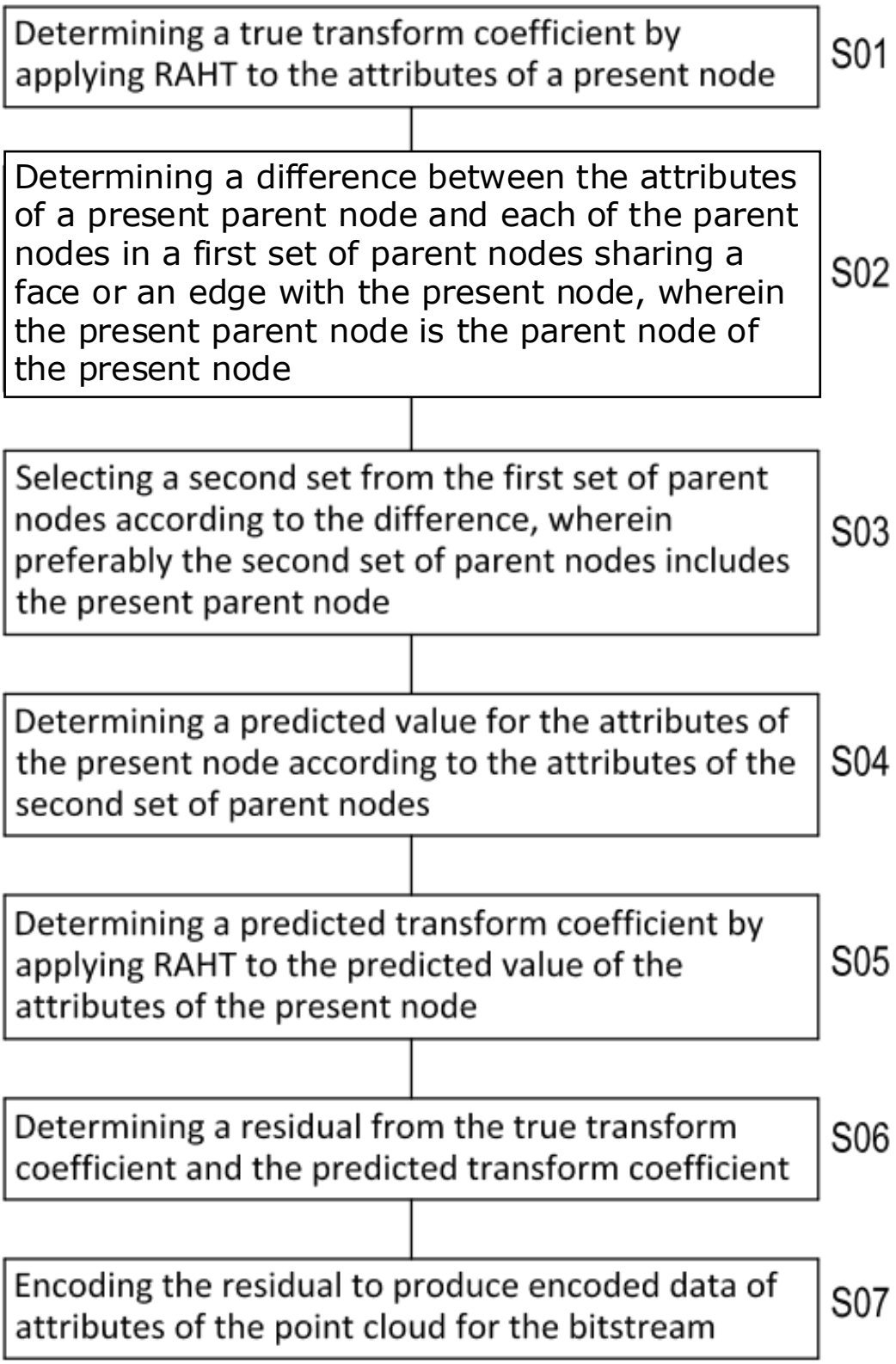

Determining a true transform coefficient by applying RAHT to the attributes of a present node
S01
Determining a difference between the attributes of a present parent node and each of the parent nodes in a first set of parent nodes sharing a face or an edge with the present node, wherein the present parent node is the parent node of the present node
S02
Selecting a second set from the first set of parent nodes according to the difference, wherein preferably the second set of parent nodes includes the present parent node
S03
Determining a predicted value for the attributes of the present node according to the attributes of the second set of parent nodes
S04
Determining a predicted transform coefficient by applying RAHT to the predicted value of the attributes of the present node
S05
Determining a residual from the true transform coefficient and the predicted transform coefficient
S06
Encoding the residual to produce encoded data of attributes of the point cloud for the bitstream
S07

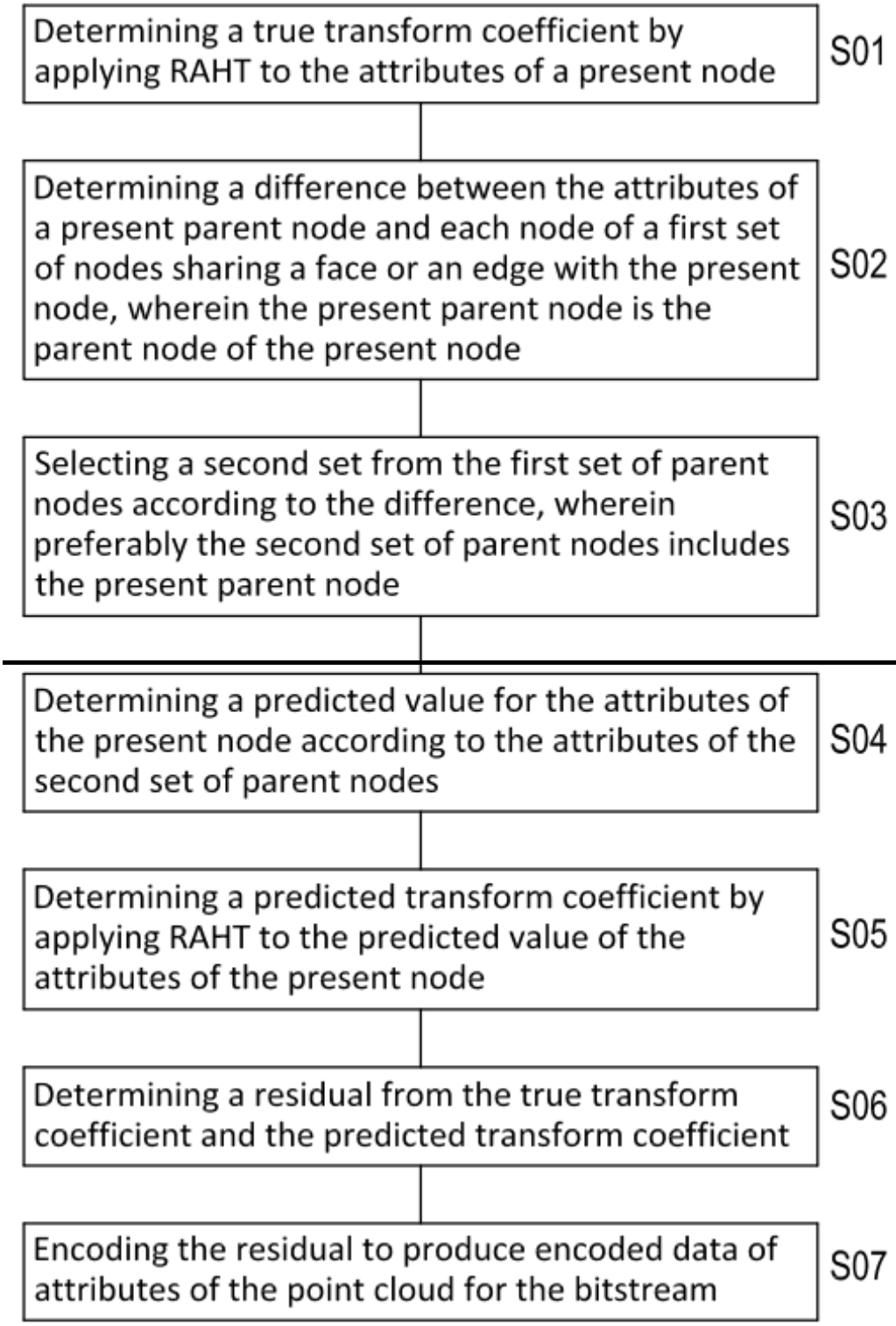
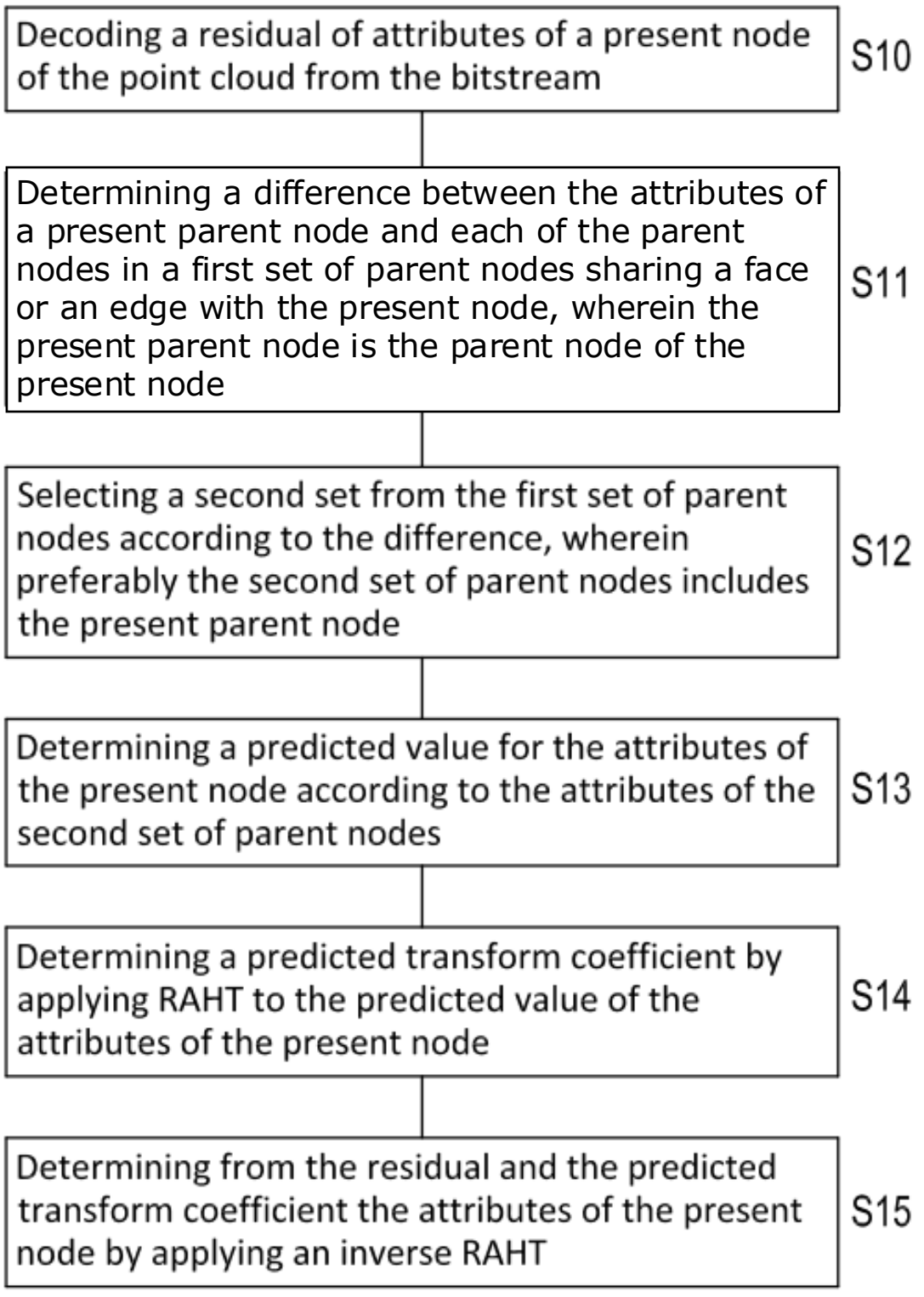

Determining a true transform coefficient by applying RAHT to the attributes of a present node
S01
Determining a difference between the attributes of a present parent node and each node of a first set of nodes sharing a face or an edge with the present node, wherein the present parent node is the parent node of the present node
S02
Selecting a second set from the first set of parent nodes according to the difference, wherein preferably the second set of parent nodes includes the present parent node
S03
Determining a predicted value for the attributes of the present node according to the attributes of the second set of parent nodes
S04
Determining a predicted transform coefficient by applying RAHT to the predicted value of the attributes of the present node
S05
Determining a residual from the true transform coefficient and the predicted transform coefficient
S06
Encoding the residual to produce encoded data of attributes of the point cloud for the bitstream
S07

Fig. 1


Decoding a residual of attributes of a present node of the point cloud from the bitstream
S10
Determining a difference between the attributes of a present parent node and each of the parent nodes in a first set of parent nodes sharing a face or an edge with the present node, wherein the present parent node is the parent node of the present node
S11
Selecting a second set from the first set of parent nodes according to the difference, wherein preferably the second set of parent nodes includes the present parent node
S12
Determining a predicted value for the attributes of the present node according to the attributes of the second set of parent nodes
S13
Determining a predicted transform coefficient by applying RAHT to the predicted value of the attributes of the present node
S14
Determining from the residual and the predicted transform coefficient the attributes of the present node by applying an inverse RAHT
S15

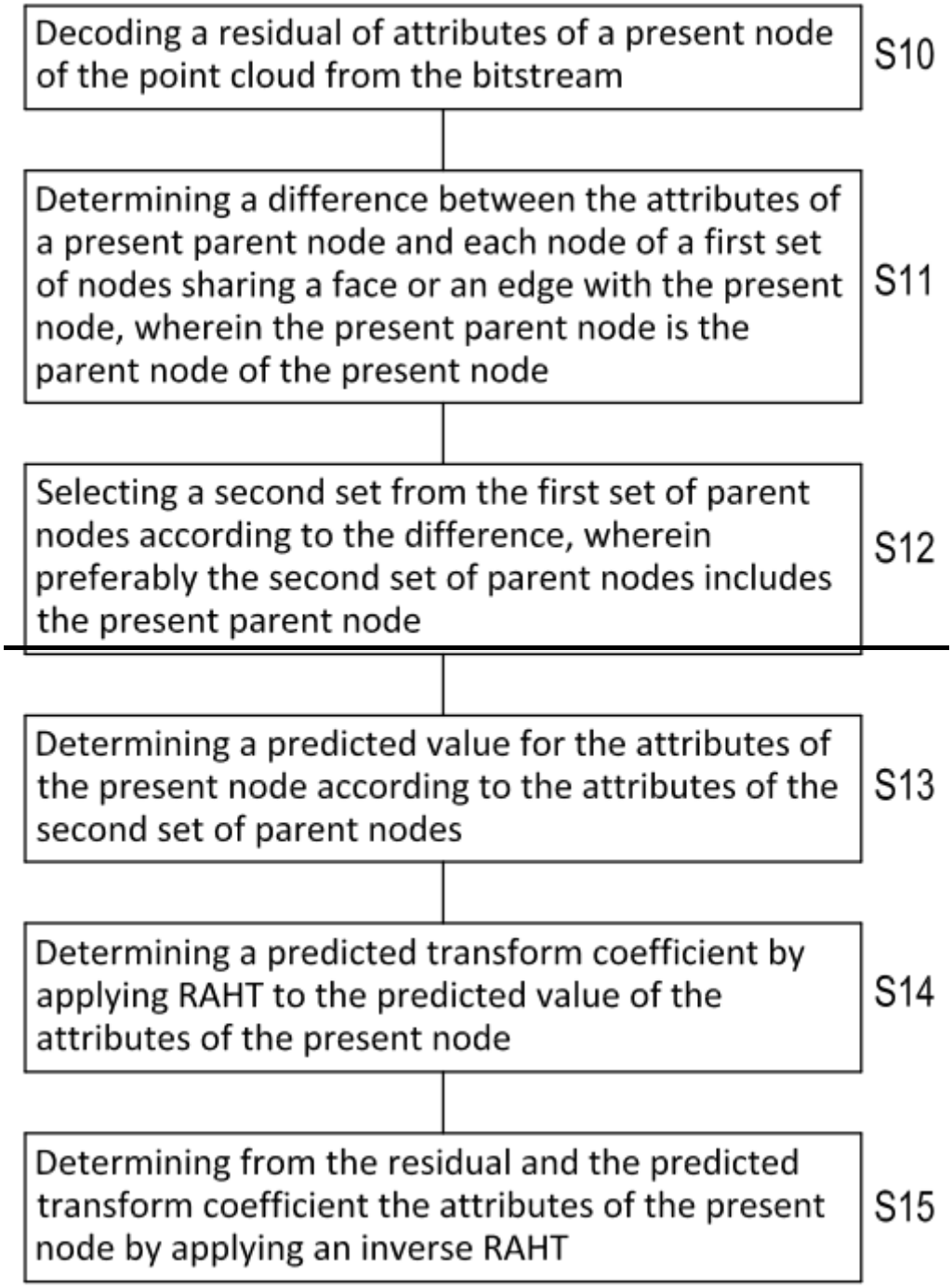

Decoding a residual of attributes of a present node of the point cloud from the bitstream
S10
Determining a difference between the attributes of a present parent node and each node of a first set of nodes sharing a face or an edge with the present node, wherein the present parent node is the parent node of the present node
S11
Selecting a second set from the first set of parent nodes according to the difference, wherein preferably the second set of parent nodes includes the present parent node
S12
Determining a predicted value for the attributes of the present node according to the attributes of the second set of parent nodes
S13
Determining a predicted transform coefficient by applying RAHT to the predicted value of the attributes of the present node
S14
Determining from the residual and the predicted transform coefficient the attributes of the present node by applying an inverse RAHT
S15

Fig. 2

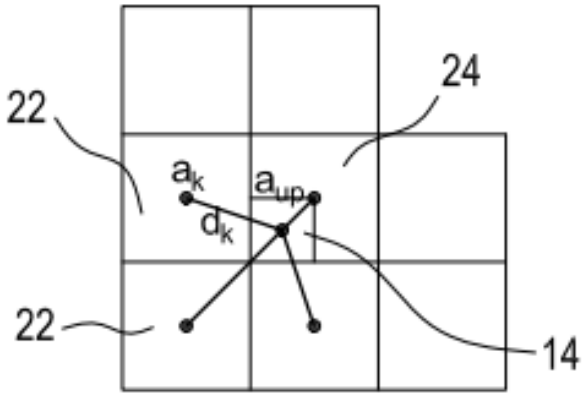

22
24
a_k
a_{up}
d_k
22
14

Fig. 5

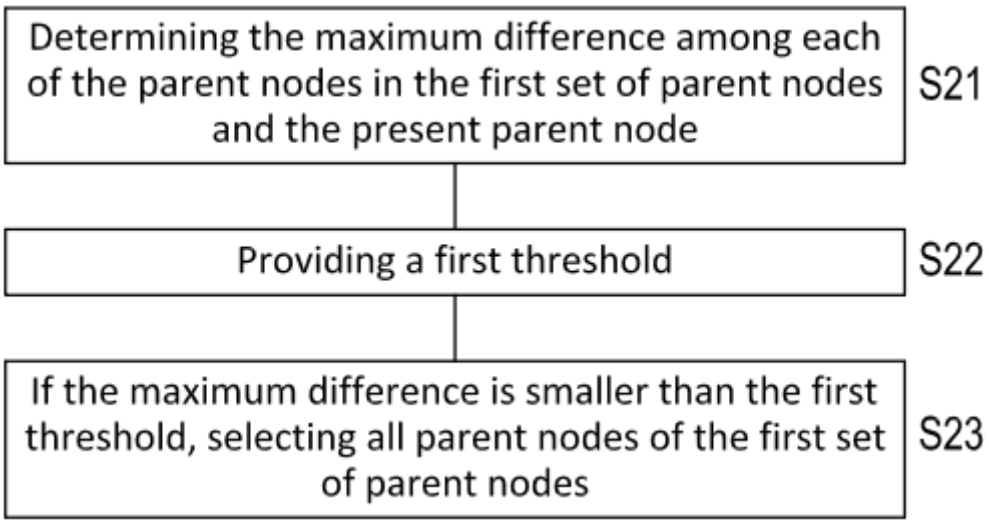
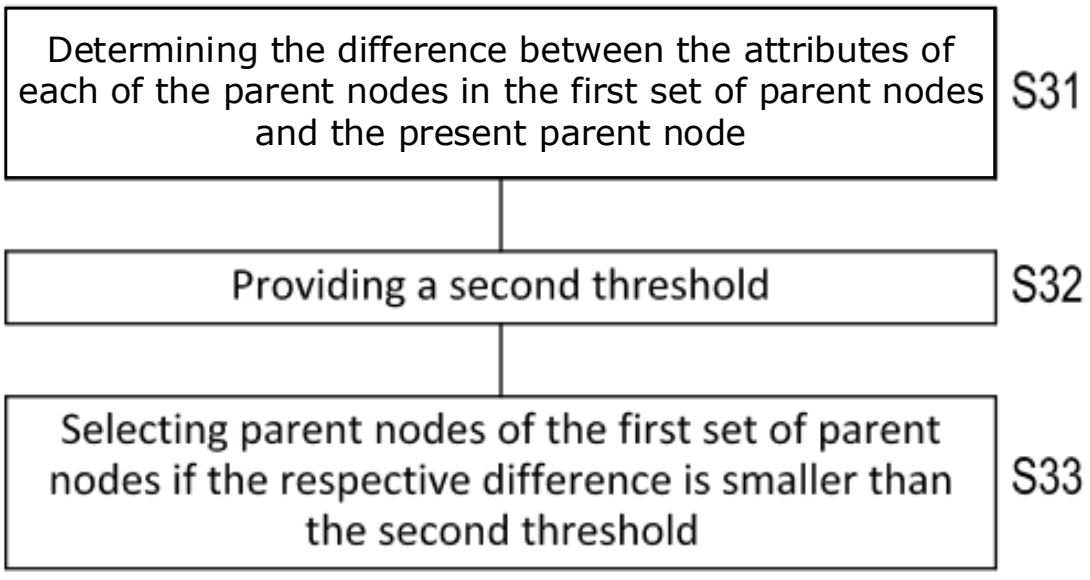

Determining the maximum difference among each of the parent nodes in the first set of parent nodes and the present parent node
S21
Providing a first threshold
S22
If the maximum difference is smaller than the first threshold, selecting all parent nodes of the first set of parent nodes
S23

Fig. 6


Determining the difference between the attributes of each of the parent nodes in the first set of parent nodes and the present parent node
S31
Providing a second threshold
S32
Selecting parent nodes of the first set of parent nodes if the respective difference is smaller than the second threshold
S33

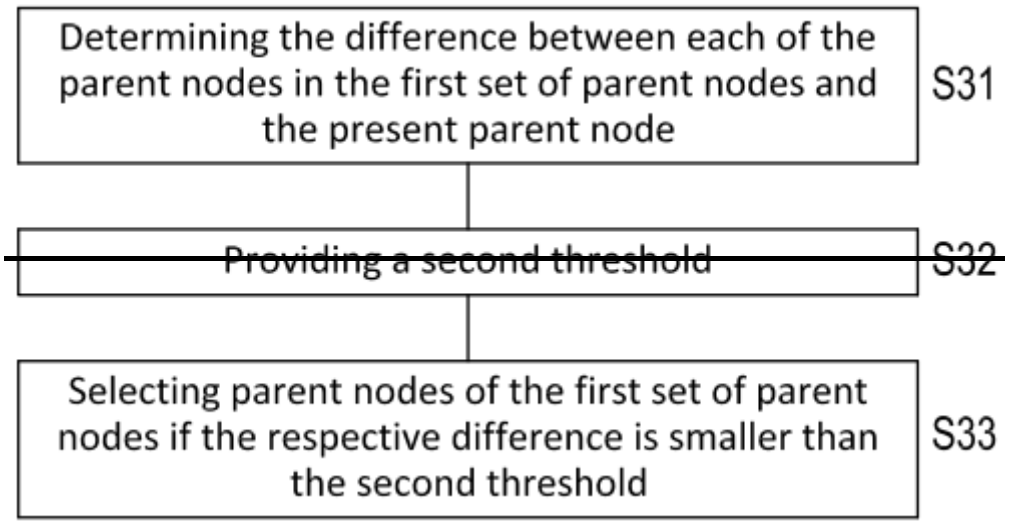

Determining the difference between each of the parent nodes in the first set of parent nodes and the present parent node
S31
Providing a second threshold
S32
Selecting parent nodes of the first set of parent nodes if the respective difference is smaller than the second threshold
S33

Fig. 7