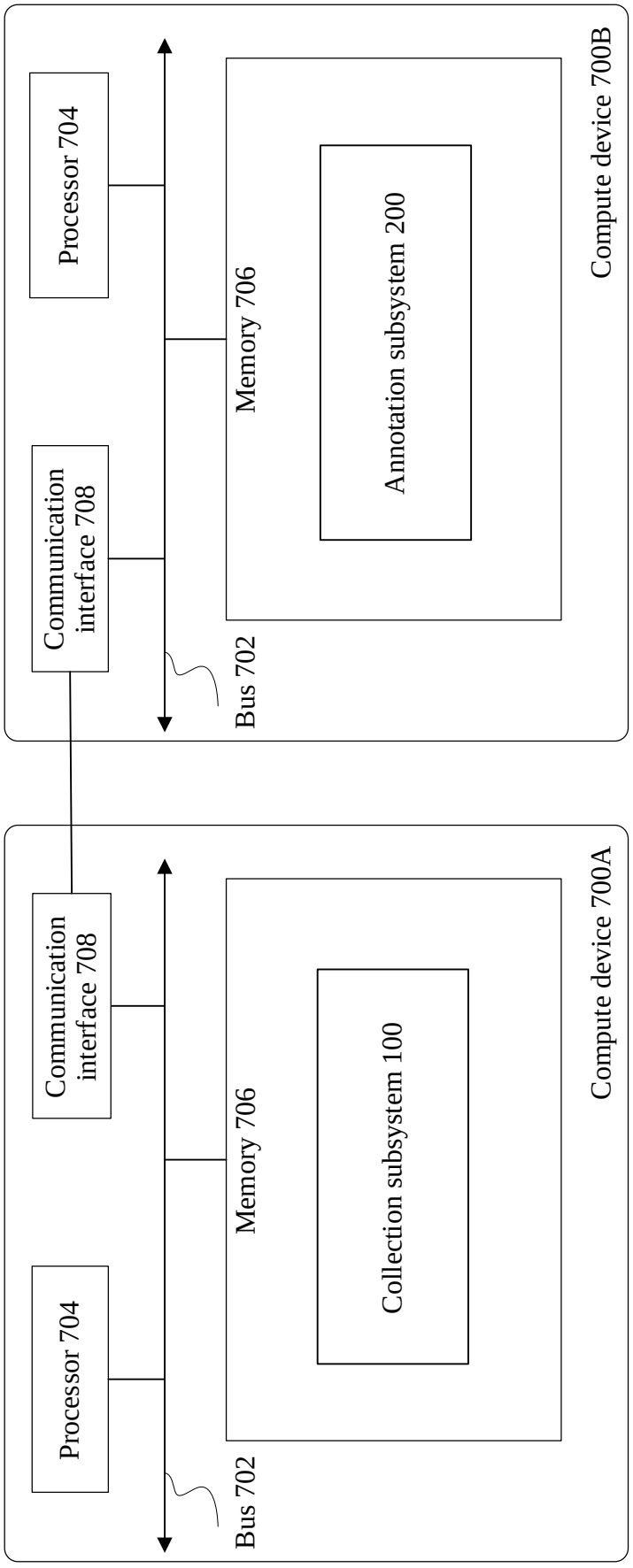
Compute device 700A
Processor 704
Communication interface 708
Memory 706
Collection subsystem 100
Bus 702
Compute device 700B
Processor 704
Communication interface 708
Memory 706
Annotation subsystem 200
Bus 702

FIG. 9

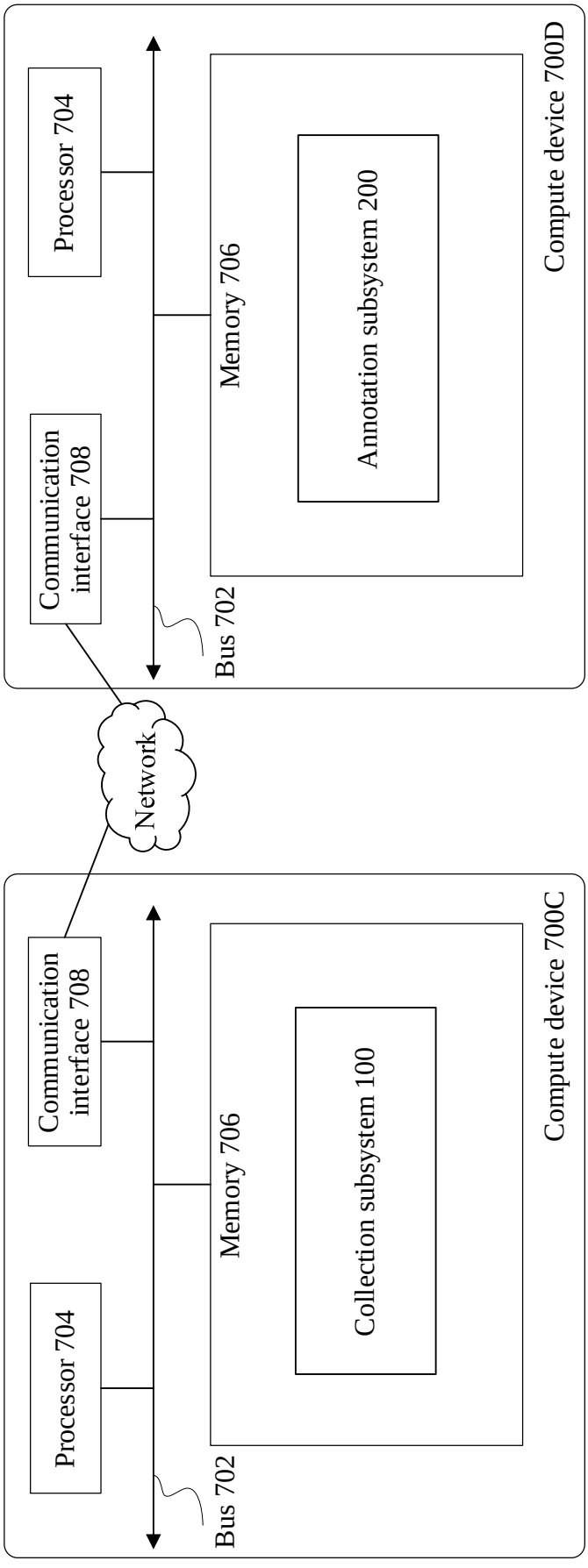
Compute device 700C
Processor 704
Communication interface 708
Bus 702
Memory 706
Collection subsystem 100
Network
Compute device 700D
Processor 704
Communication interface 708
Bus 702
Memory 706
Annotation subsystem 200

FIG. 10