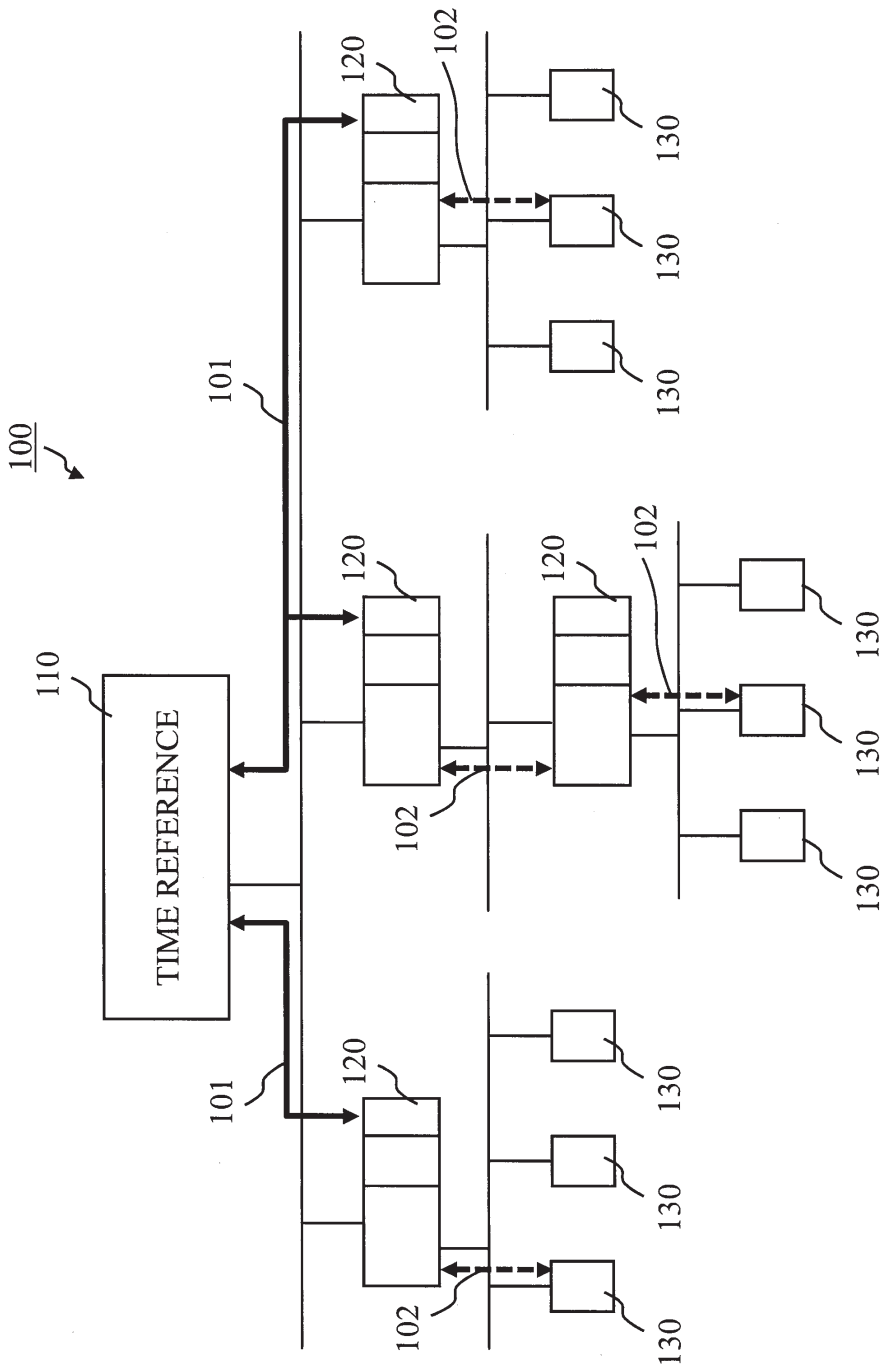
Fig. 1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TIME REFERENCE
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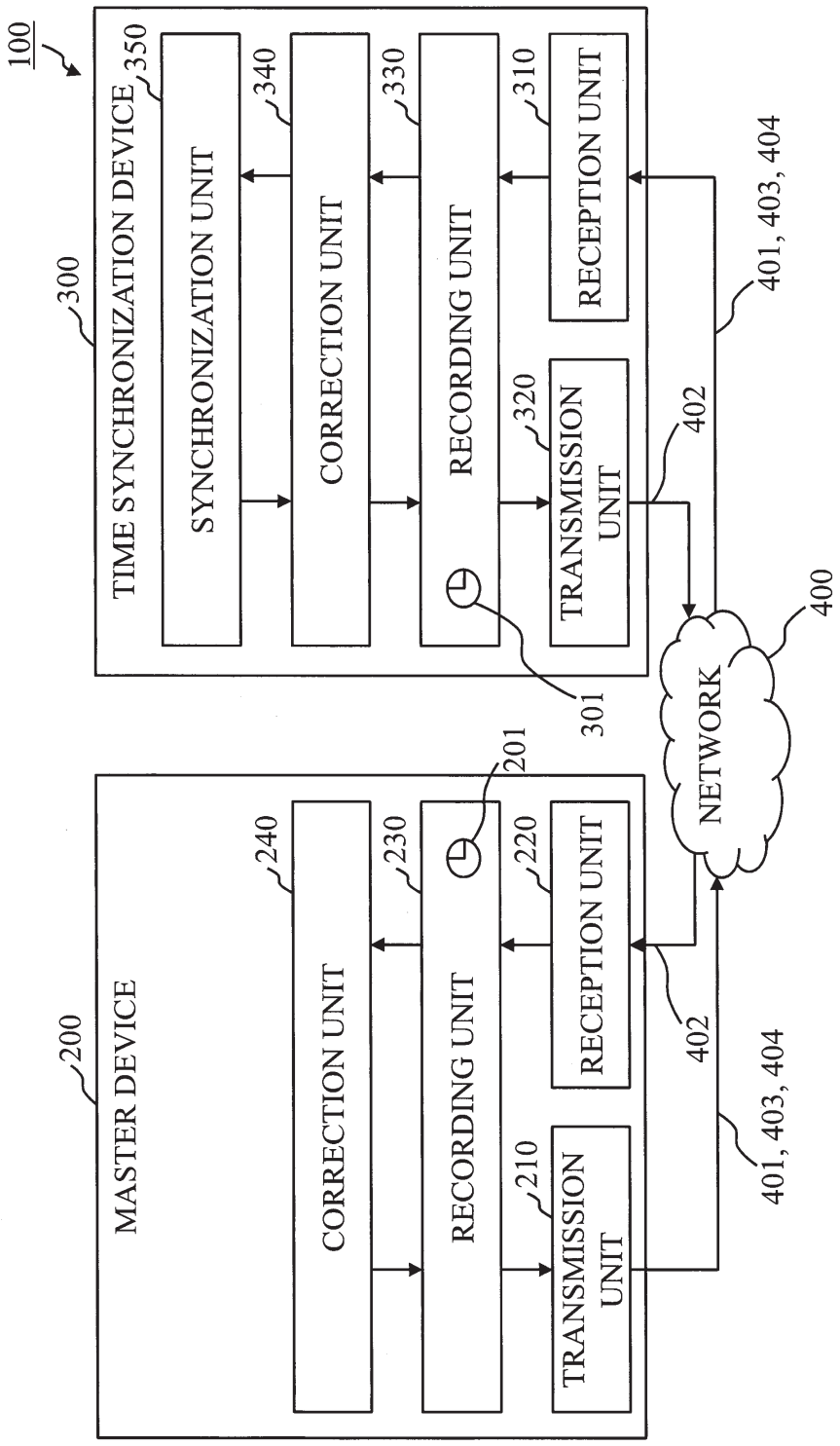
Fig. 2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TIME SYNCHRONIZATION DEVICE
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SYNCHRONIZATION UNIT
350
CORRECTION UNIT
340
RECORDING UNIT
330
RECEPTION UNIT
310
TRANSMISSION UNIT
320
301
402
401, 403, 404
NETWORK
400
MASTER DEVICE
200
CORRECTION UNIT
240
RECORDING UNIT
230
201
RECEPTION UNIT
220
TRANSMISSION UNIT
210
402
401, 403, 404

Fig. 3

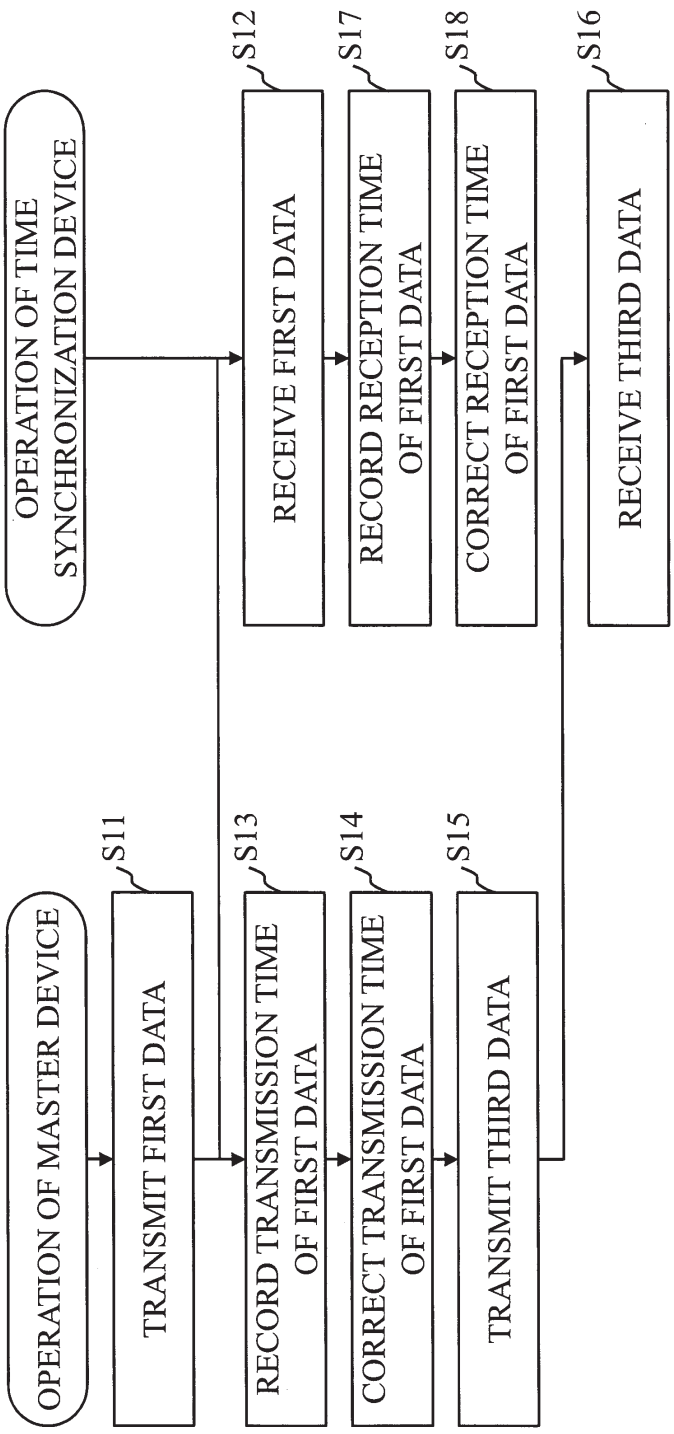

OPERATION OF MASTER DEVICE
TRANSMIT FIRST DATA
S11
RECORD TRANSMISSION TIME OF FIRST DATA
S13
CORRECT TRANSMISSION TIME OF FIRST DATA
S14
TRANSMIT THIRD DATA
S15
OPERATION OF TIME SYNCHRONIZATION DEVICE
RECEIVE FIRST DATA
S12
RECORD RECEPTION TIME OF FIRST DATA
S17
CORRECT RECEPTION TIME OF FIRST DATA
S18
RECEIVE THIRD DATA
S16

Fig. 4

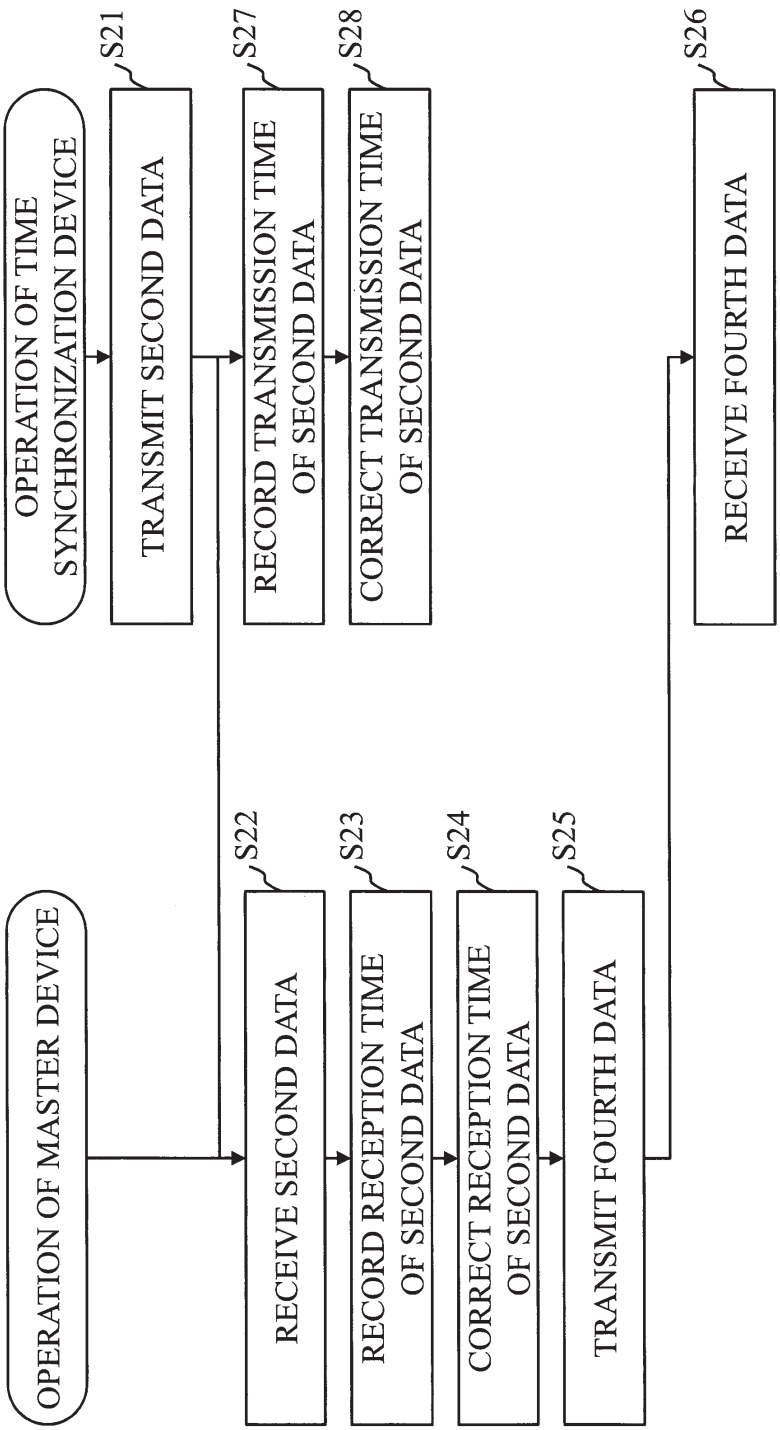

OPERATION OF MASTER DEVICE
OPERATION OF TIME SYNCHRONIZATION DEVICE
S21
TRANSMIT SECOND DATA
S22
RECEIVE SECOND DATA
S23
RECORD RECEPTION TIME OF SECOND DATA
S24
CORRECT RECEPTION TIME OF SECOND DATA
S25
TRANSMIT FOURTH DATA
S26
RECEIVE FOURTH DATA
S27
RECORD TRANSMISSION TIME OF SECOND DATA
S28
CORRECT TRANSMISSION TIME OF SECOND DATA

Fig. 5

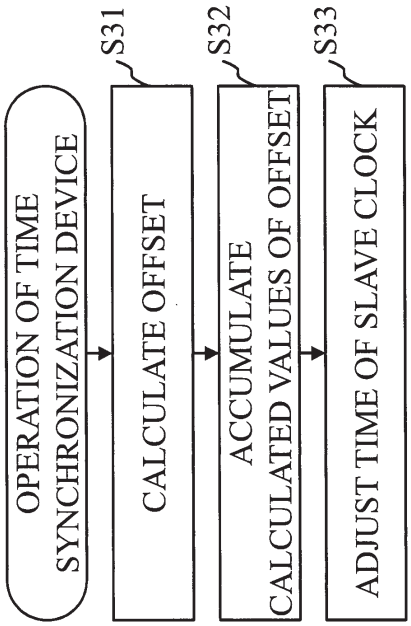
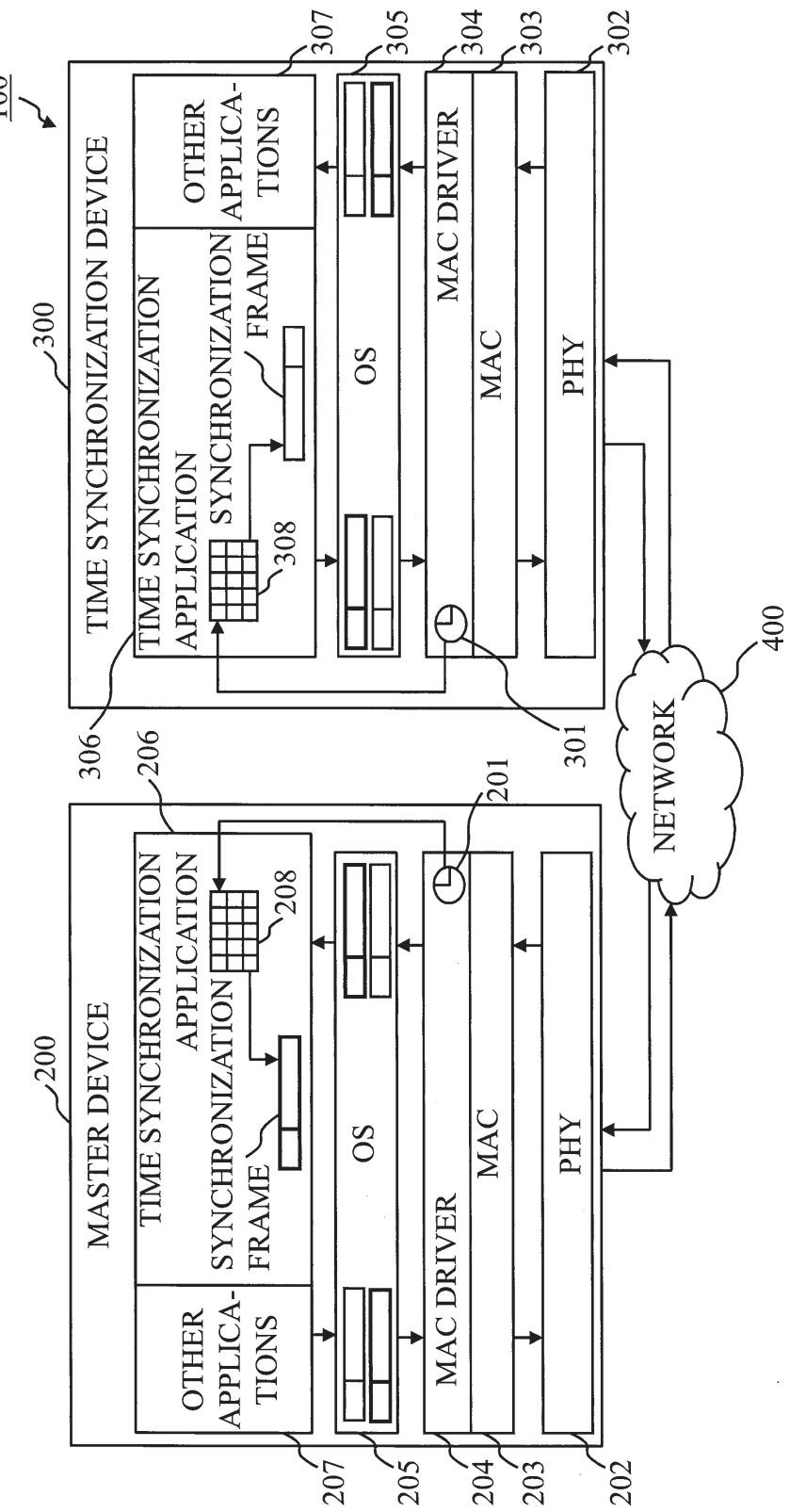

OPERATION OF TIME SYNCHRONIZATION DEVICE
S31
CALCULATE OFFSET
S32
ACCUMULATE CALCULATED VALUES OF OFFSET
S33
ADJUST TIME OF SLAVE CLOCK

Fig. 6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TIME SYNCHRONIZATION DEVICE
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TIME SYNCHRONIZATION APPLICATION
SYNCHRONIZATION FRAME
308
OTHER APPLICATIONS
307
OS
305
MAC DRIVER
304
MAC
303
PHY
302
306
301
MASTER DEVICE
200
TIME SYNCHRONIZATION APPLICATION
SYNCHRONIZATION FRAME
208
206
OTHER APPLICATIONS
207
OS
205
MAC DRIVER
204
MAC
203
PHY
202
201
NETWORK
400

Fig. 7

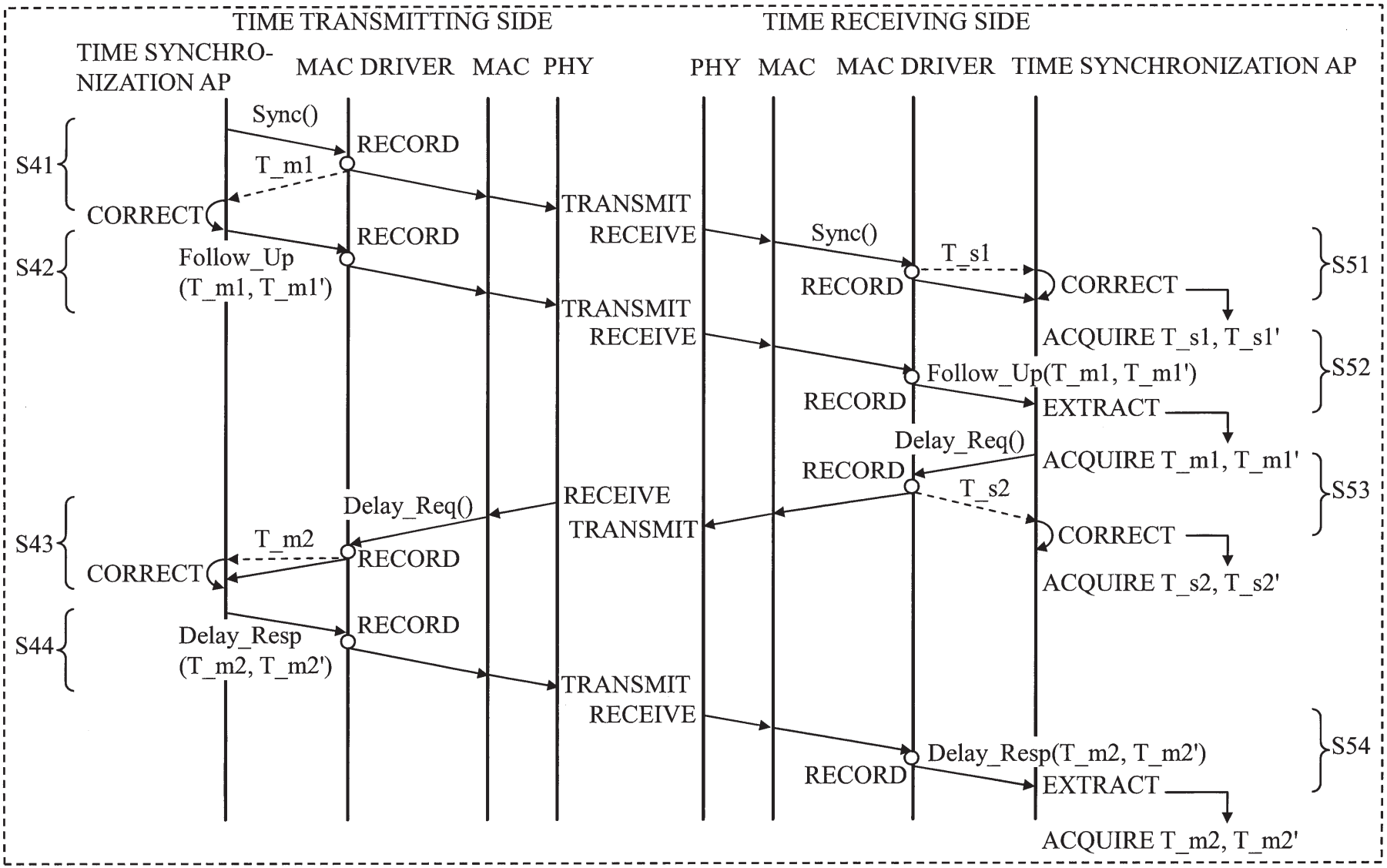
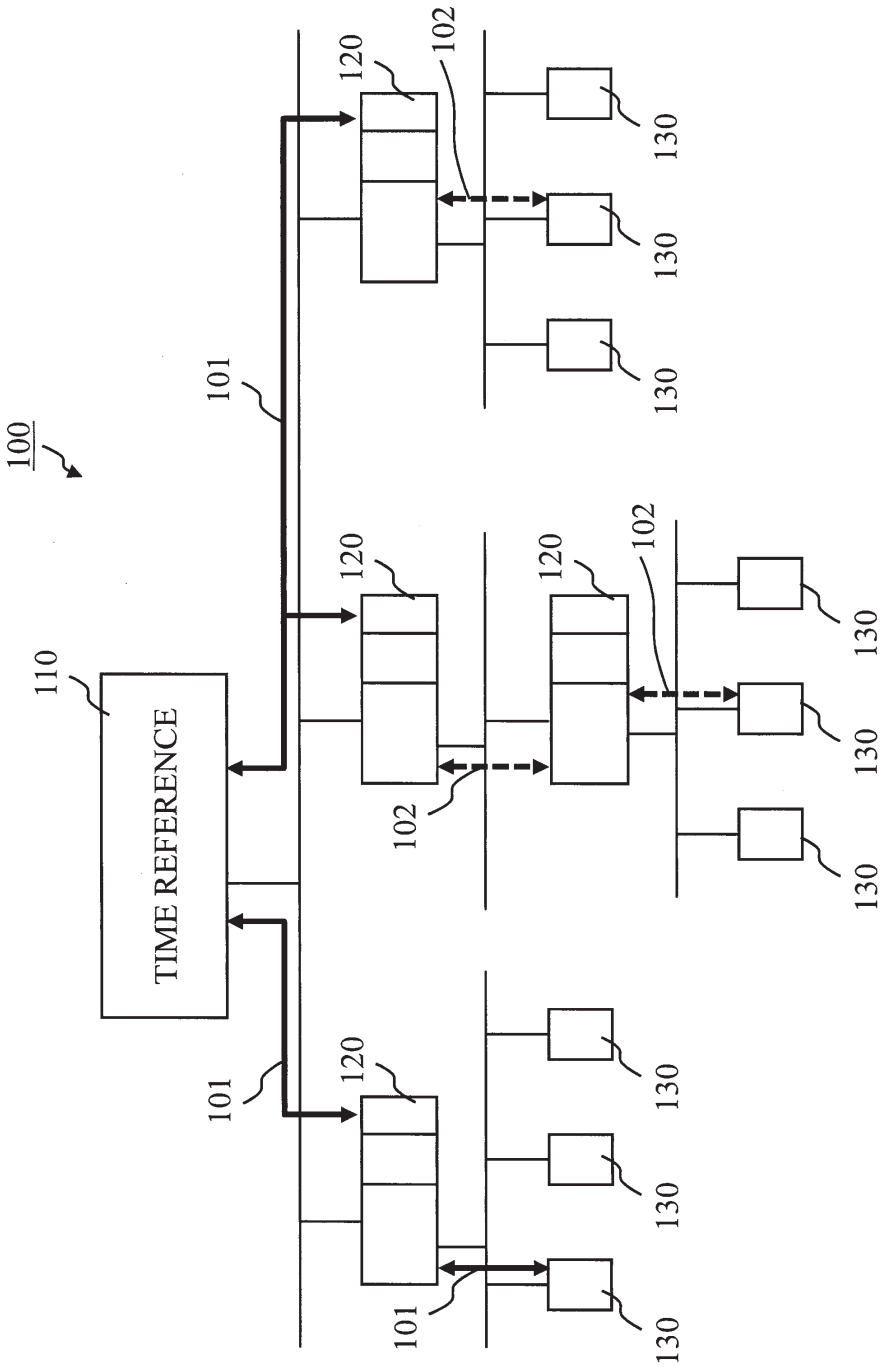

TIME TRANSMITTING SIDE
TIME RECEIVING SIDE
TIME SYNCHRO-NIZATION AP
MAC DRIVER
MAC
PHY
PHY
MAC
MAC DRIVER
TIME SYNCHRONIZATION AP
S41
Sync()
RECORD
T_m1
CORRECT
S42
RECORD
Follow_Up
(T_m1, T_m1')
TRANSMIT
RECEIVE
TRANSMIT
RECEIVE
Sync()
RECORD
T_s1
CORRECT
S51
ACQUIRE T_s1, T_s1'
S52
Follow_Up(T_m1, T_m1')
RECORD
EXTRACT
Delay_Req()
RECORD
ACQUIRE T_m1, T_m1'
S53
T_s2
S43
Delay_Req()
T_m2
CORRECT
RECORD
RECEIVE
TRANSMIT
CORRECT
ACQUIRE T_s2, T_s2'
S44
Delay_Resp
(T_m2, T_m2')
RECORD
TRANSMIT
RECEIVE
Delay_Resp(T_m2, T_m2')
RECORD
EXTRACT
S54
ACQUIRE T_m2, T_m2'

Fig. 8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TIME REFERENCE
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Fig. 9

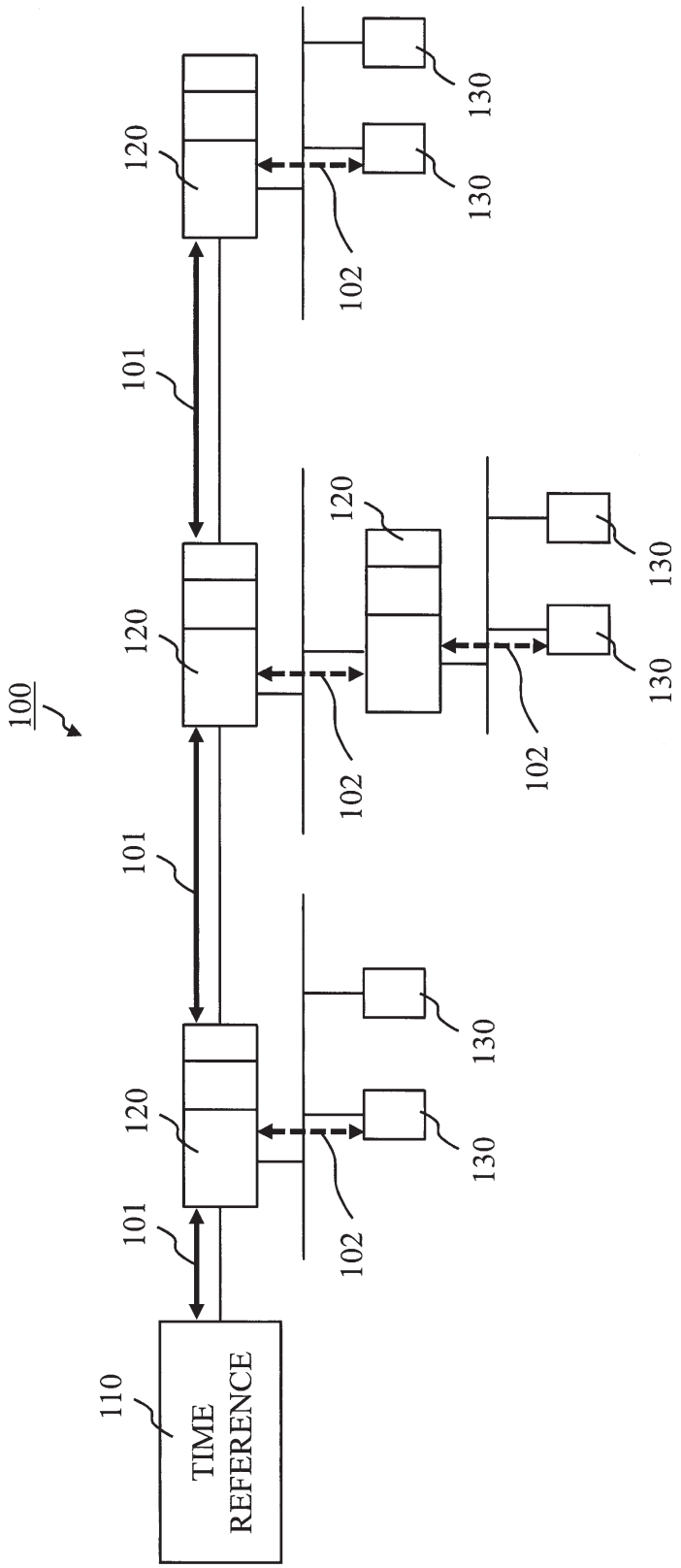
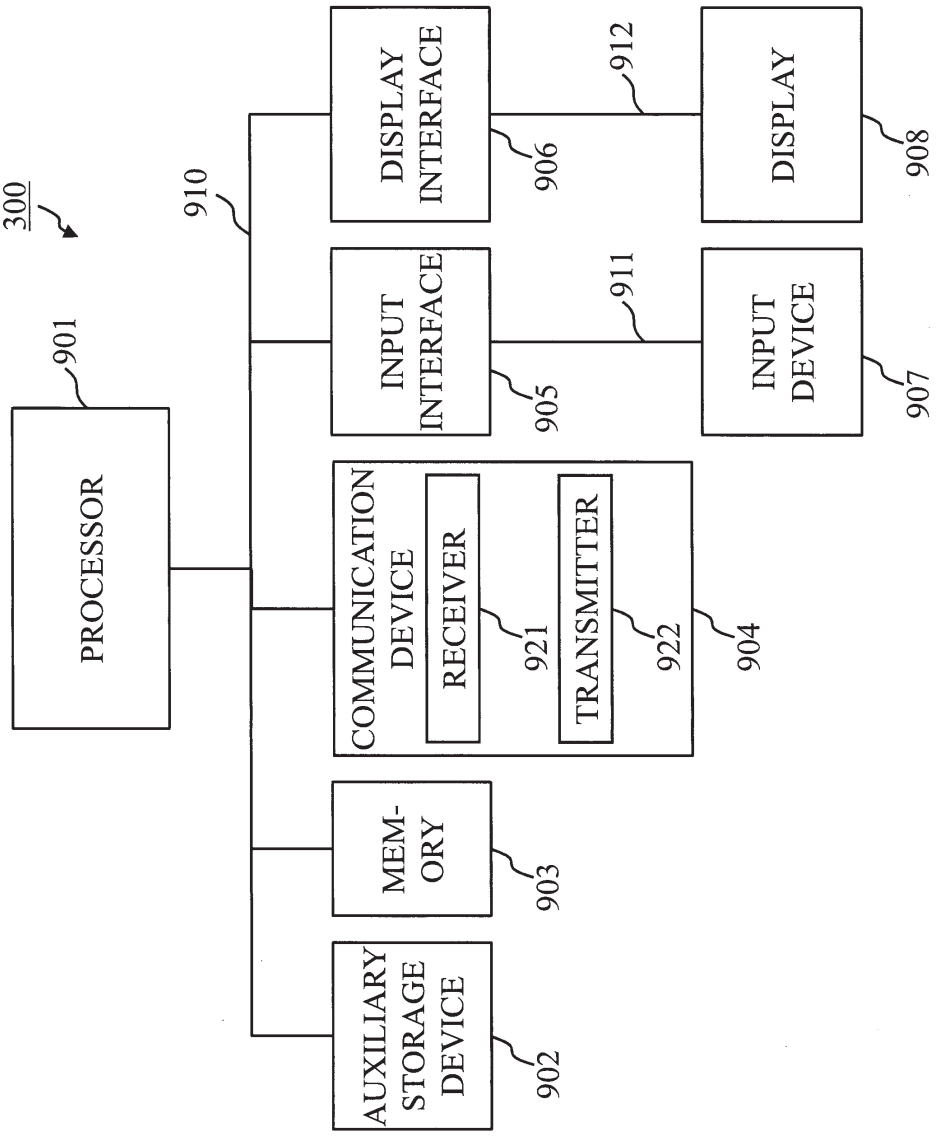


Fig. 10


300
PROCESSOR
901
910
AUXILIARY STORAGE DEVICE
902
MEM-ORY
903
COMMUNICATION DEVICE
RECEIVER
921
TRANSMITTER
922
904
INPUT INTERFACE
905
911
INPUT DEVICE
907
DISPLAY INTERFACE
906
912
DISPLAY
908