

VOLUME MEASUREMENT APPARATUS, SYSTEM, METHOD, AND PROGRAM

ABSTRACT

5 To provide a volume measurement apparatus or the like that can
contribute to measuring a volume of a raw material heap at low cost and
efficiently without affecting operation of a factory. The volume
measurement apparatus comprises: a point group conversion part
converting depth information from a depth sensor that shoots a raw
10 material yard into point group data; a raw material heap detection part
detecting a point group related to a raw material heap from the point
group data, using repose angle information related to a repose angle of
the raw material heap; and a raw material heap volume calculation part
that calculates a volume of the raw material heap non-occlusion part
15 that can be shot from the depth sensor in the raw material heap based
on the point group related to the raw material heap; estimates a volume
of the raw material heap occlusion part that cannot be shot from the
depth sensor in the raw material heap, using at least the point group
related to the raw material heap; and calculates a volume of the raw
20 material heap, which is a sum of the calculated volume of the raw
material heap non-occlusion part and the estimated volume of the raw
material heap occlusion part.

Figure 15