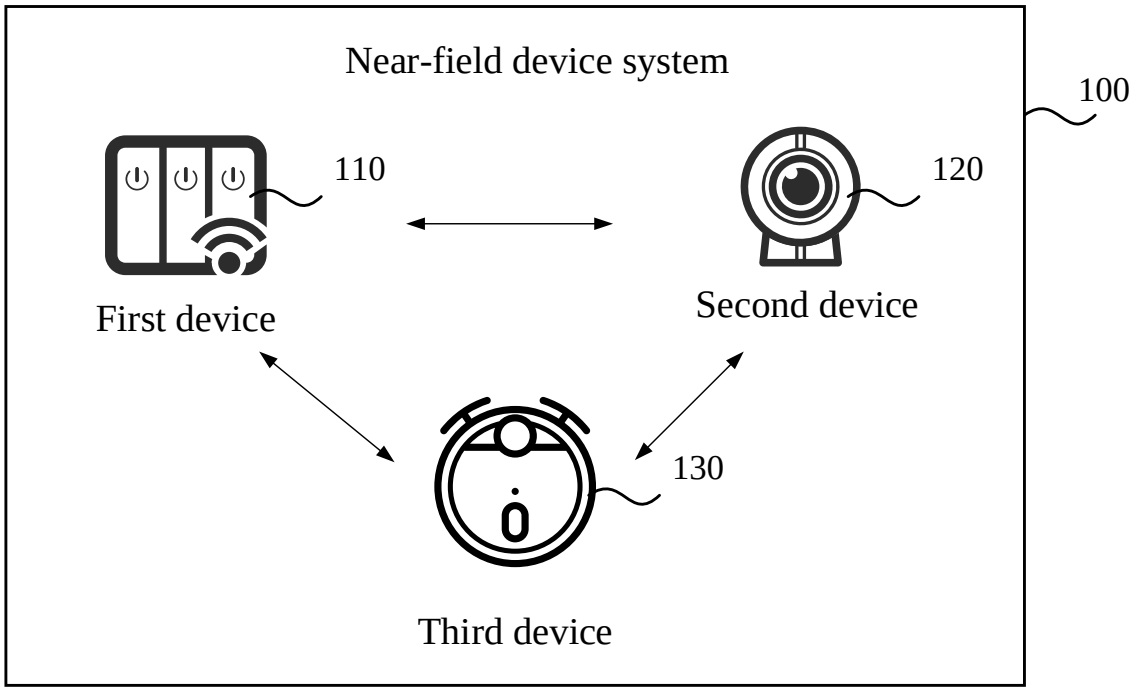
Near-field device system
100
110
120
First device
Second device
130
Third device

FIG. 1

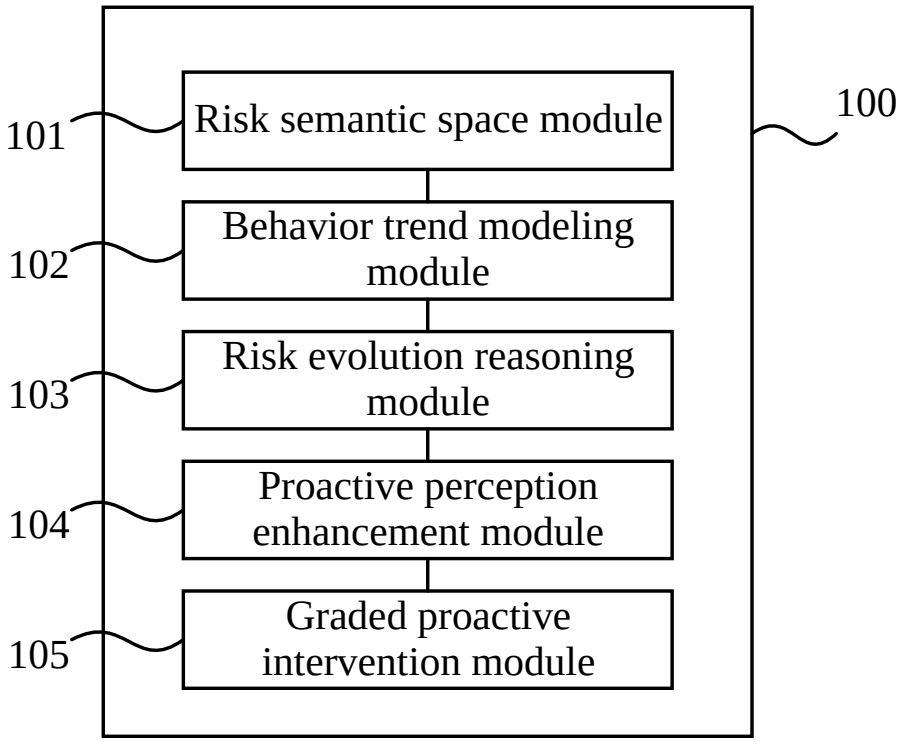
100
101
Risk semantic space module
102
Behavior trend modeling module
103
Risk evolution reasoning module
104
Proactive perception enhancement module
105
Graded proactive intervention module

FIG. 2

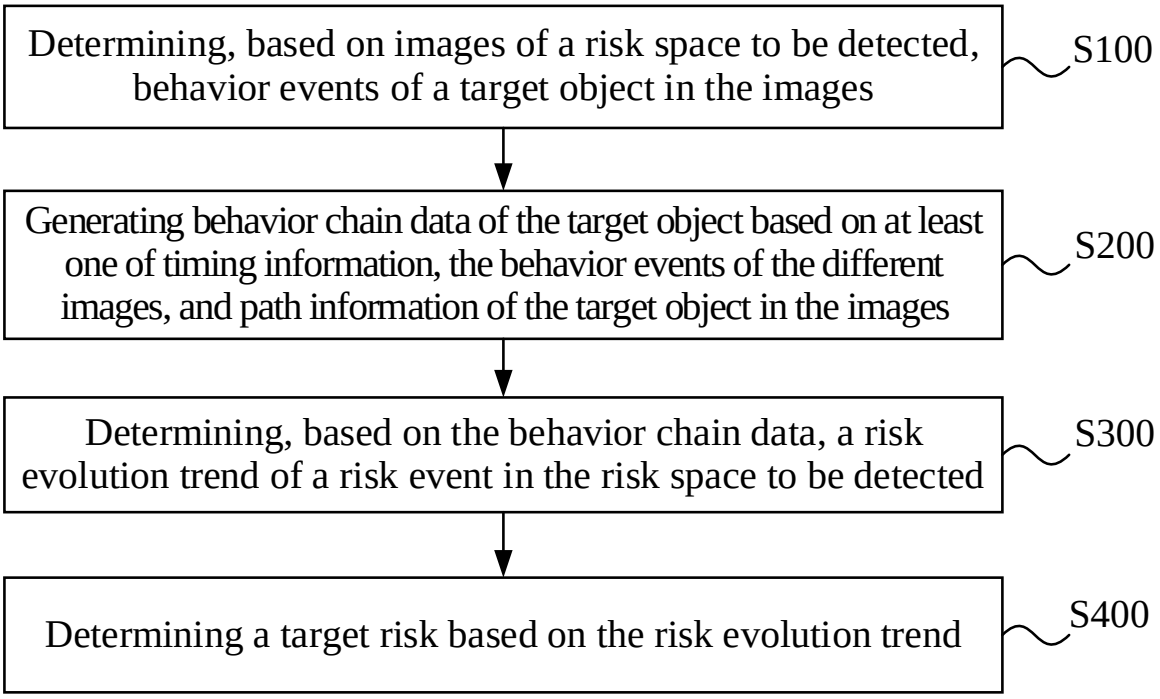
Determining, based on images of a risk space to be detected, behavior events of a target object in the images
S100
Generating behavior chain data of the target object based on at least one of timing information, the behavior events of the different images, and path information of the target object in the images
S200
Determining, based on the behavior chain data, a risk evolution trend of a risk event in the risk space to be detected
S300
Determining a target risk based on the risk evolution trend
S400

FIG. 3

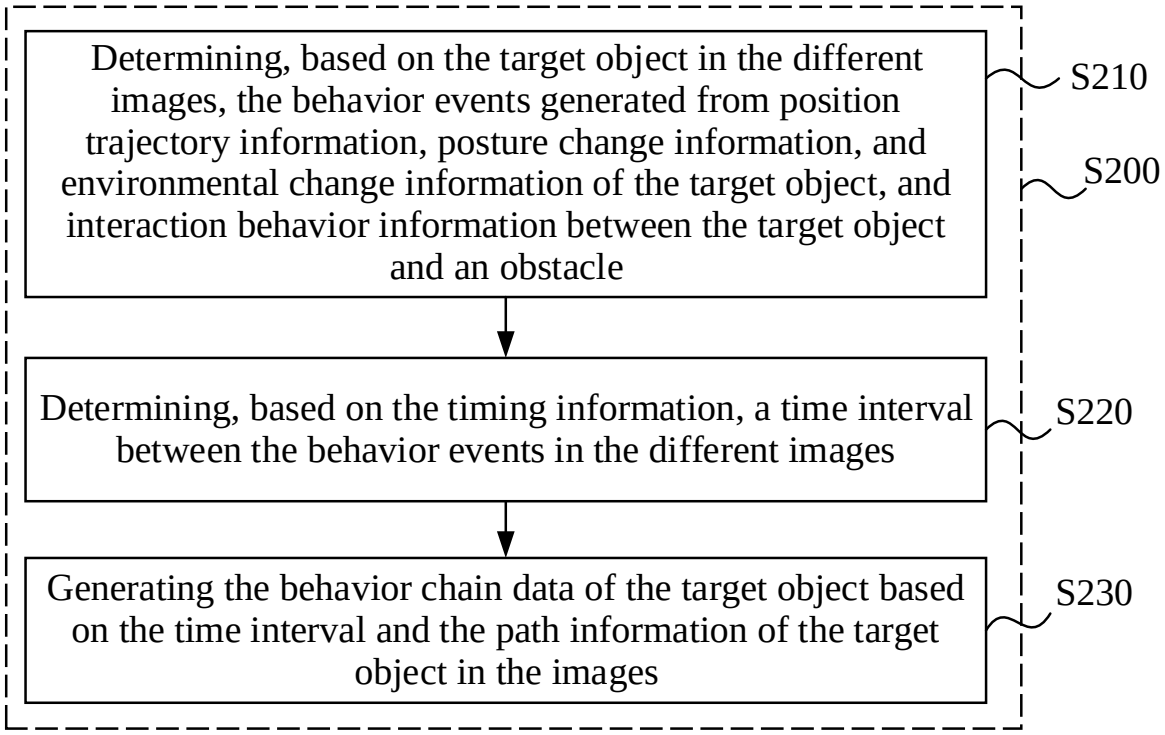
Determining, based on the target object in the different images, the behavior events generated from position trajectory information, posture change information, and environmental change information of the target object, and interaction behavior information between the target object and an obstacle
S210
S200
Determining, based on the timing information, a time interval between the behavior events in the different images
S220
Generating the behavior chain data of the target object based on the time interval and the path information of the target object in the images
S230

FIG. 4

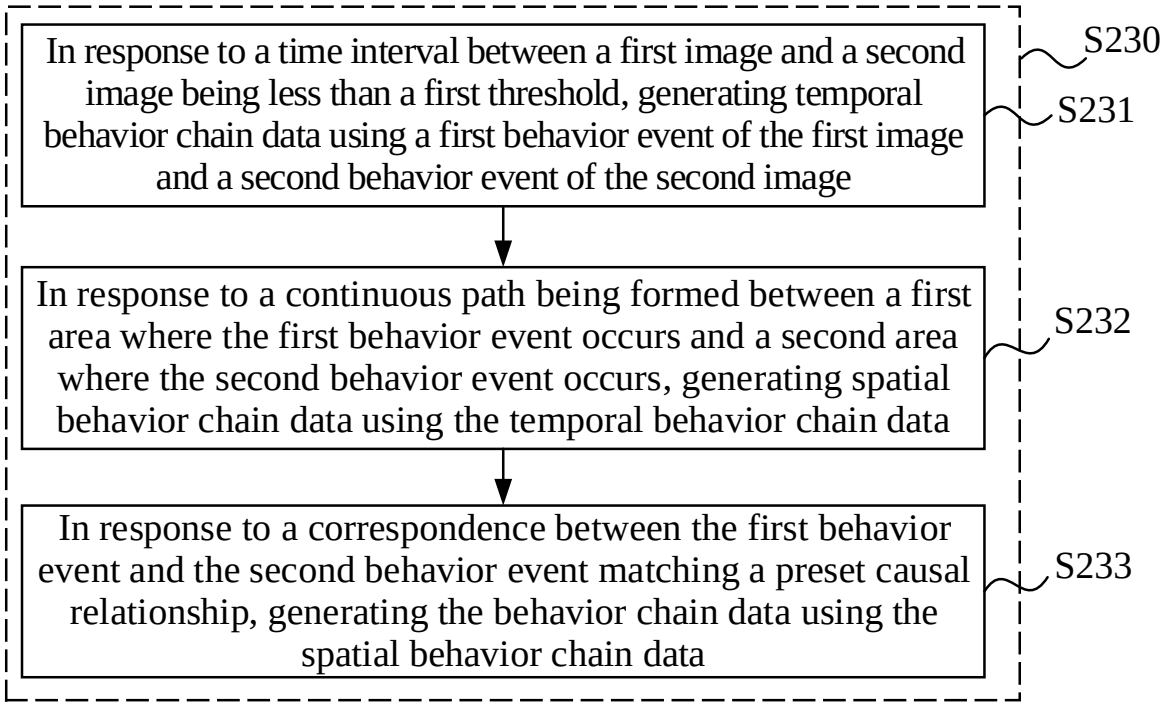
In response to a time interval between a first image and a second image being less than a first threshold, generating temporal behavior chain data using a first behavior event of the first image and a second behavior event of the second image
S230
S231
In response to a continuous path being formed between a first area where the first behavior event occurs and a second area where the second behavior event occurs, generating spatial behavior chain data using the temporal behavior chain data
S232
In response to a correspondence between the first behavior event and the second behavior event matching a preset causal relationship, generating the behavior chain data using the spatial behavior chain data
S233

FIG. 5

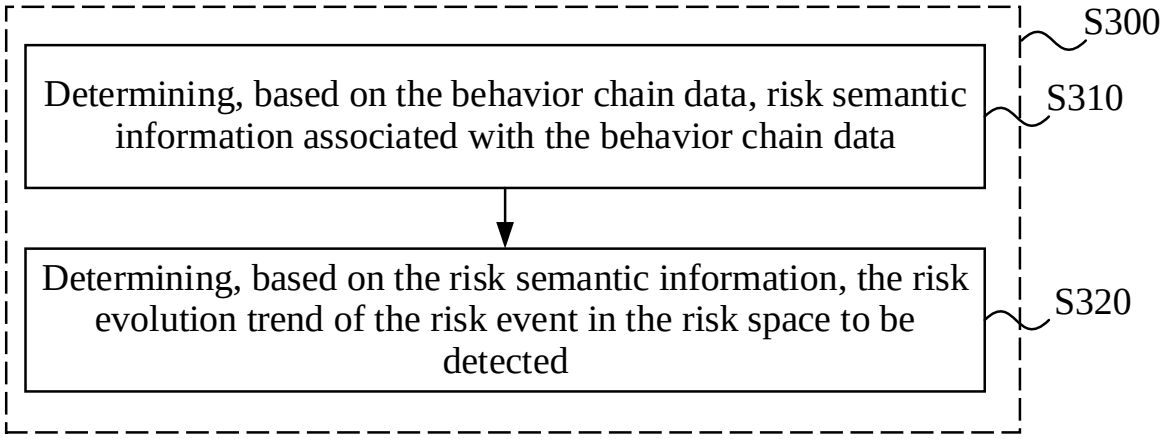
S300
Determining, based on the behavior chain data, risk semantic information associated with the behavior chain data
S310
Determining, based on the risk semantic information, the risk evolution trend of the risk event in the risk space to be detected
S320

FIG. 6

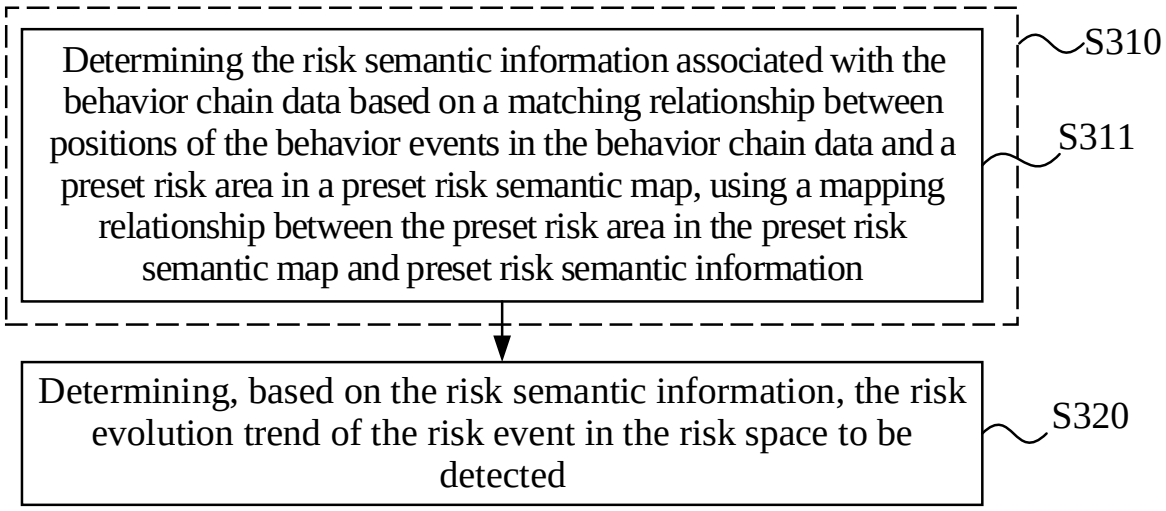
Determining the risk semantic information associated with the behavior chain data based on a matching relationship between positions of the behavior events in the behavior chain data and a preset risk area in a preset risk semantic map, using a mapping relationship between the preset risk area in the preset risk semantic map and preset risk semantic information
S310
S311
Determining, based on the risk semantic information, the risk evolution trend of the risk event in the risk space to be detected
S320

FIG. 7

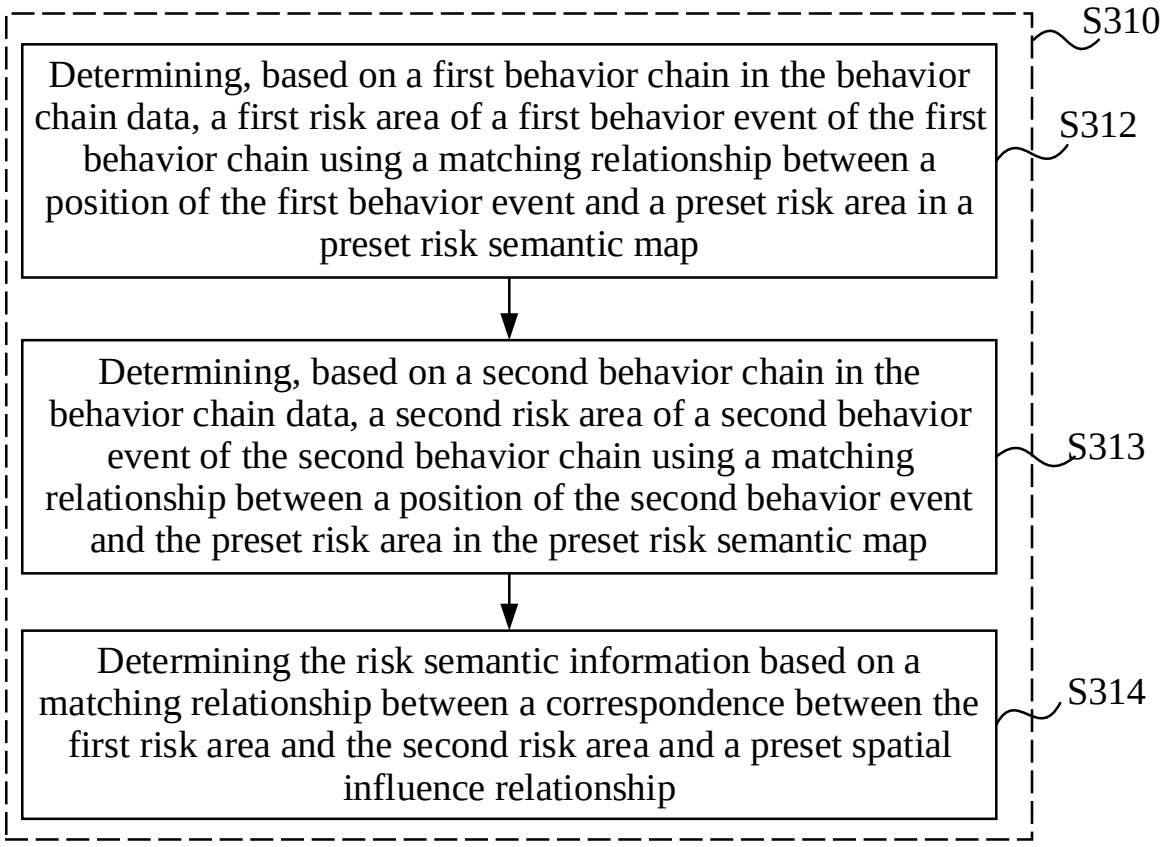
S310
Determining, based on a first behavior chain in the behavior chain data, a first risk area of a first behavior event of the first behavior chain using a matching relationship between a position of the first behavior event and a preset risk area in a preset risk semantic map
S312
Determining, based on a second behavior chain in the behavior chain data, a second risk area of a second behavior event of the second behavior chain using a matching relationship between a position of the second behavior event and the preset risk area in the preset risk semantic map
S313
Determining the risk semantic information based on a matching relationship between a correspondence between the first risk area and the second risk area and a preset spatial influence relationship
S314

FIG. 8

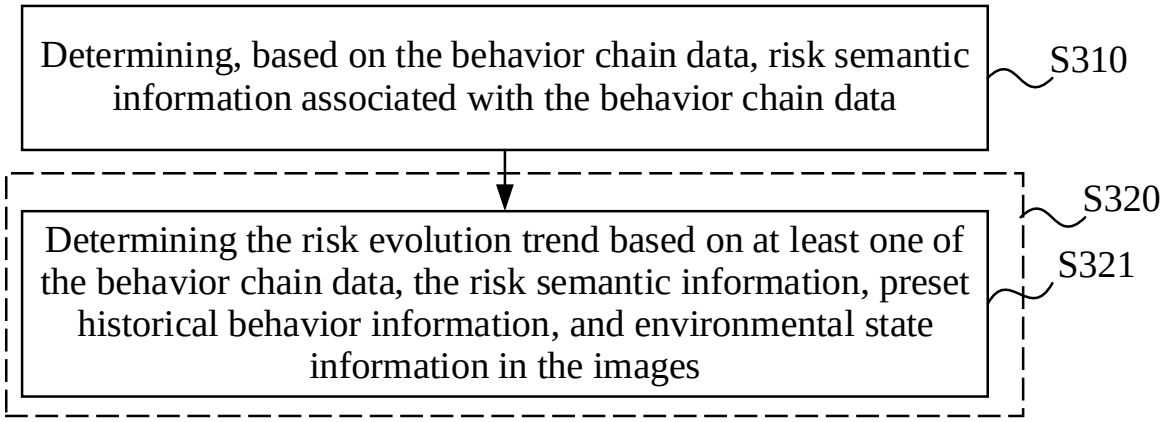
Determining, based on the behavior chain data, risk semantic information associated with the behavior chain data
S310
S320
Determining the risk evolution trend based on at least one of the behavior chain data, the risk semantic information, preset historical behavior information, and environmental state information in the images
S321

FIG. 9

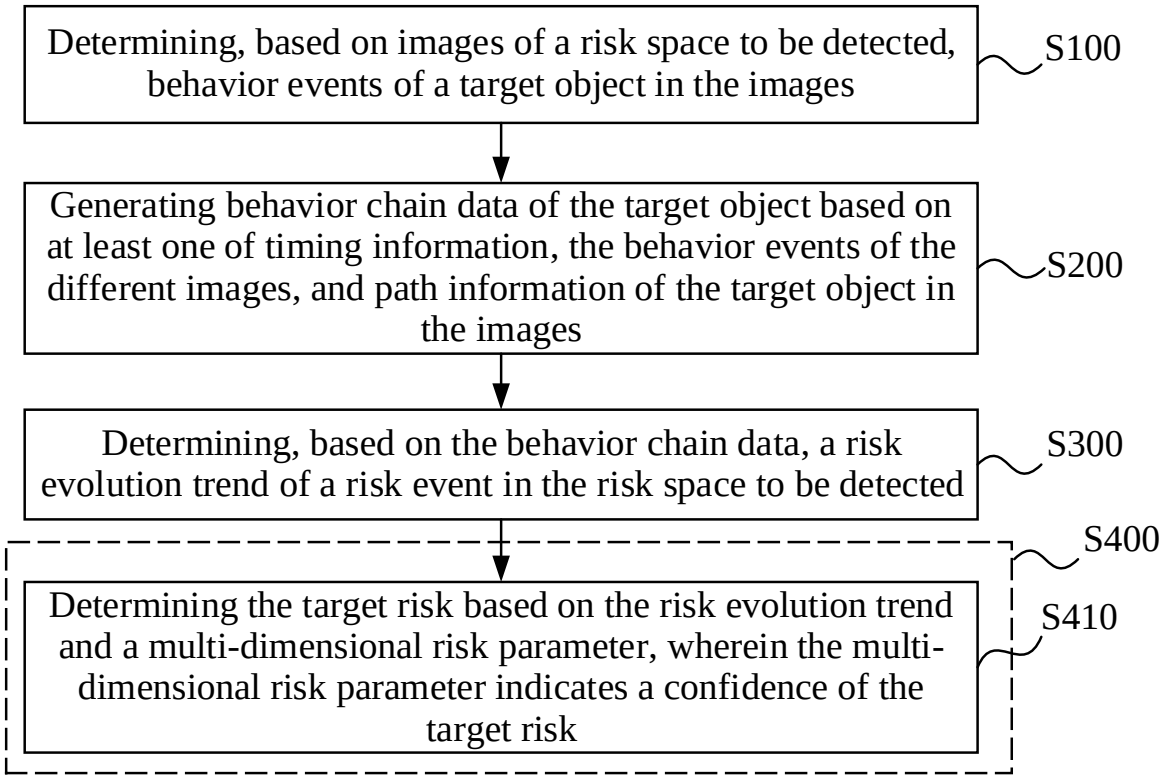
Determining, based on images of a risk space to be detected, behavior events of a target object in the images
S100
Generating behavior chain data of the target object based on at least one of timing information, the behavior events of the different images, and path information of the target object in the images
S200
Determining, based on the behavior chain data, a risk evolution trend of a risk event in the risk space to be detected
S300
S400
Determining the target risk based on the risk evolution trend and a multi-dimensional risk parameter, wherein the multi-dimensional risk parameter indicates a confidence of the target risk
S410

FIG. 10

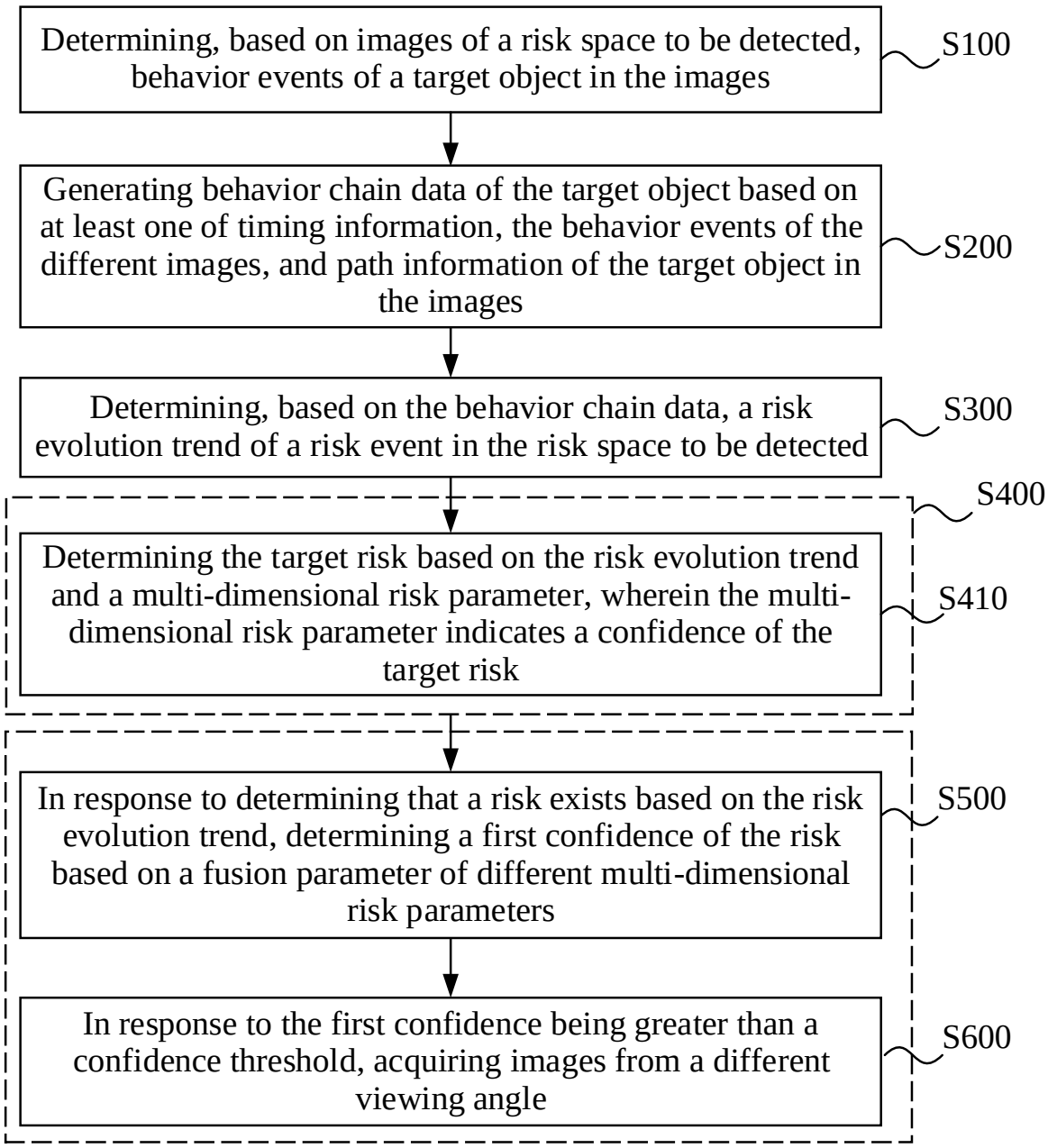
Determining, based on images of a risk space to be detected, behavior events of a target object in the images
S100
Generating behavior chain data of the target object based on at least one of timing information, the behavior events of the different images, and path information of the target object in the images
S200
Determining, based on the behavior chain data, a risk evolution trend of a risk event in the risk space to be detected
S300
S400
Determining the target risk based on the risk evolution trend and a multi-dimensional risk parameter, wherein the multi-dimensional risk parameter indicates a confidence of the target risk
S410
In response to determining that a risk exists based on the risk evolution trend, determining a first confidence of the risk based on a fusion parameter of different multi-dimensional risk parameters
S500
In response to the first confidence being greater than a confidence threshold, acquiring images from a different viewing angle
S600

FIG. 11

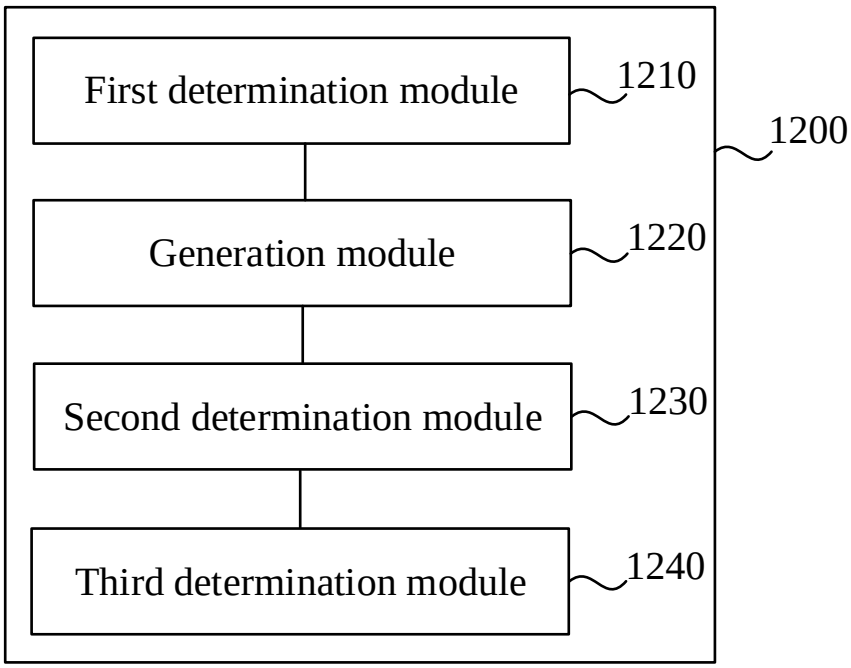
First determination module
1210
1200
Generation module
1220
Second determination module
1230
Third determination module
1240

FIG. 12

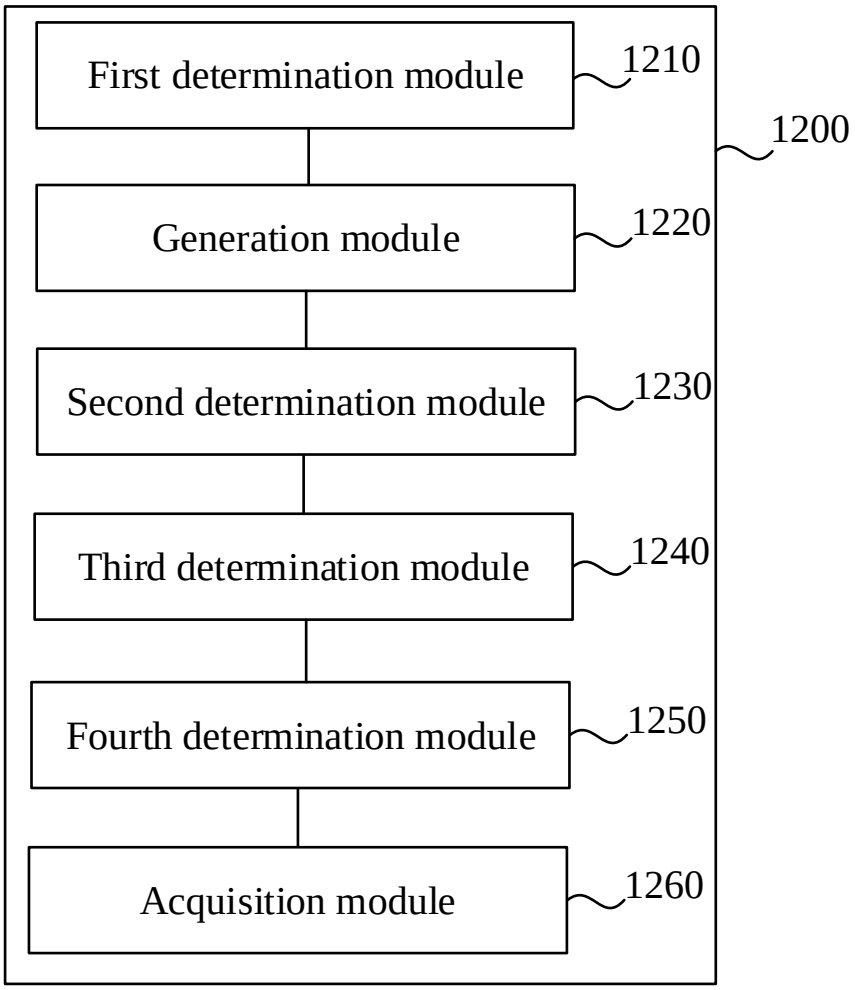
First determination module
1210
1200
Generation module
1220
Second determination module
1230
Third determination module
1240
Fourth determination module
1250
Acquisition module
1260

FIG. 13

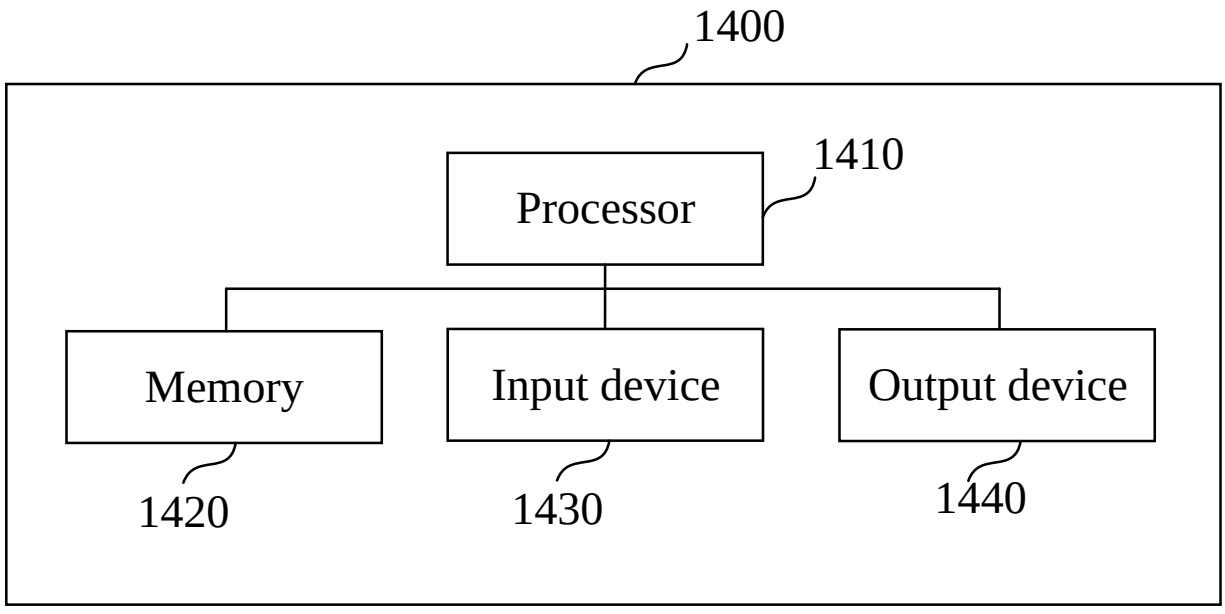
1400
Processor
1410
Memory
Input device
Output device
1420
1430
1440

FIG. 14