

A B S T R A C T

A parameter calculation unit (33) statistically calculates the estimations and their certainty of a predetermined number of parameters, which uniquely
5 specify any position on an object, for each of a plurality of measured sample sets on the basis of position information of marks composing the sample set. A valid value calculation unit (34) calculates statistically valid values of the predetermined number of
10 parameters on the basis of groups of the estimations and their certainty of the predetermined number of parameters for the respective sample sets. Furthermore, an evaluation unit (35) statistically evaluates if the number of marks composing a sample set can be reduced.
15 If it is determined that the number of marks can be reduced, the parameter calculation unit (33) calculates values of the predetermined number of parameters by using a new sample set having reduced number of marks. Using the values of the predetermined number of parameters
20 calculated in this manner, the position of any area on the object can be accurately detected.