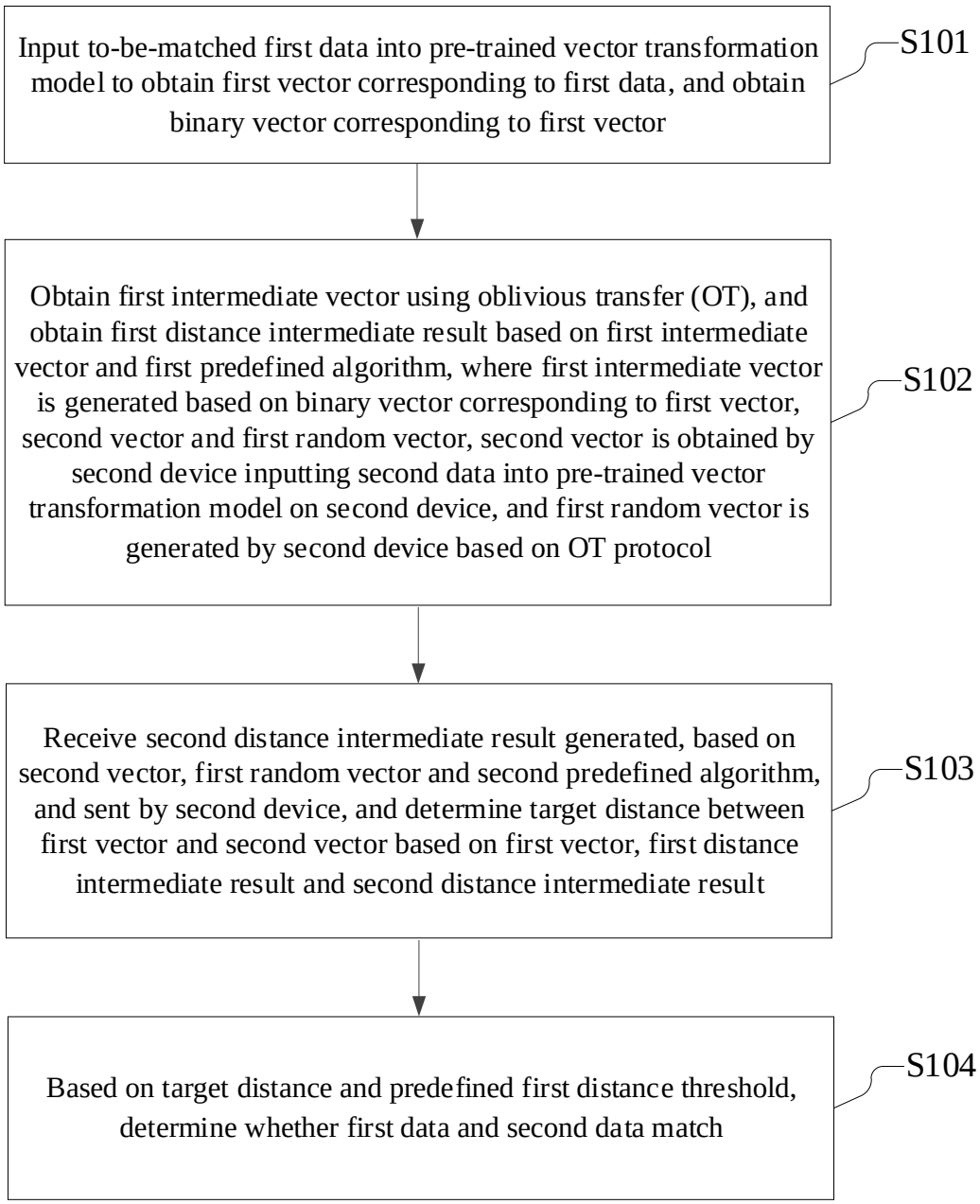

Input to-be-matched first data into pre-trained vector transformation model to obtain first vector corresponding to first data, and obtain binary vector corresponding to first vector
S101
Obtain first intermediate vector using oblivious transfer (OT), and obtain first distance intermediate result based on first intermediate vector and first predefined algorithm, where first intermediate vector is generated based on binary vector corresponding to first vector, second vector and first random vector, second vector is obtained by second device inputting second data into pre-trained vector transformation model on second device, and first random vector is generated by second device based on OT protocol
S102
Receive second distance intermediate result generated, based on second vector, first random vector and second predefined algorithm, and sent by second device, and determine target distance between first vector and second vector based on first vector, first distance intermediate result and second distance intermediate result
S103
Based on target distance and predefined first distance threshold, determine whether first data and second data match
S104

FIG. 1

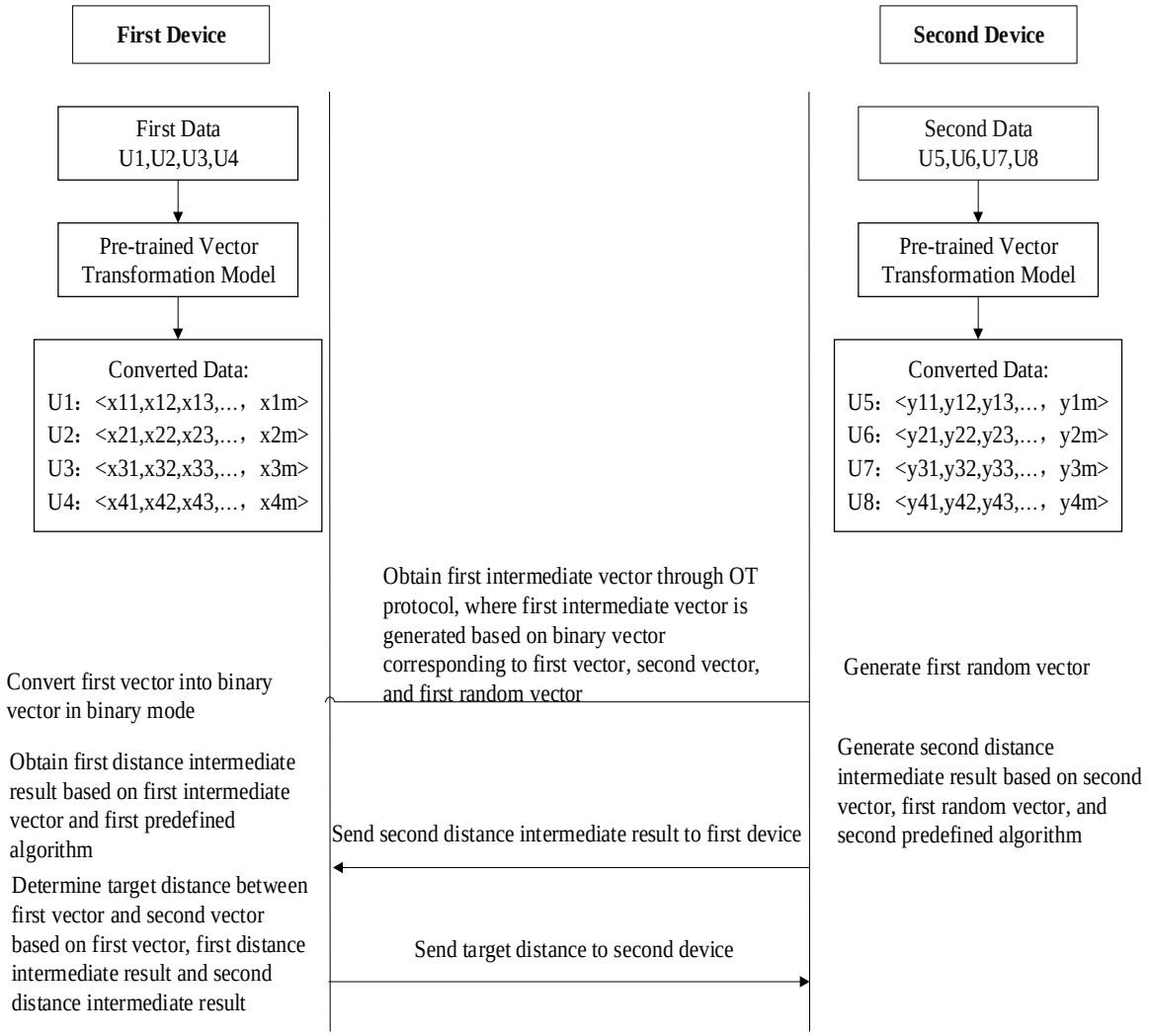

First Device
Second Device
First Data
U1,U2,U3,U4
Second Data
U5,U6,U7,U8
Pre-trained Vector Transformation Model
Pre-trained Vector Transformation Model
Converted Data:
U1：<x11,x12,x13,...，x1m>
U2：<x21,x22,x23,...，x2m>
U3：<x31,x32,x33,...，x3m>
U4：<x41,x42,x43,...，x4m>
Converted Data:
U5：<y11,y12,y13,...，y1m>
U6：<y21,y22,y23,...，y2m>
U7：<y31,y32,y33,...，y3m>
U8：<y41,y42,y43,...，y4m>
Obtain first intermediate vector through OT protocol, where first intermediate vector is generated based on binary vector corresponding to first vector, second vector, and first random vector
Convert first vector into binary vector in binary mode
Generate first random vector
Obtain first distance intermediate result based on first intermediate vector and first predefined algorithm
Generate second distance intermediate result based on second vector, first random vector, and second predefined algorithm
Send second distance intermediate result to first device
Determine target distance between first vector and second vector based on first vector, first distance intermediate result and second distance intermediate result
Send target distance to second device

FIG. 2

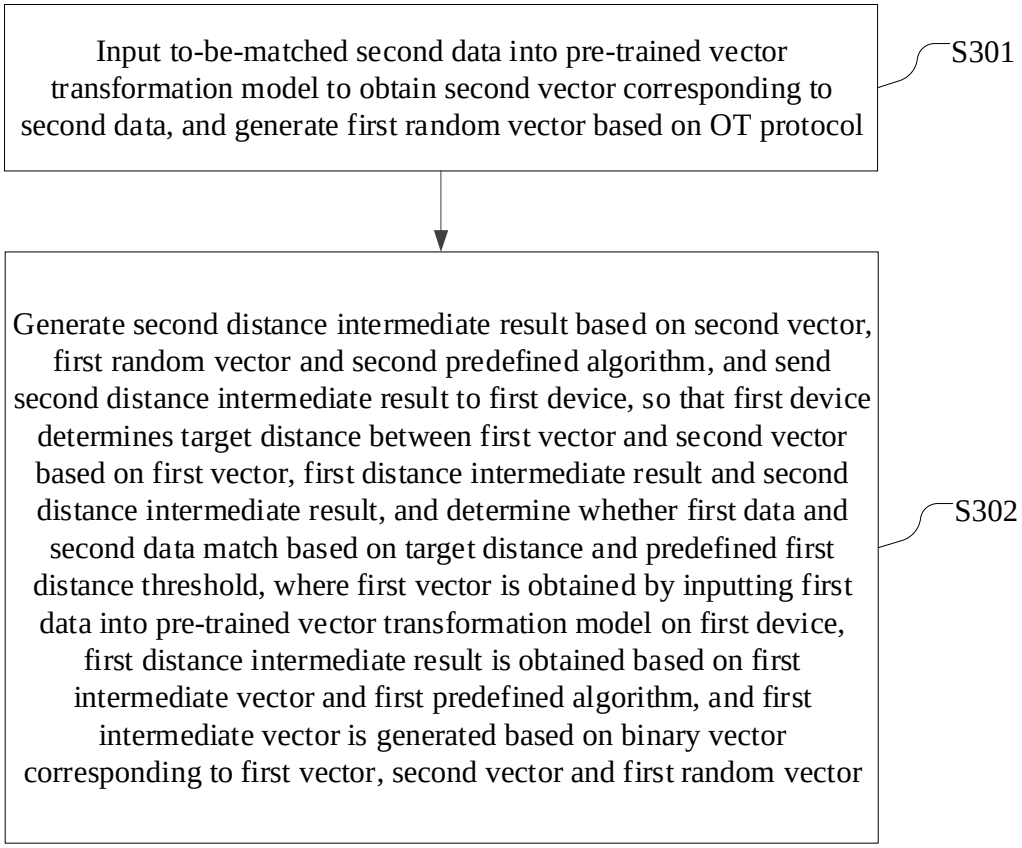

Input to-be-matched second data into pre-trained vector transformation model to obtain second vector corresponding to second data, and generate first random vector based on OT protocol
S301
Generate second distance intermediate result based on second vector, first random vector and second predefined algorithm, and send second distance intermediate result to first device, so that first device determines target distance between first vector and second vector based on first vector, first distance intermediate result and second distance intermediate result, and determine whether first data and second data match based on target distance and predefined first distance threshold, where first vector is obtained by inputting first data into pre-trained vector transformation model on first device, first distance intermediate result is obtained based on first intermediate vector and first predefined algorithm, and first intermediate vector is generated based on binary vector corresponding to first vector, second vector and first random vector
S302

FIG. 3

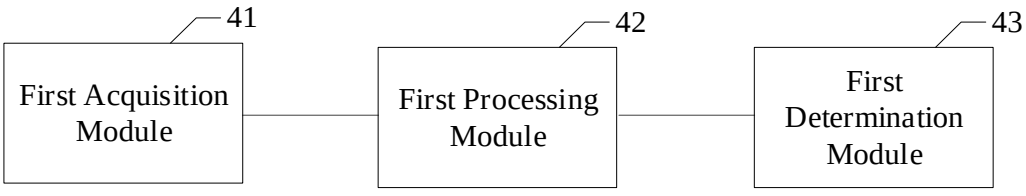

41
First Acquisition Module
42
First Processing Module
43
First Determination Module

FIG. 4

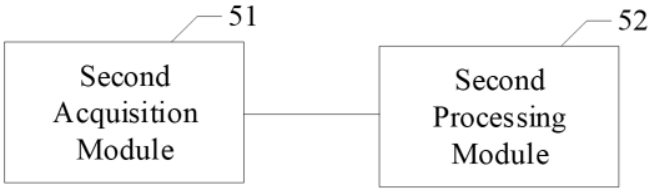


FIG. 5

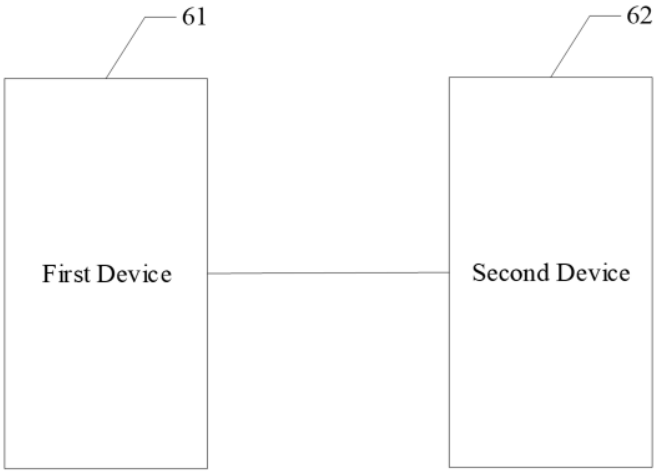


FIG. 6

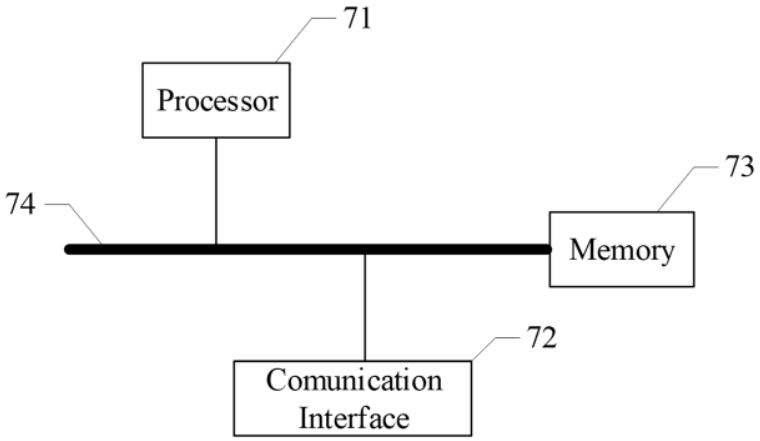


FIG. 7