

CLAIMS:

1. An inspection method comprising:
acquiring an X-ray radiation image of goods being inspected;
5 processing on the radiation image to obtain an ROI;
inspecting on the ROI using a liquor goods inspection model trained with
liquor goods sample images to determine if the ROI of the radiation image
contains liquor goods, wherein the liquor goods inspection model is trained by
way of manually labeling using scanned images of known goods categories
10 where liquor goods are contained and scanned images of goods that is similar
to liquors but not liquors.
2. The inspection method according to claim 1, wherein the step of
inspecting on the ROI using a liquor goods inspection model comprising:
15 extracting shape information and texture information of a local target
from the ROI;
classifying the shape information and the texture information of the local
target from the ROI using the liquor goods inspection model established based
on shape features and texture features of the local target, so as to determine if
20 the ROI of the radiation image contains liquor goods.
3. The inspection method according to claim 1, wherein the ROI is
inspected in multiple-scales using the liquor goods inspection model.
- 25 4. The inspection method according to claim 1, wherein the step of
processing on the radiation image comprising:
detecting on air regions and impenetrable regions in the radiation image;
excluding the air regions and the impenetrable regions from the ROIs.
- 30 5. The inspection method according to claim 1, wherein the manually

labeling comprises: labeling positions and placing postures of the liquor goods in the image.

6. The inspection method according to claim 1, wherein the liquor
5 goods inspection model is established through a weighted summation of shape features and texture features of the local targets in samples, wherein weights in the weighted summation is related to regional conditional entropy.

7. The inspection method according to claim 1, wherein the liquor
10 goods inspection model is established with respect to different placing postures of liquor goods.

8. The inspection method according to claim 1, further comprising a
step of:
15 for those liquor goods that are not detected using the liquor goods inspection model and those goods that are detected using the liquor goods inspection model as liquor goods but turns out to be non-liquor goods, re-training the liquor goods inspection model by manually labeling.

20 9. An inspection system comprising:
a scanning imaging system configured to scan goods being inspected so as to acquire an X-ray radiation image of the goods being inspected;
a data processing apparatus configured to process on the radiation image to obtain an ROI, and to inspect on the ROI using a liquor goods
25 inspection model trained with liquor goods sample images to determine if the ROI of the radiation image contains liquor goods, wherein the liquor goods inspection model is trained by way of manually labeling using scanned images of known goods categories where liquor goods are contained and scanned images of goods that is similar to liquors but not liquors.

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10. The inspection system according to claim 9, wherein the data processing apparatus is configured to extract shape information and texture information of a local target from the ROI, and to classify the shape information and the texture information of the local target from the ROI using the liquor goods inspection model established based on shape features and texture features of the local target so as to determine if the ROI of the radiation image contains liquor goods.