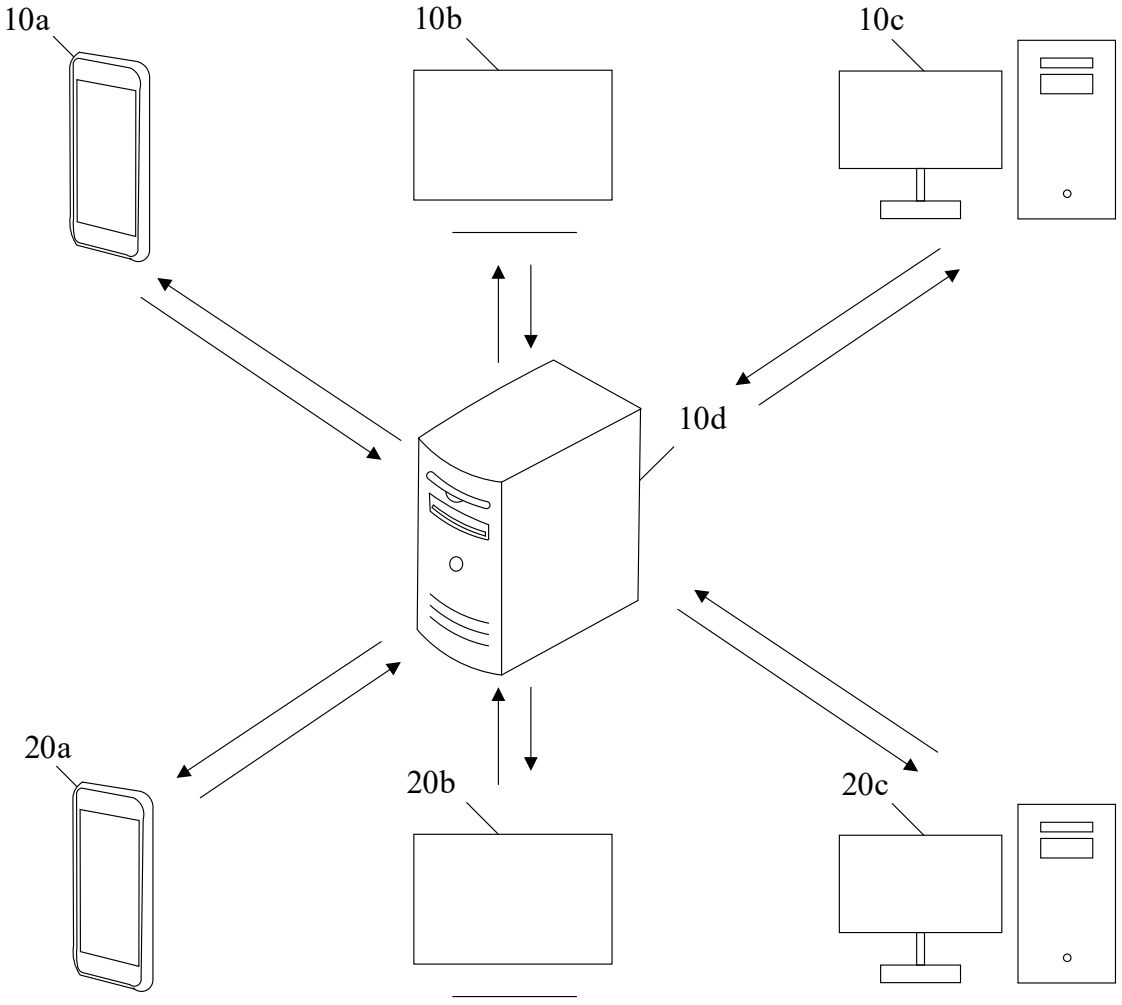


FIG. 1

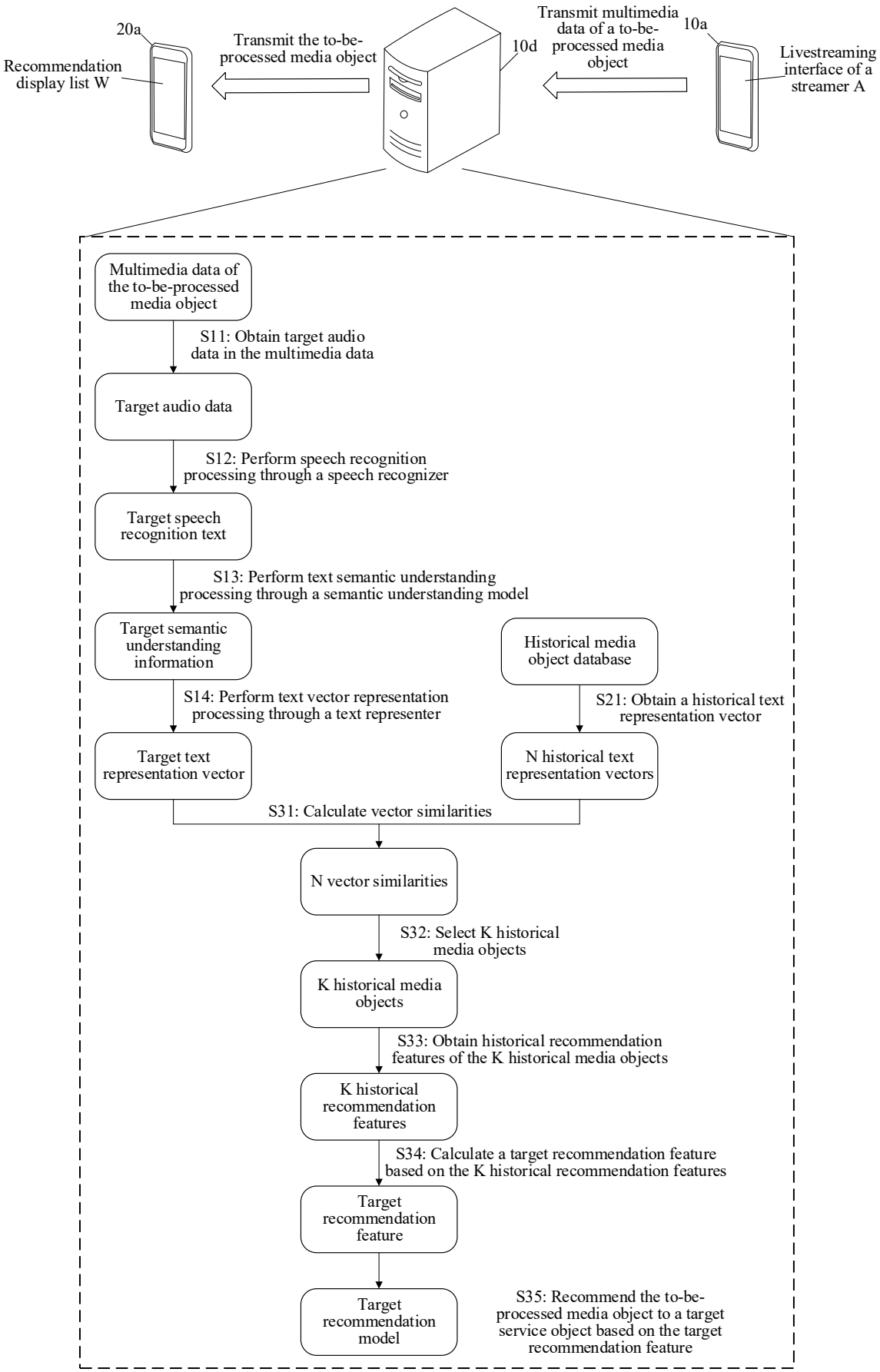

20a
Recommendation display list W
Transmit the to-be-processed media object
10d
Transmit multimedia data of a to-be-processed media object
10a
Livestreaming interface of a streamer A
Multimedia data of the to-be-processed media object
S11: Obtain target audio data in the multimedia data
Target audio data
S12: Perform speech recognition processing through a speech recognizer
Target speech recognition text
S13: Perform text semantic understanding processing through a semantic understanding model
Target semantic understanding information
Historical media object database
S14: Perform text vector representation processing through a text representer
S21: Obtain a historical text representation vector
Target text representation vector
N historical text representation vectors
S31: Calculate vector similarities
N vector similarities
S32: Select K historical media objects
K historical media objects
S33: Obtain historical recommendation features of the K historical media objects
K historical recommendation features
S34: Calculate a target recommendation feature based on the K historical recommendation features
Target recommendation feature
Target recommendation model
S35: Recommend the to-be-processed media object to a target service object based on the target recommendation feature

FIG. 2

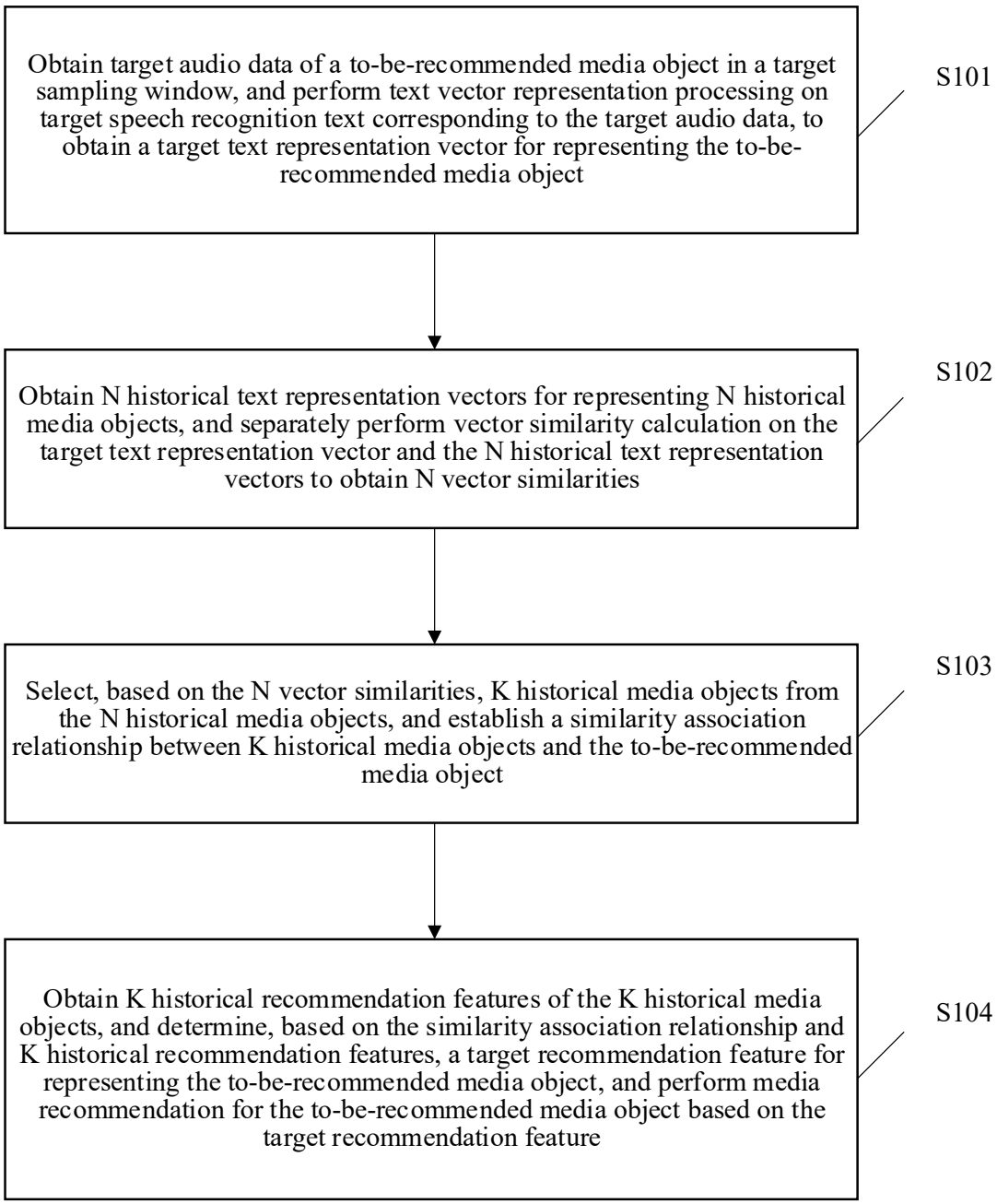

Obtain target audio data of a to-be-recommended media object in a target sampling window, and perform text vector representation processing on target speech recognition text corresponding to the target audio data, to obtain a target text representation vector for representing the to-be-recommended media object
S101
Obtain N historical text representation vectors for representing N historical media objects, and separately perform vector similarity calculation on the target text representation vector and the N historical text representation vectors to obtain N vector similarities
S102
Select, based on the N vector similarities, K historical media objects from the N historical media objects, and establish a similarity association relationship between K historical media objects and the to-be-recommended media object
S103
Obtain K historical recommendation features of the K historical media objects, and determine, based on the similarity association relationship and K historical recommendation features, a target recommendation feature for representing the to-be-recommended media object, and perform media recommendation for the to-be-recommended media object based on the target recommendation feature
S104

FIG. 3

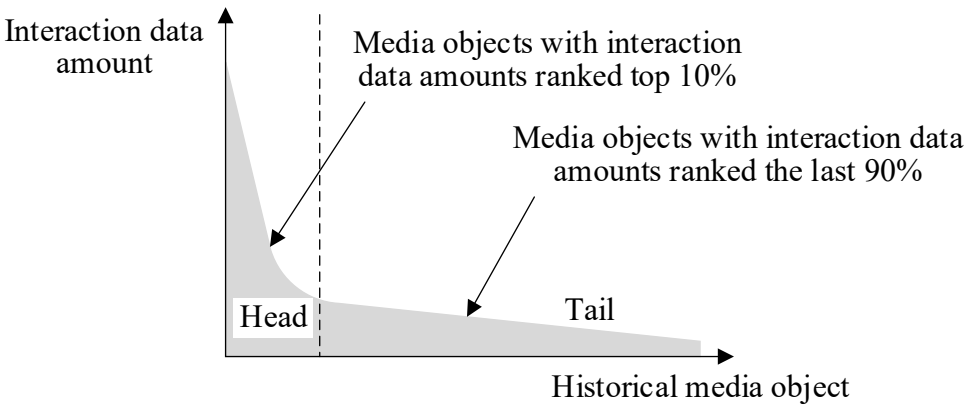

Interaction data amount
Media objects with interaction data amounts ranked top 10%
Media objects with interaction data amounts ranked the last 90%
Head
Tail
Historical media object

FIG. 4

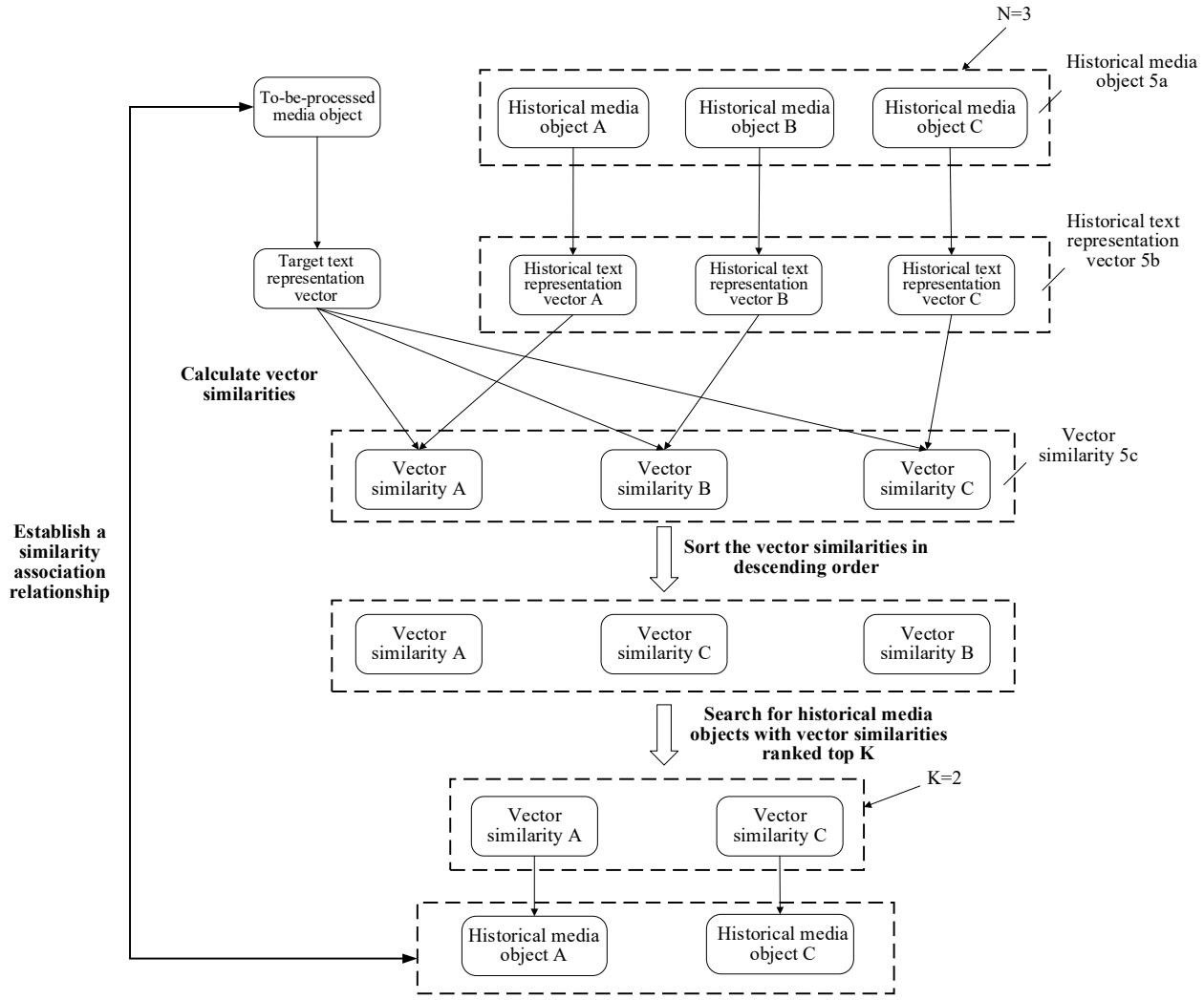

N=3
Historical media object 5a
To-be-processed media object
Historical media object A
Historical media object B
Historical media object C
Historical text representation vector 5b
Target text representation vector
Historical text representation vector A
Historical text representation vector B
Historical text representation vector C
Calculate vector similarities
Vector similarity 5c
Vector similarity A
Vector similarity B
Vector similarity C
Establish a similarity association relationship
Sort the vector similarities in descending order
Vector similarity A
Vector similarity C
Vector similarity B
Search for historical media objects with vector similarities ranked top K
K=2
Vector similarity A
Vector similarity C
Historical media object A
Historical media object C

FIG. 5

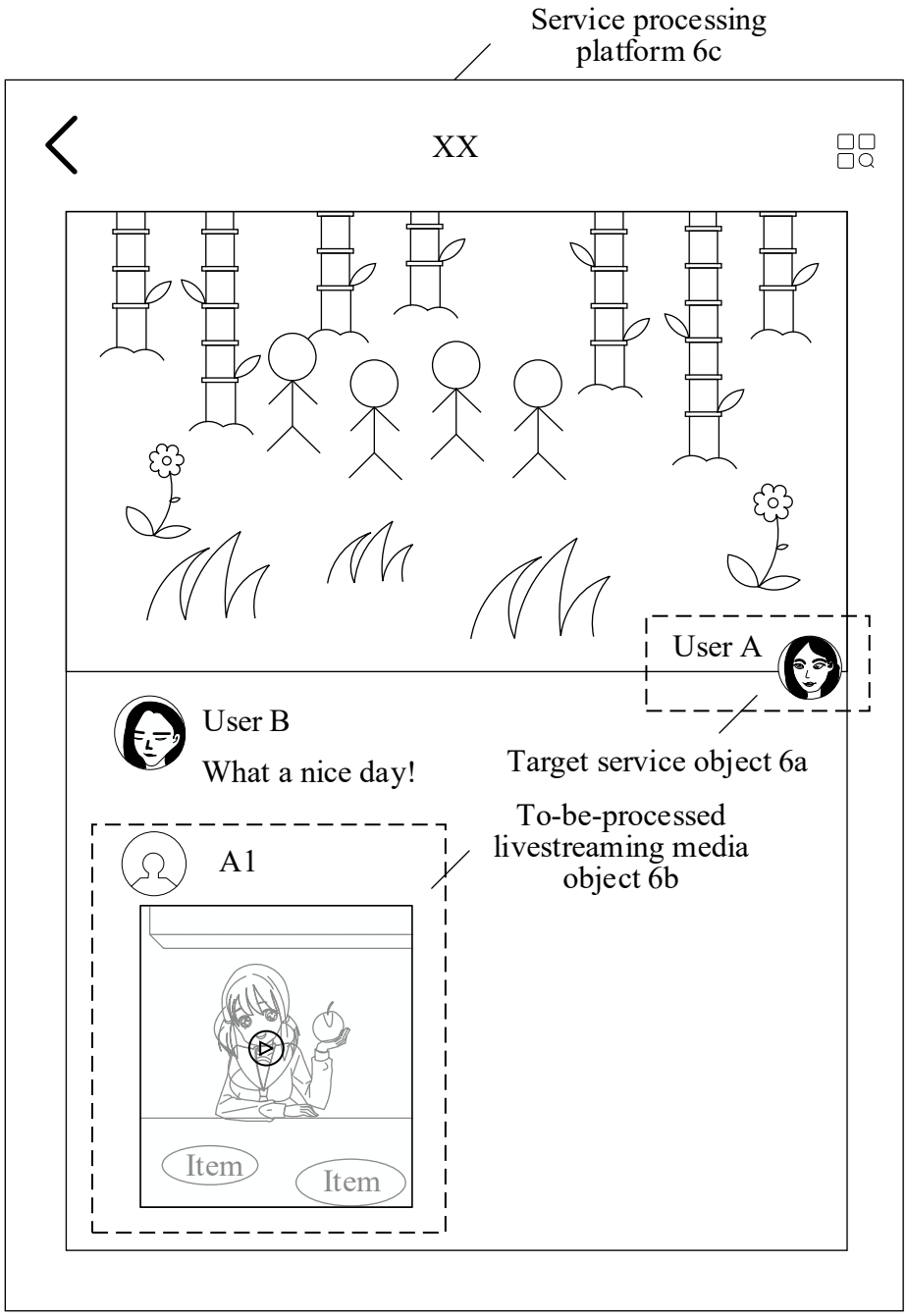

Service processing platform 6c
XX
User A
User B
What a nice day!
Target service object 6a
To-be-processed livestreaming media object 6b
A1
Item
Item

FIG. 6

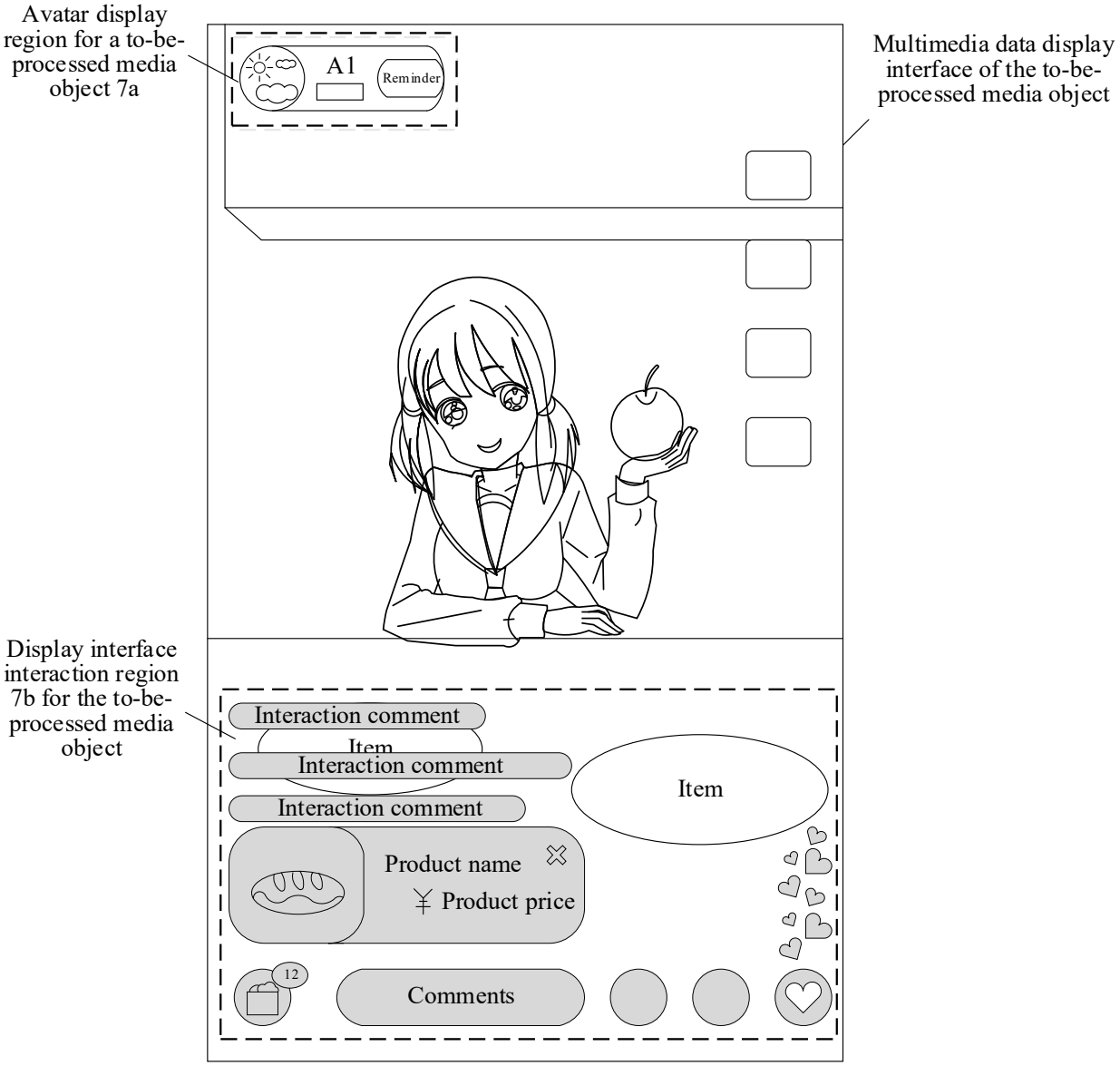

Avatar display region for a to-be-processed media object 7a
A1
Reminder
Multimedia data display interface of the to-be-processed media object
Display interface interaction region 7b for the to-be-processed media object
Interaction comment
Item
Interaction comment
Item
Interaction comment
Product name
Product price
12
Comments

FIG. 7

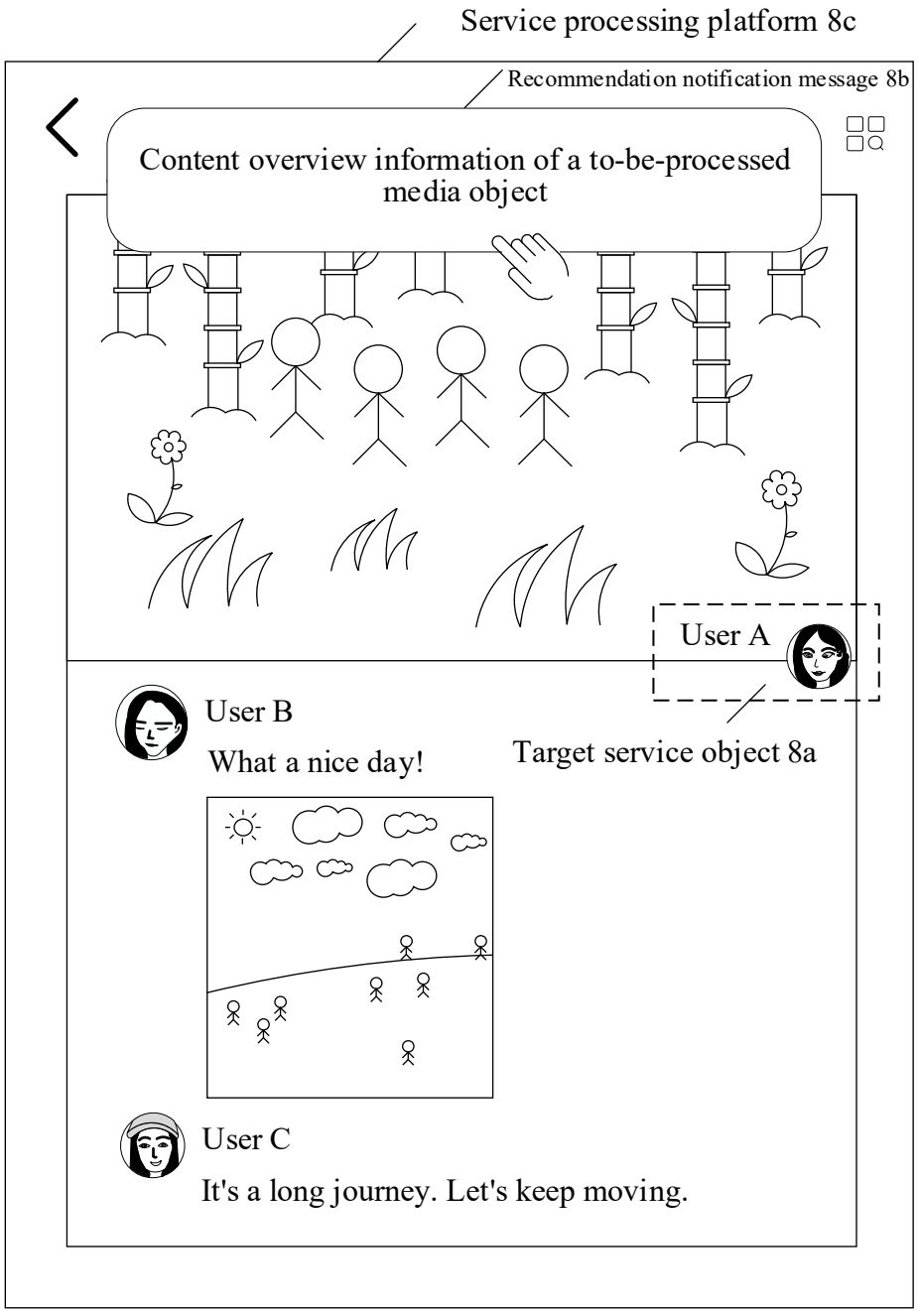

Service processing platform 8c
Recommendation notification message 8b
Content overview information of a to-be-processed media object
User A
Target service object 8a
User B
What a nice day!
User C
It's a long journey. Let's keep moving.

FIG. 8

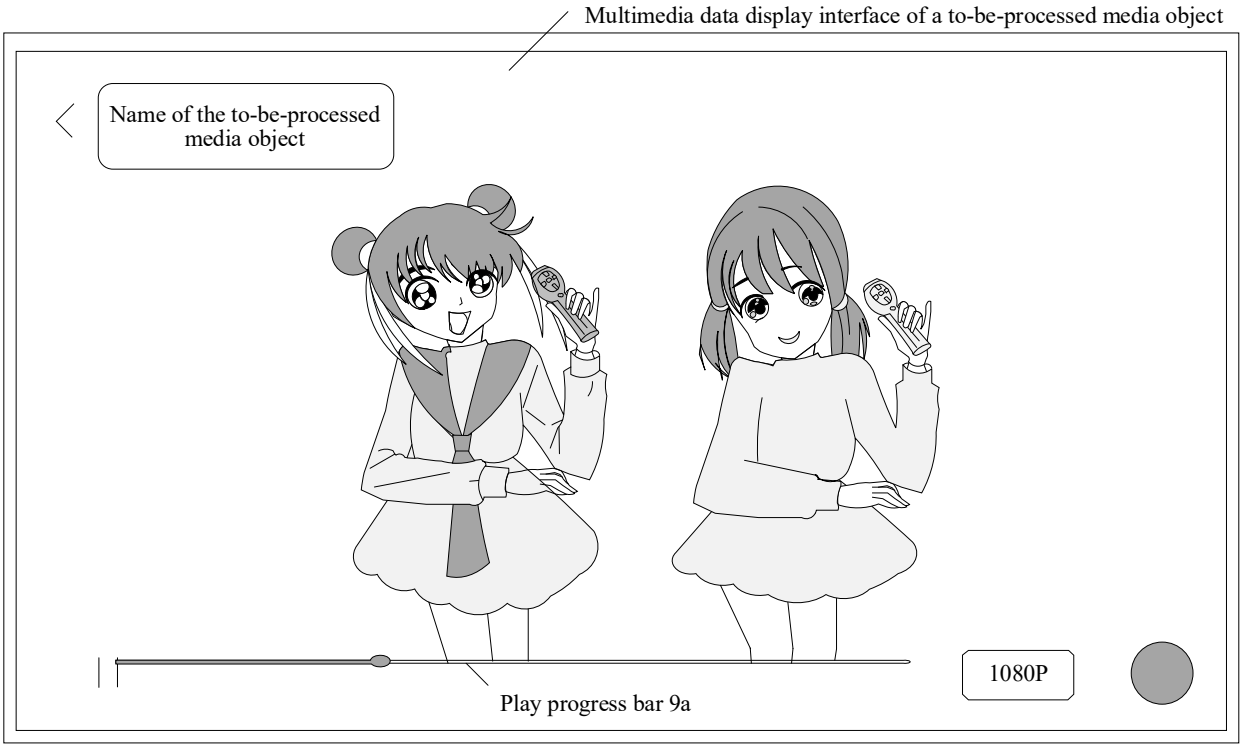

Multimedia data display interface of a to-be-processed media object
Name of the to-be-processed media object
1080P
Play progress bar 9a

FIG. 9

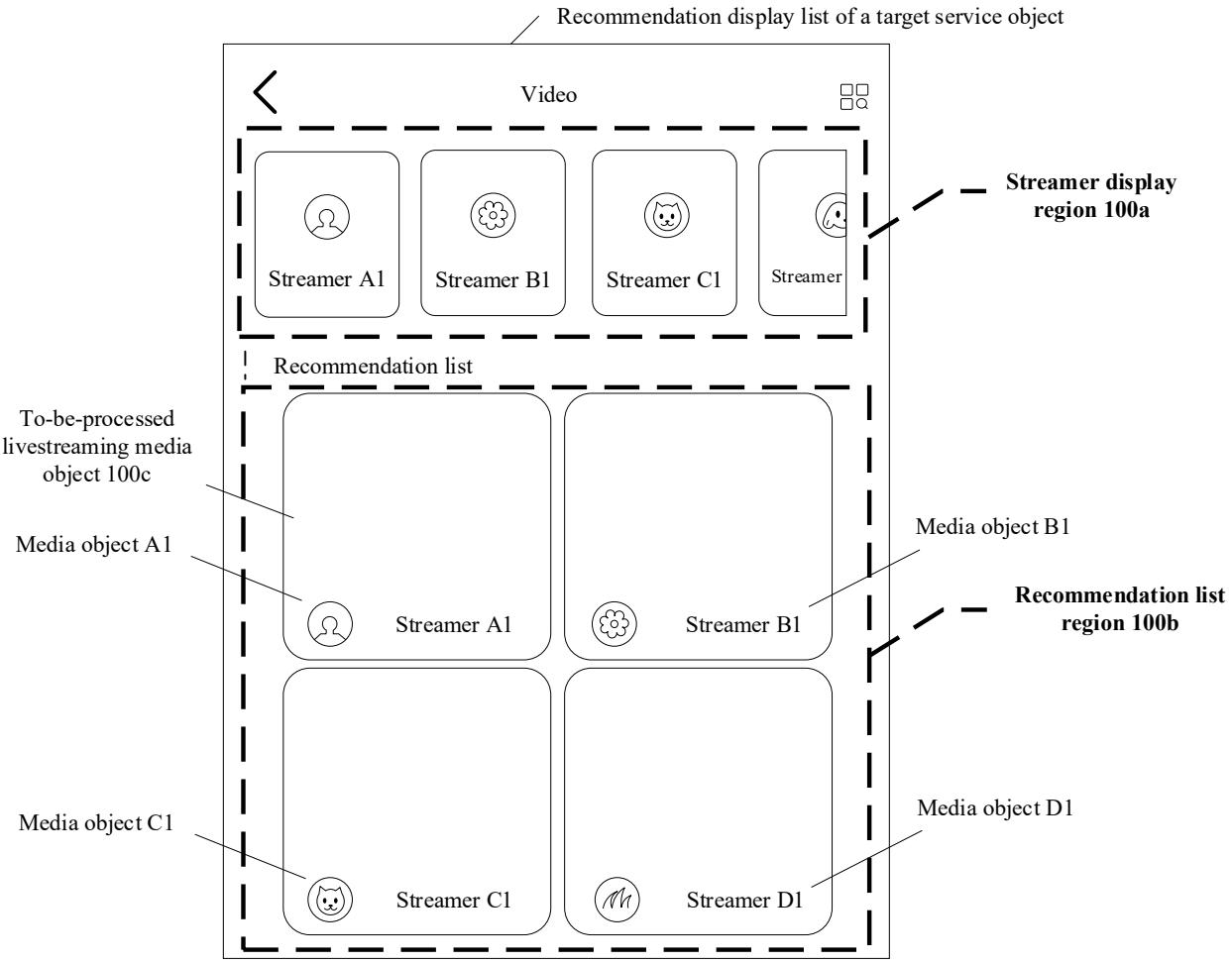

Recommendation display list of a target service object
Video
Streamer A1
Streamer B1
Streamer C1
Streamer
Streamer display region 100a
Recommendation list
To-be-processed livestreaming media object 100c
Media object A1
Media object B1
Recommendation list region 100b
Streamer A1
Streamer B1
Media object C1
Media object D1
Streamer C1
Streamer D1

FIG. 10

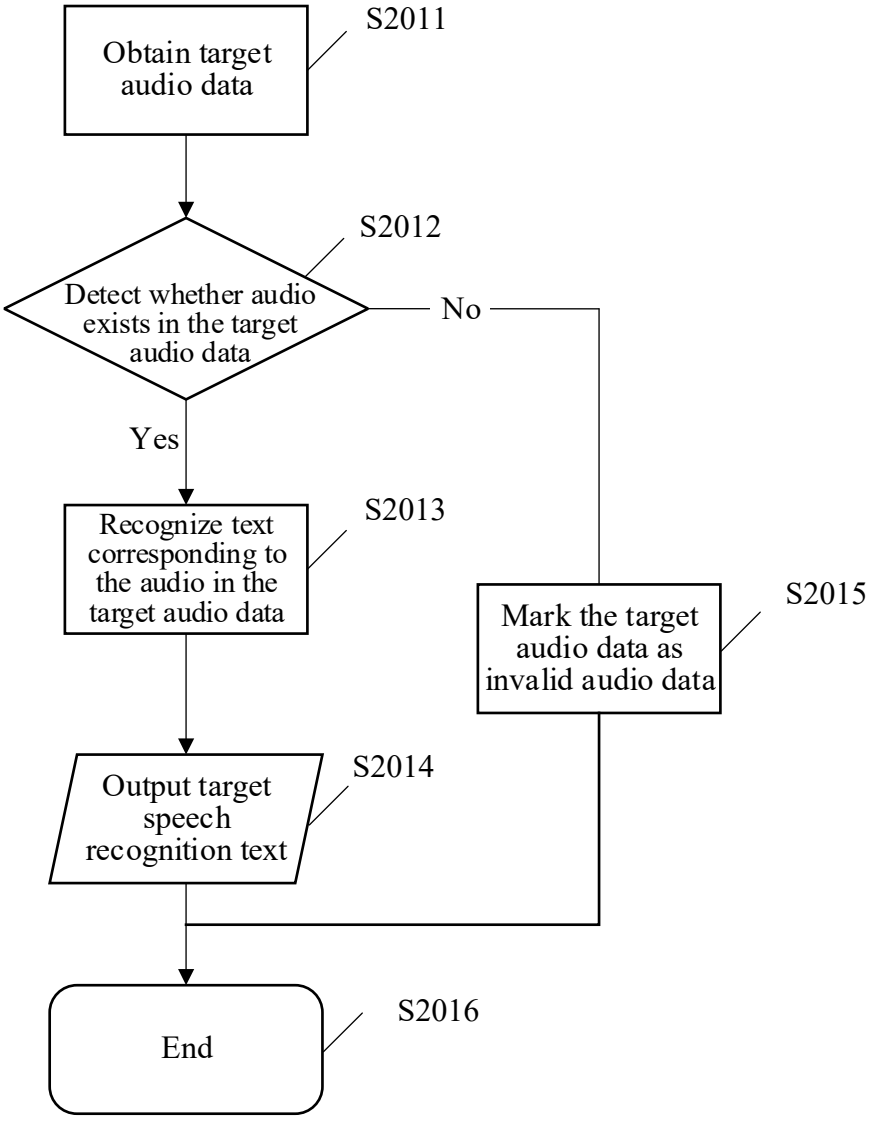

Obtain target audio data
S2011
Detect whether audio exists in the target audio data
S2012
No
Yes
Recognize text corresponding to the audio in the target audio data
S2013
Mark the target audio data as invalid audio data
S2015
Output target speech recognition text
S2014
End
S2016

FIG. 11

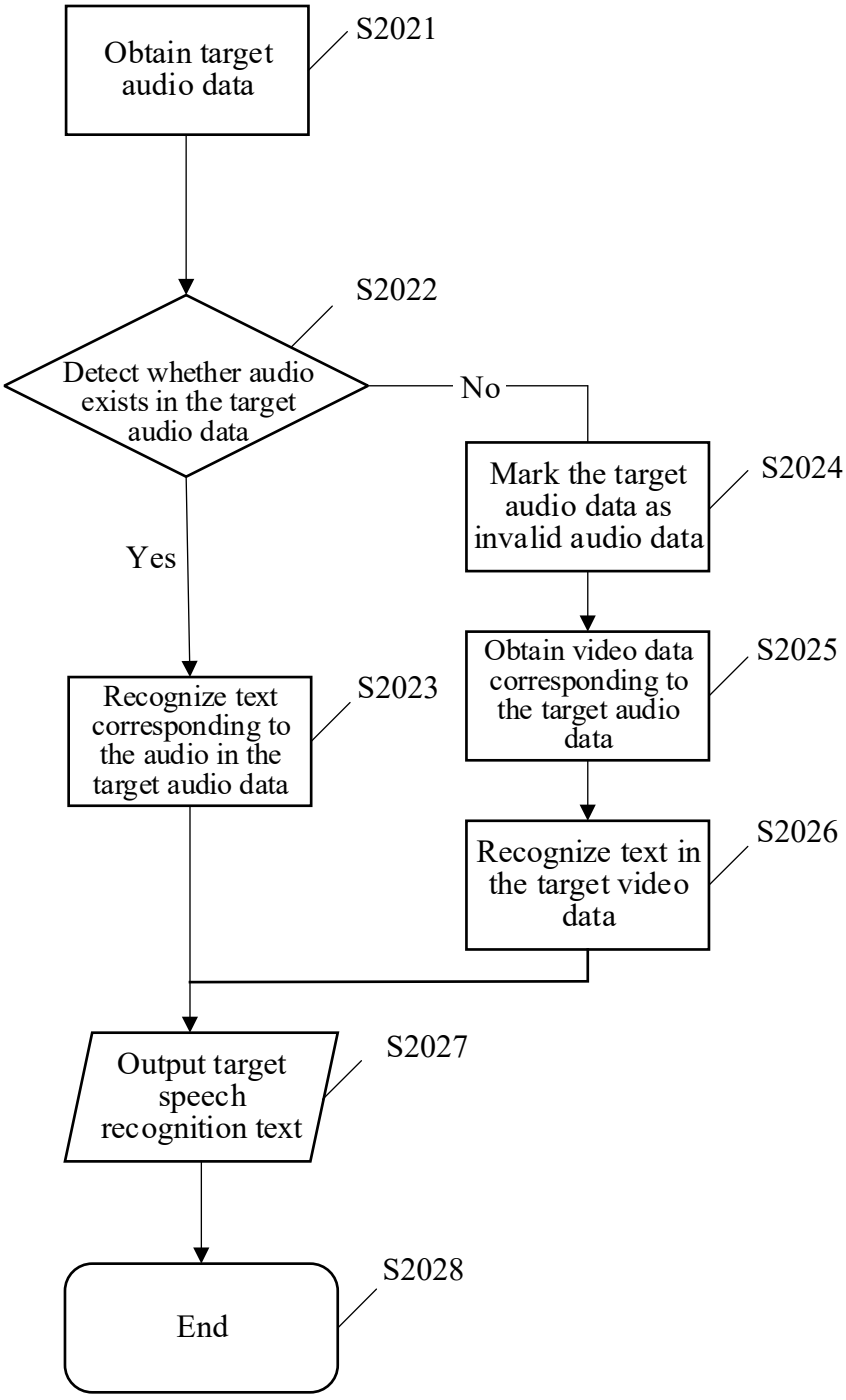

Obtain target audio data
S2021
Detect whether audio exists in the target audio data
S2022
No
Yes
Mark the target audio data as invalid audio data
S2024
Obtain video data corresponding to the target audio data
S2025
Recognize text corresponding to the audio in the target audio data
S2023
Recognize text in the target video data
S2026
Output target speech recognition text
S2027
End
S2028

FIG. 12

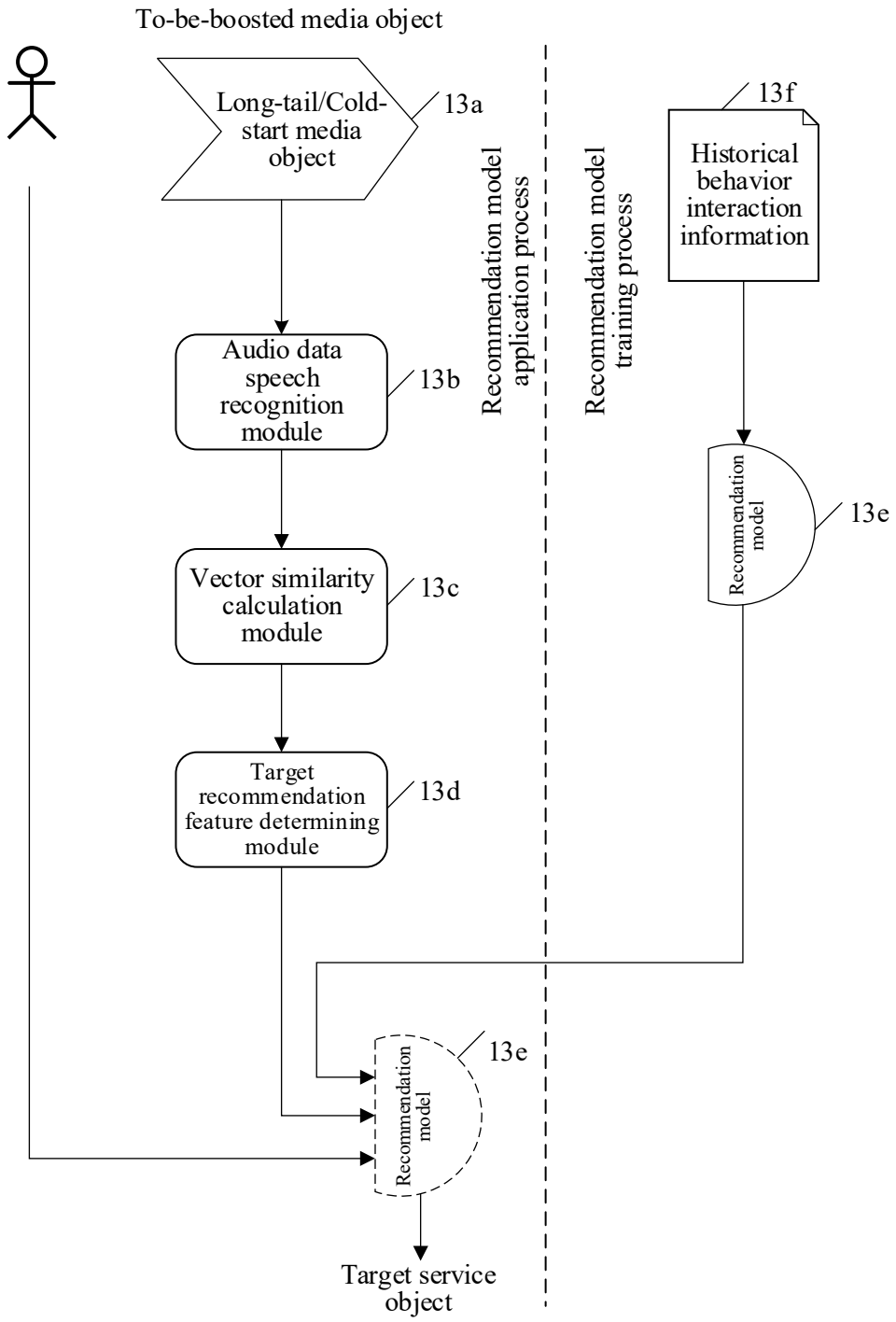

To-be-boosted media object
Long-tail/Cold-start media object
13a
Audio data speech recognition module
13b
Vector similarity calculation module
13c
Target recommendation feature determining module
13d
Recommendation model application process
Recommendation model training process
13f
Historical behavior interaction information
Recommendation model
13e
Recommendation model
13e
Target service object

FIG. 13

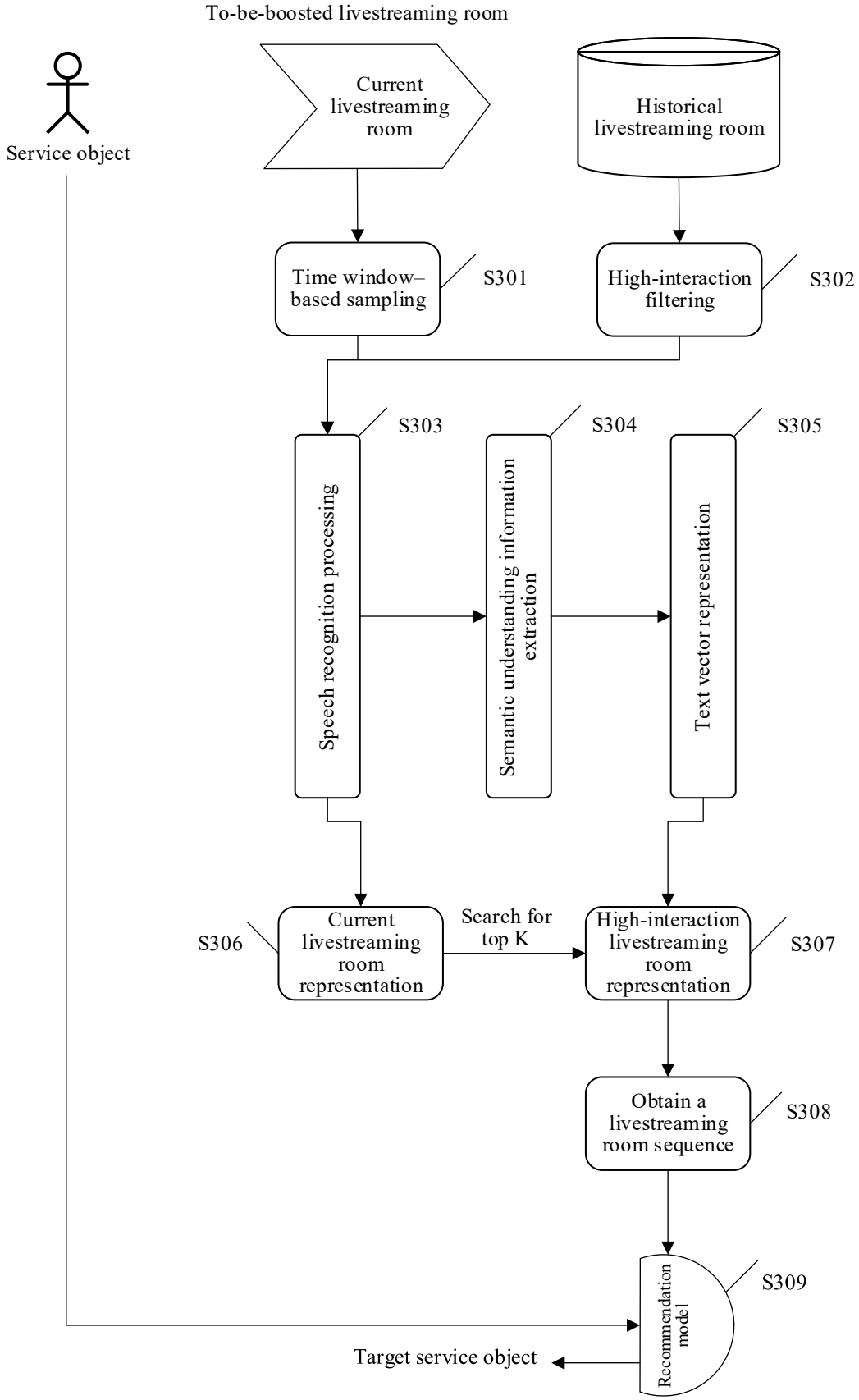

To-be-boosted livestreaming room
Service object
Current livestreaming room
Historical livestreaming room
Time window–based sampling
S301
High-interaction filtering
S302
S303
S304
S305
Speech recognition processing
Semantic understanding information extraction
Text vector representation
S306
Current livestreaming room representation
Search for top K
High-interaction livestreaming room representation
S307
Obtain a livestreaming room sequence
S308
Recommendation model
S309
Target service object

FIG. 14

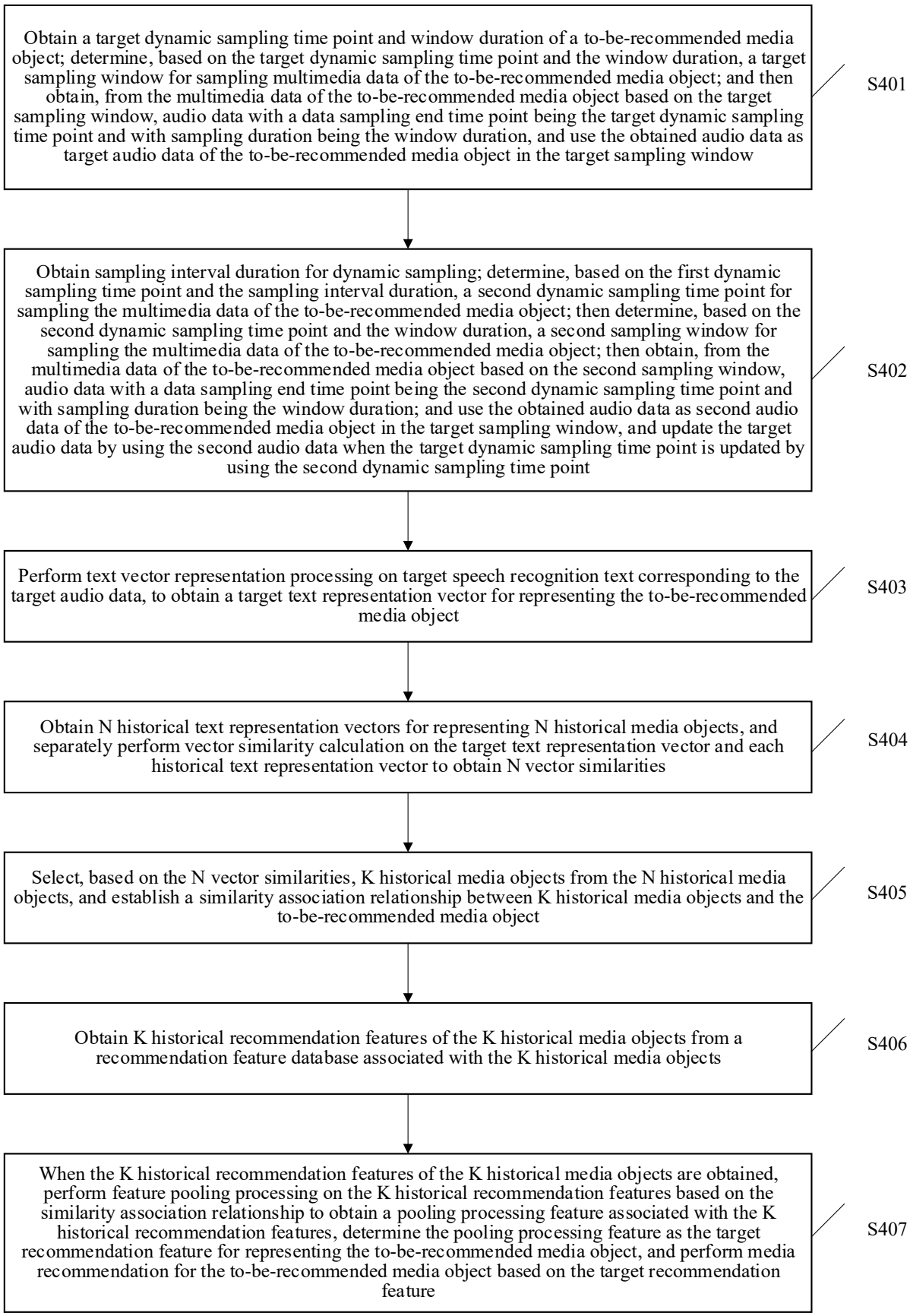

Obtain a target dynamic sampling time point and window duration of a to-be-recommended media object; determine, based on the target dynamic sampling time point and the window duration, a target sampling window for sampling multimedia data of the to-be-recommended media object; and then obtain, from the multimedia data of the to-be-recommended media object based on the target sampling window, audio data with a data sampling end time point being the target dynamic sampling time point and with sampling duration being the window duration, and use the obtained audio data as target audio data of the to-be-recommended media object in the target sampling window
S401
Obtain sampling interval duration for dynamic sampling; determine, based on the first dynamic sampling time point and the sampling interval duration, a second dynamic sampling time point for sampling the multimedia data of the to-be-recommended media object; then determine, based on the second dynamic sampling time point and the window duration, a second sampling window for sampling the multimedia data of the to-be-recommended media object; then obtain, from the multimedia data of the to-be-recommended media object based on the second sampling window, audio data with a data sampling end time point being the second dynamic sampling time point and with sampling duration being the window duration; and use the obtained audio data as second audio data of the to-be-recommended media object in the target sampling window, and update the target audio data by using the second audio data when the target dynamic sampling time point is updated by using the second dynamic sampling time point
S402
Perform text vector representation processing on target speech recognition text corresponding to the target audio data, to obtain a target text representation vector for representing the to-be-recommended media object
S403
Obtain N historical text representation vectors for representing N historical media objects, and separately perform vector similarity calculation on the target text representation vector and each historical text representation vector to obtain N vector similarities
S404
Select, based on the N vector similarities, K historical media objects from the N historical media objects, and establish a similarity association relationship between K historical media objects and the to-be-recommended media object
S405
Obtain K historical recommendation features of the K historical media objects from a recommendation feature database associated with the K historical media objects
S406
When the K historical recommendation features of the K historical media objects are obtained, perform feature pooling processing on the K historical recommendation features based on the similarity association relationship to obtain a pooling processing feature associated with the K historical recommendation features, determine the pooling processing feature as the target recommendation feature for representing the to-be-recommended media object, and perform media recommendation for the to-be-recommended media object based on the target recommendation feature
S407

FIG. 15

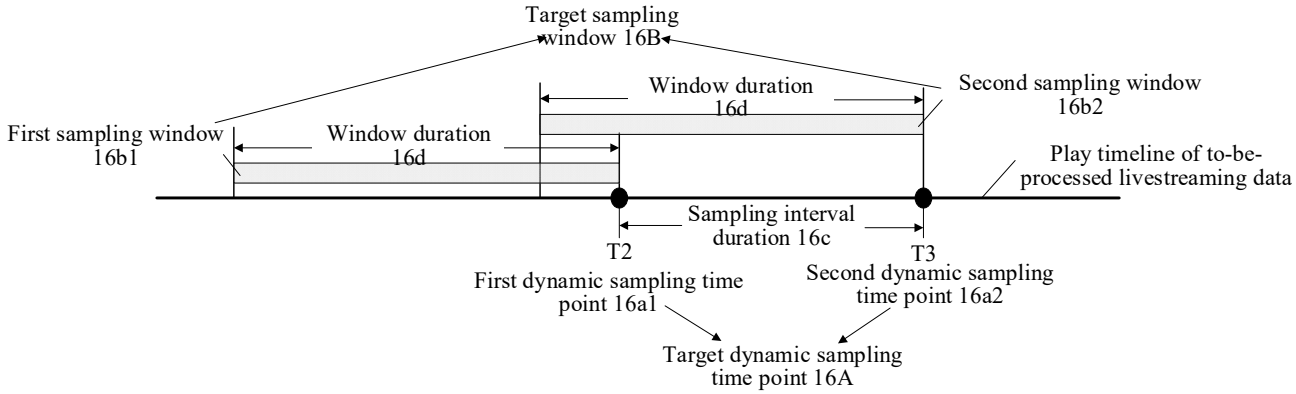

Target sampling window 16B
Window duration 16d
Second sampling window 16b2
First sampling window 16b1
Window duration 16d
Play timeline of to-be-processed livestreaming data
Sampling interval duration 16c
T2
T3
First dynamic sampling time point 16a1
Second dynamic sampling time point 16a2
Target dynamic sampling time point 16A

FIG. 16

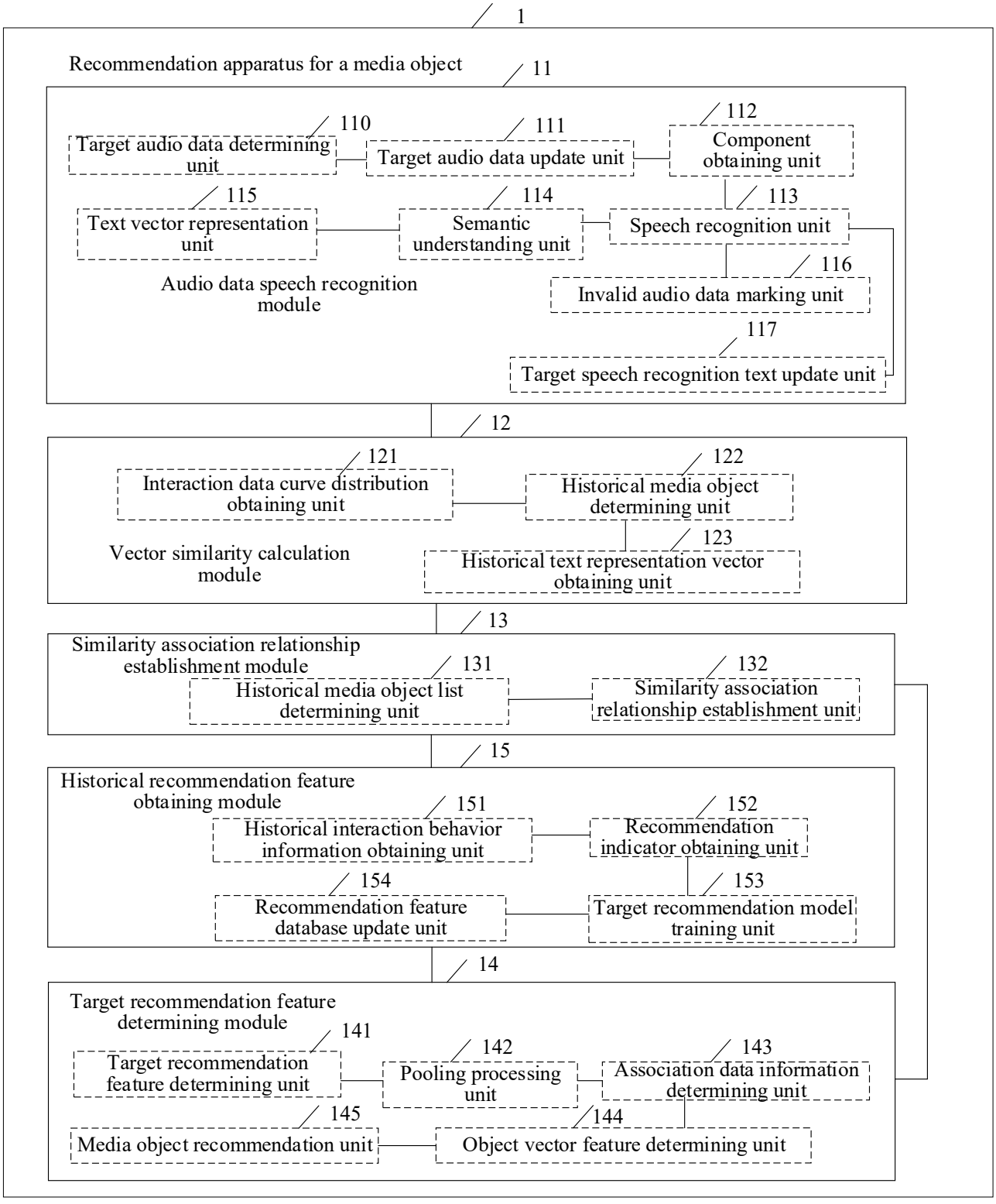

1
Recommendation apparatus for a media object
11
110
Target audio data determining unit
111
Target audio data update unit
112
Component obtaining unit
115
Text vector representation unit
114
Semantic understanding unit
113
Speech recognition unit
116
Invalid audio data marking unit
117
Target speech recognition text update unit
Audio data speech recognition module
12
121
Interaction data curve distribution obtaining unit
122
Historical media object determining unit
123
Historical text representation vector obtaining unit
Vector similarity calculation module
13
Similarity association relationship establishment module
131
Historical media object list determining unit
132
Similarity association relationship establishment unit
15
Historical recommendation feature obtaining module
151
Historical interaction behavior information obtaining unit
152
Recommendation indicator obtaining unit
154
Recommendation feature database update unit
153
Target recommendation model training unit
14
Target recommendation feature determining module
141
Target recommendation feature determining unit
142
Pooling processing unit
143
Association data information determining unit
145
Media object recommendation unit
144
Object vector feature determining unit

FIG. 17

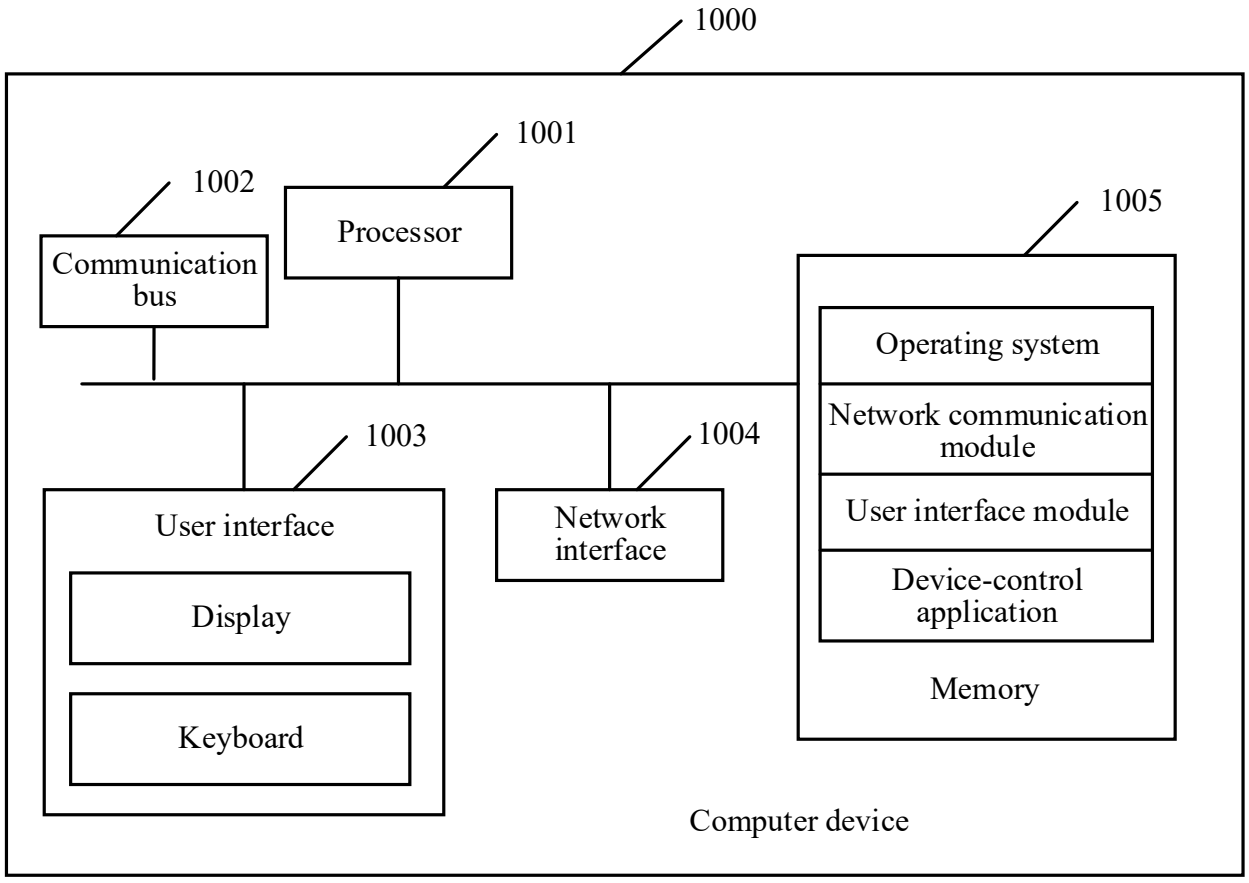

1000
1001
1002
Processor
Communication bus
1005
Operating system
Network communication module
User interface module
Device-control application
Memory
1003
1004
User interface
Display
Keyboard
Network interface
Computer device

FIG. 18