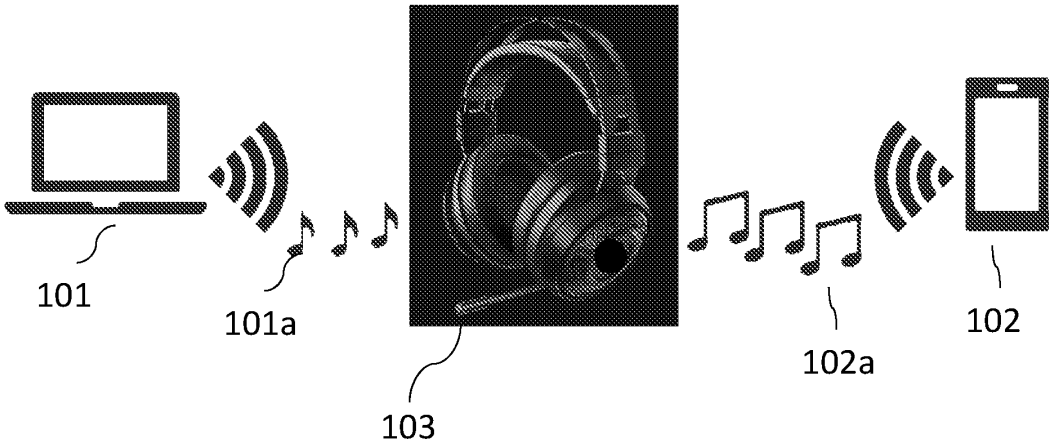


FIG. 1A

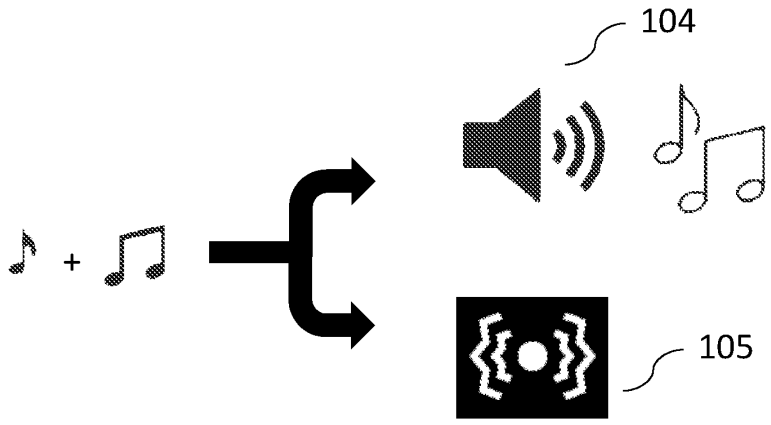


FIG. 1B

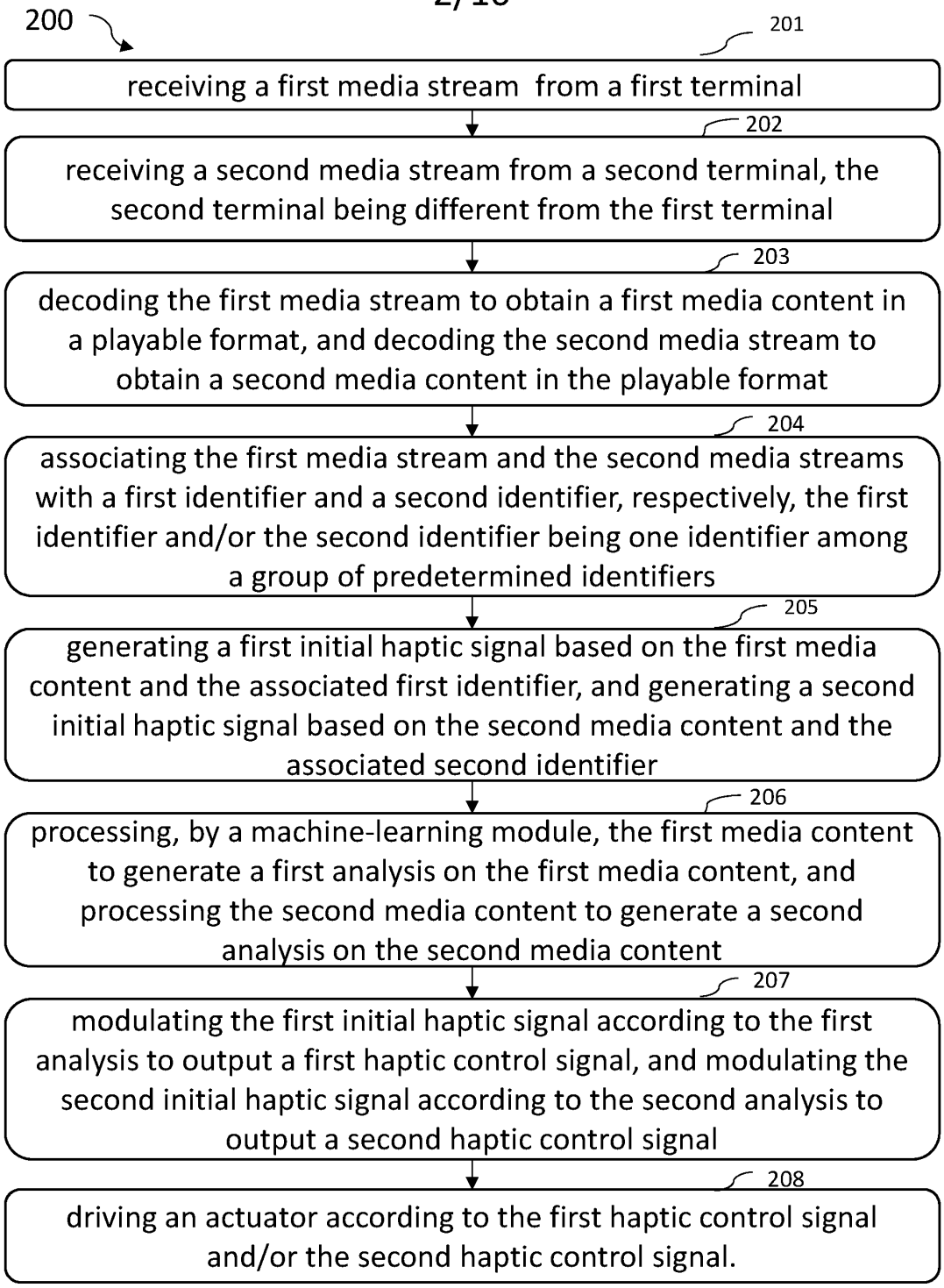

200
201
receiving a first media stream from a first terminal
202
receiving a second media stream from a second terminal, the second terminal being different from the first terminal
203
decoding the first media stream to obtain a first media content in a playable format, and decoding the second media stream to obtain a second media content in the playable format
204
associating the first media stream and the second media streams with a first identifier and a second identifier, respectively, the first identifier and/or the second identifier being one identifier among a group of predetermined identifiers
205
generating a first initial haptic signal based on the first media content and the associated first identifier, and generating a second initial haptic signal based on the second media content and the associated second identifier
206
processing, by a machine-learning module, the first media content to generate a first analysis on the first media content, and processing the second media content to generate a second analysis on the second media content
207
modulating the first initial haptic signal according to the first analysis to output a first haptic control signal, and modulating the second initial haptic signal according to the second analysis to output a second haptic control signal
208
driving an actuator according to the first haptic control signal and/or the second haptic control signal.

FIG. 2

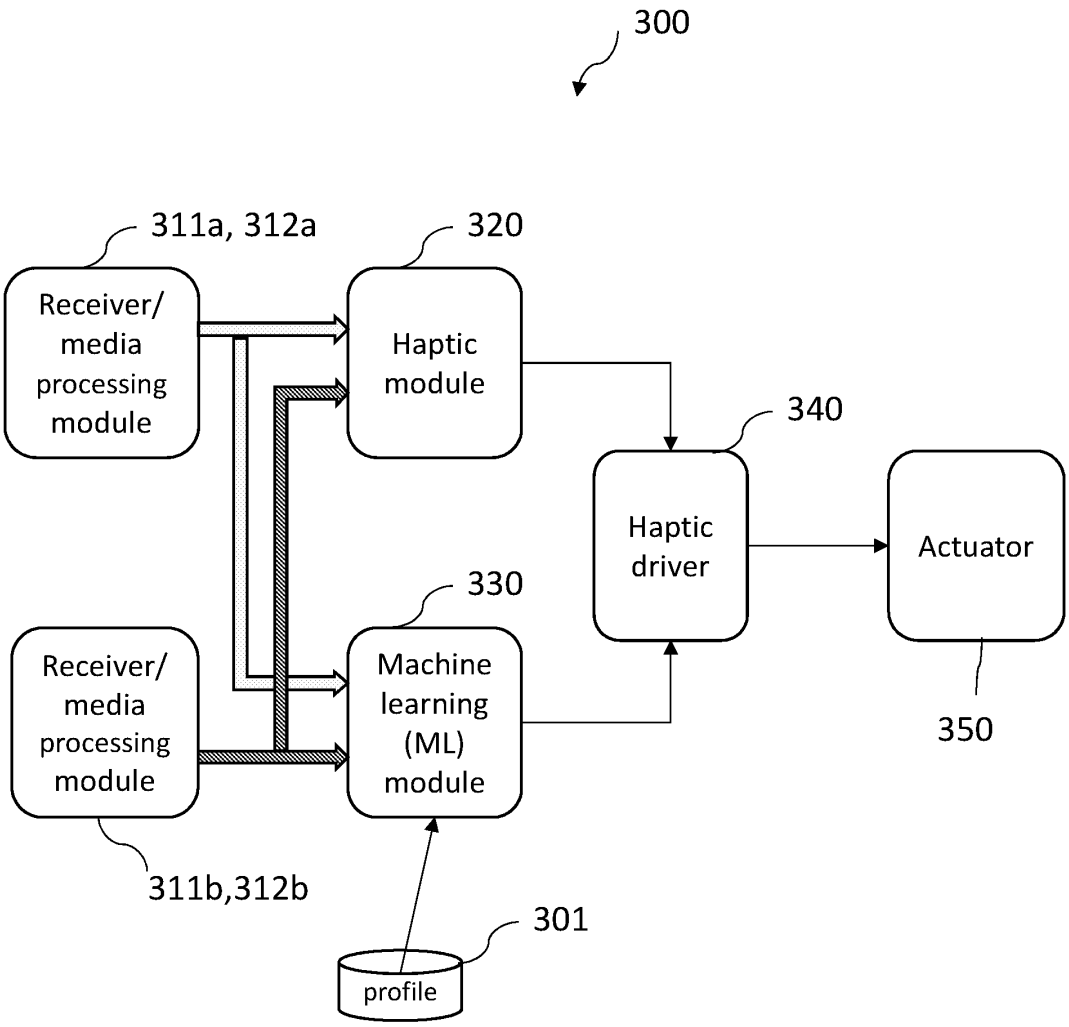

300
311a, 312a
320
Receiver/ media processing module
Haptic module
340
Haptic driver
Actuator
330
Receiver/ media processing module
Machine learning (ML) module
350
311b,312b
301
profile

FIG. 3

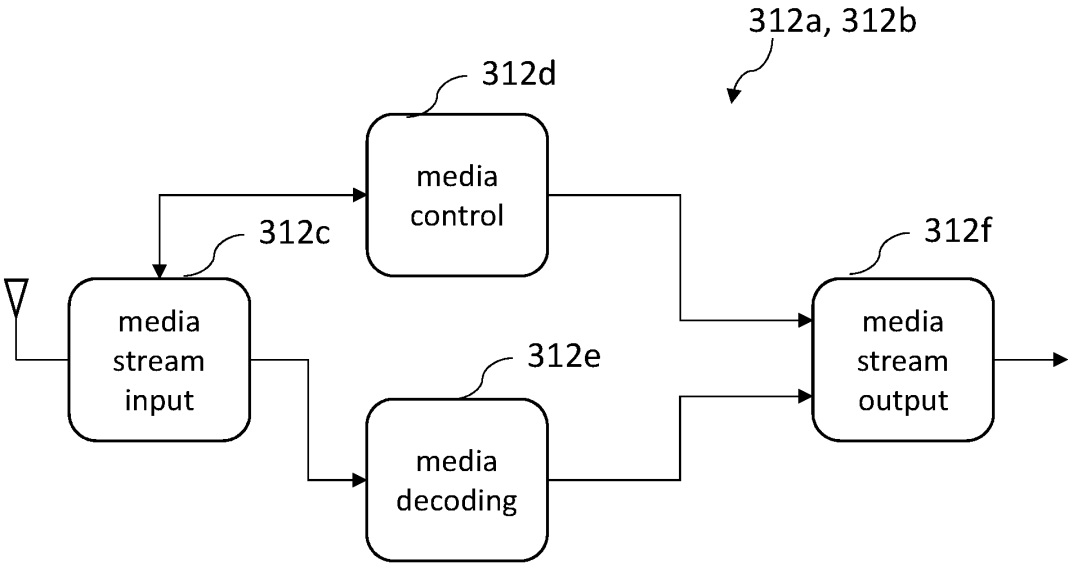

312a, 312b
312d
media control
312c
312f
media stream input
media stream output
312e
media decoding

FIG. 4

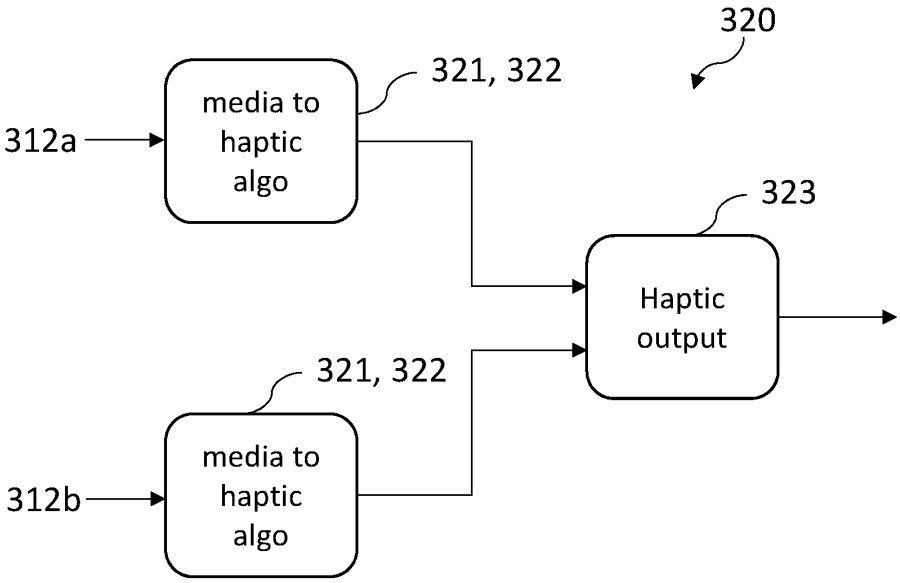

320
321, 322
media to haptic algo
312a
323
Haptic output
321, 322
media to haptic algo
312b

FIG. 5A

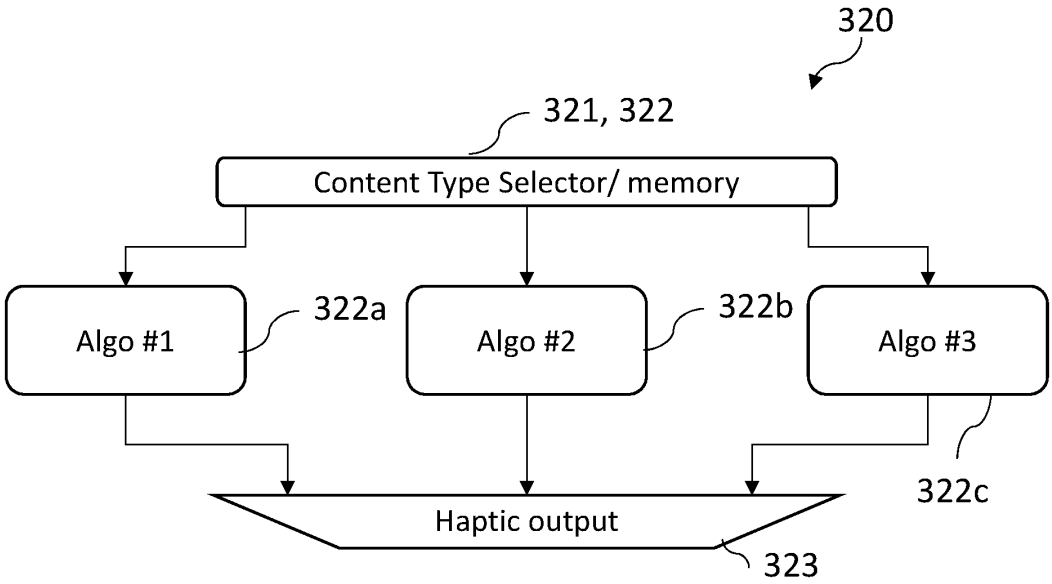

320
321, 322
Content Type Selector/ memory
Algo #1
322a
Algo #2
322b
Algo #3
322c
Haptic output
323

FIG. 5B

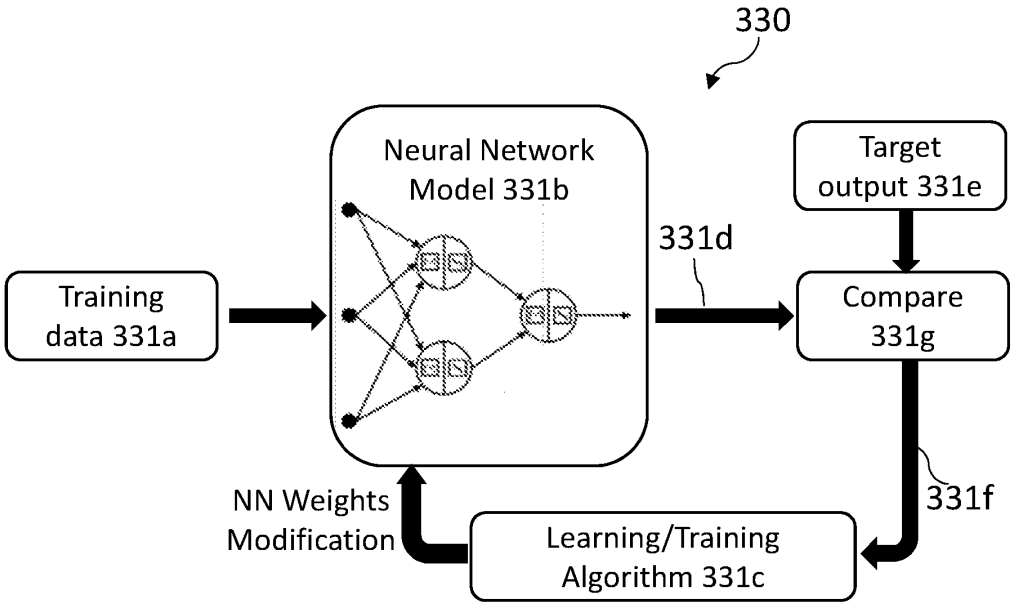

330
Neural Network Model 331b
Target output 331e
331d
Training data 331a
Compare 331g
331f
NN Weights Modification
Learning/Training Algorithm 331c

FIG. 6A

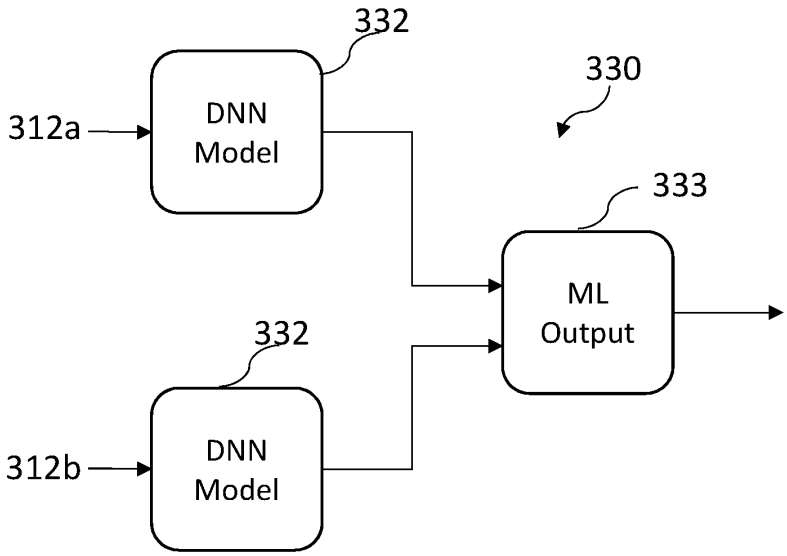

332
330
312a
DNN Model
333
ML Output
332
312b
DNN Model

FIG. 6B

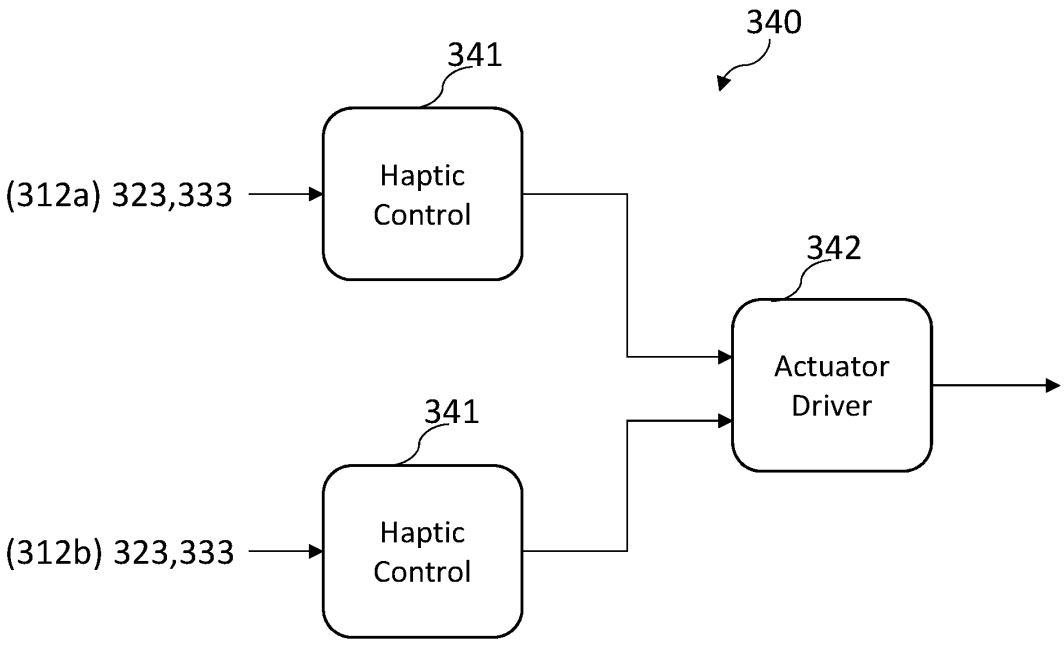

340
341
(312a) 323,333
Haptic Control
342
Actuator Driver
341
(312b) 323,333
Haptic Control

FIG. 7

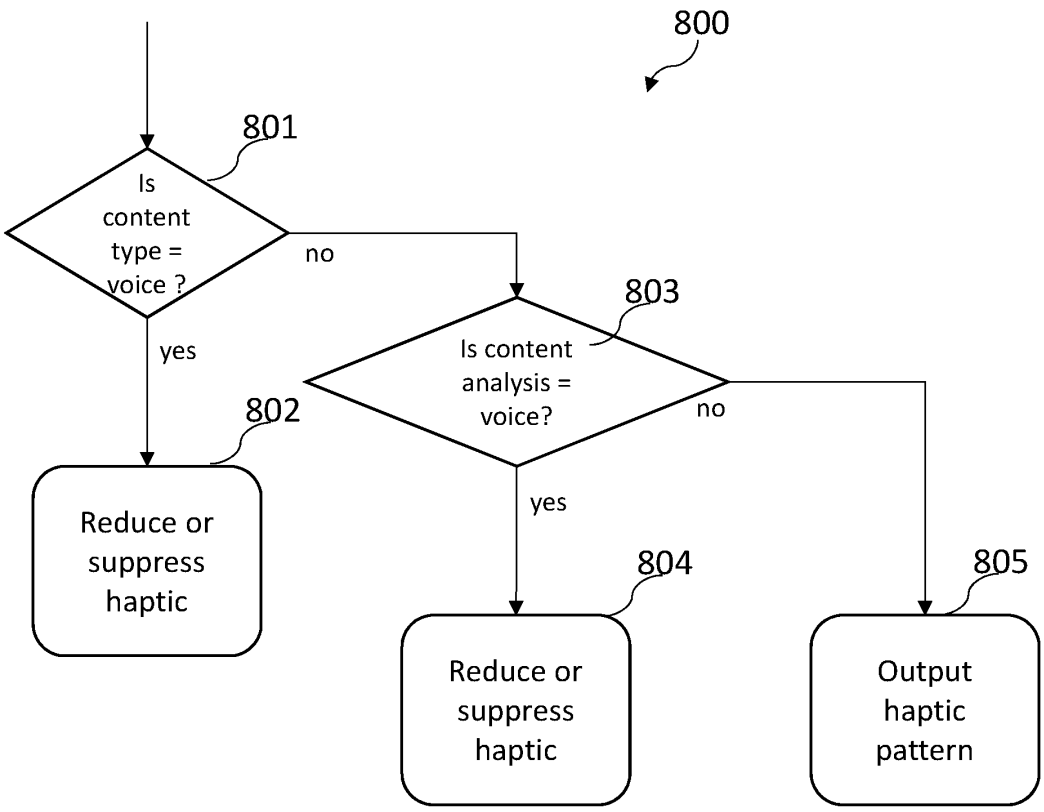

800
801
Is content type = voice ?
no
yes
803
Is content analysis = voice?
no
yes
802
Reduce or suppress haptic
804
Reduce or suppress haptic
805
Output haptic pattern

FIG. 8

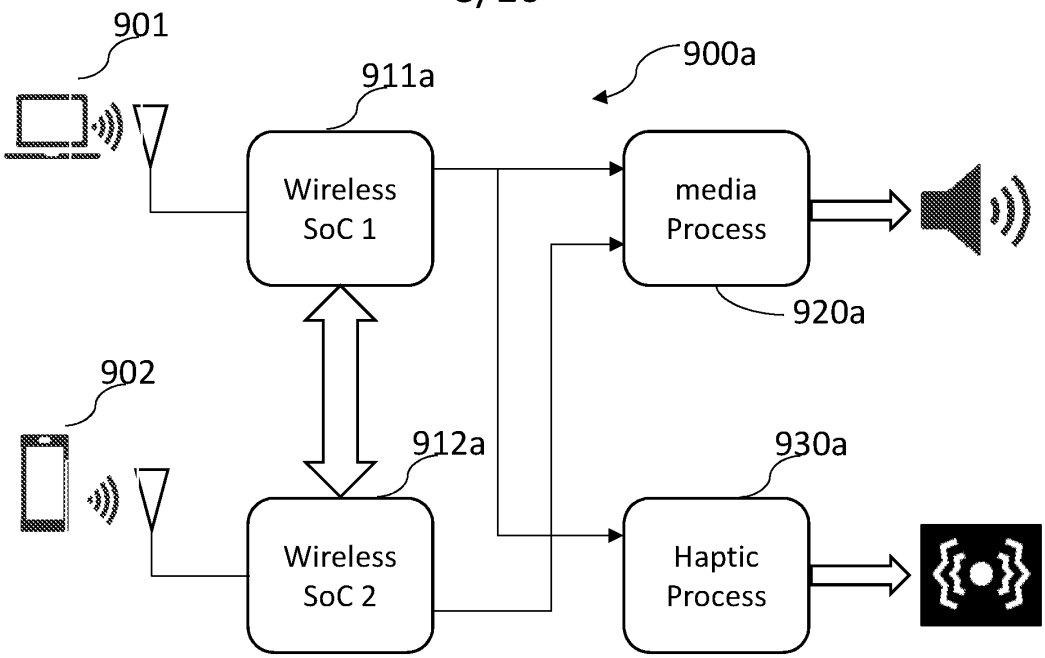

901
911a
900a
Wireless SoC 1
media Process
920a
902
912a
930a
Wireless SoC 2
Haptic Process

FIG. 9A

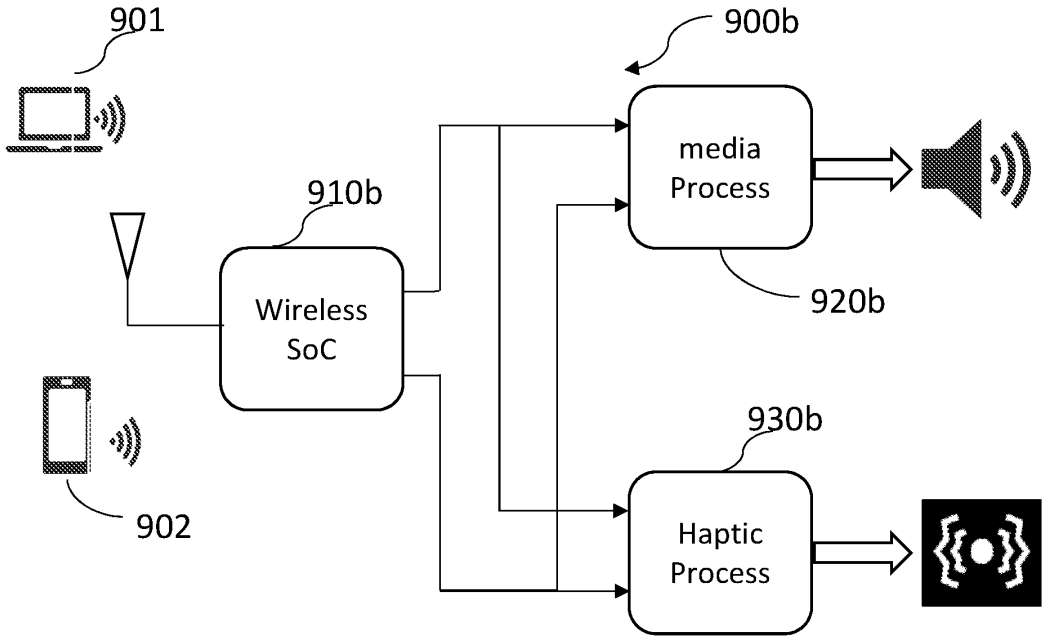

901
900b
media Process
910b
Wireless SoC
920b
930b
902
Haptic Process

FIG. 9B

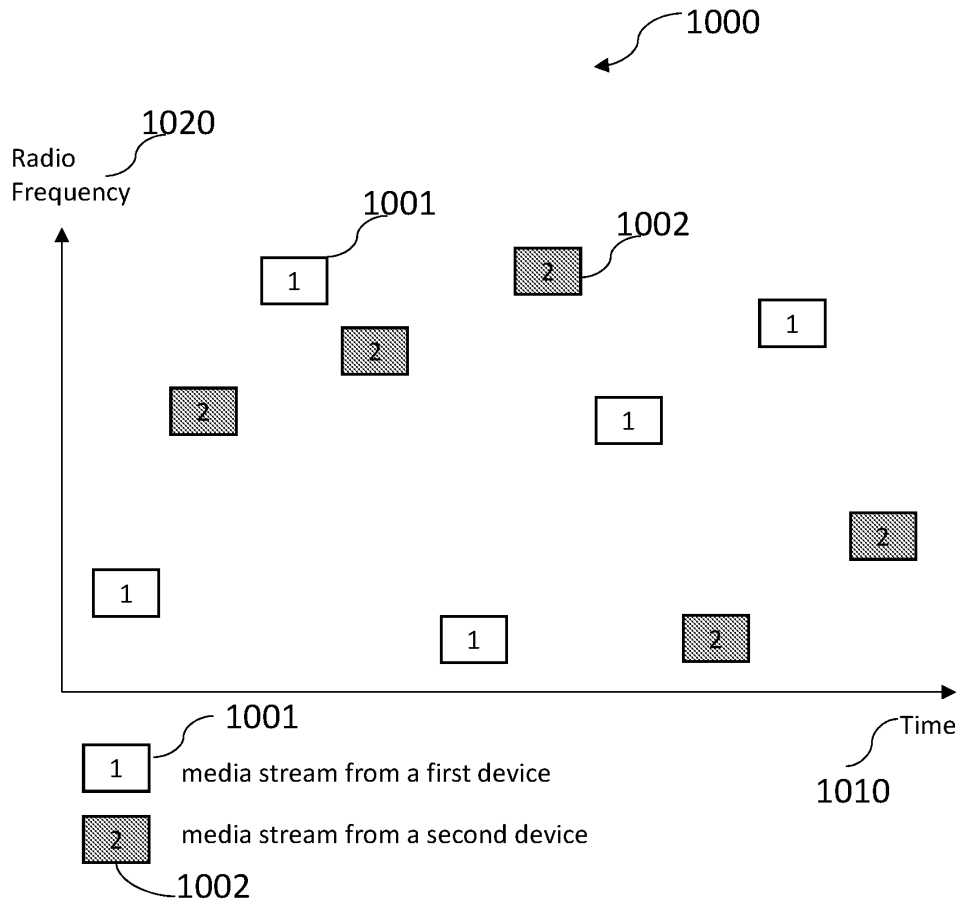

1000
1020
Radio
Frequency
1001
1002
1
2
1
2
2
1
1
2
1
1
2
Time
1010
1001
1
media stream from a first device
2
media stream from a second device
1002

FIG. 10

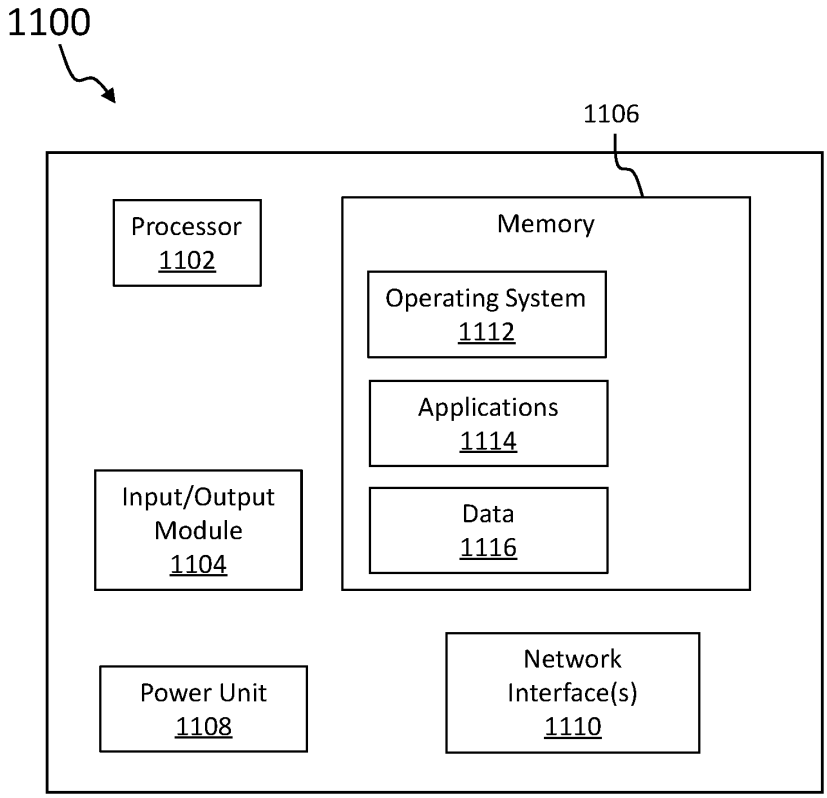

1100
1106
Processor
1102
Memory
Operating System
1112
Applications
1114
Data
1116
Input/Output
Module
1104
Power Unit
1108
Network
Interface(s)
1110

FIG. 11