[DESCRIPTION]

[Title of Invention] MAGNETIC RESPONSE DISTRIBUTION VISUALIZATION DEVICE, SECURITY INSPECTION SYSTEM, AND MAGNETIC RESPONSE DISTRIBUTION VISUALIZATION METHOD

[Technical Field]

[0001]

The present disclosure relates to a magnetic response distribution visualization device and the like that generates an image showing a distribution of a response to an external field.

[Background Art]

[0002]

Currently, security checks are conducted at airports and other locations using millimeter wave technology. PTL 1 proposes, for example, a millimeter wave three dimensional holographic scan imaging apparatus that can improve scanning speed and accuracy.

[Citation List]

[Patent Literature]

[0003]

[PTL 1] Japanese Unexamined Patent Application Publication No. 2015-36679

[Summary of Invention]

[Technical Problem]

[0004]

However, the presence of numerous obstacles that block millimeter waves, such as living bodies and metal cases, may make it difficult to properly detect target objects.

[0005]

In view of this, embodiments f the present disclosure provide a magnetic response distribution visualization device that can generate an image showing the distribution of the response of a moving object to an external field with high accuracy as an image to be used for security inspection.

[Solution to Problem]

[0006]

According to a first aspect of the present disclosure, there is provided a magnetic response distribution visualization device including: an induction circuit that induces, from outside a moving object, a magnetic field component that is a component of a magnetic field that satisfies a fundamental equation for magnetic fields; a sensor that senses a strength and a phase of the magnetic field including the magnetic field component altered by the moving object, at a plurality of points in time outside the moving object; and an information processing circuit that, based on a sensing result of the strength and the phase of the magnetic field, a moving speed of the moving object, and the fundamental equation for magnetic fields, calculates a strength and a phase of the magnetic field at a vicinal position closer to

the moving object than the sensor, and generates, based on a calculation result of the strength and the phase of the magnetic field, a magnetic response distribution image that shows a distribution of a response of the moving object to the magnetic field component induced by the induction circuit and is used for security inspection.

[0006a]

According to a second aspect of the present disclosure, there is provided a security inspection system including the above magnetic response distribution visualization device; and a thermographic device for performing diagnostic imaging on a person corresponding to the moving object.

[0006b]

According to a third aspect of the present disclosure, there is provided a magnetic response distribution visualization method including: inducing, from outside a moving object, a magnetic field component that is a component of a magnetic field that satisfies a fundamental equation for magnetic fields, using an induction circuit; sensing, using a sensor, a strength and a phase of the magnetic field including the magnetic field component altered by the moving object, at a plurality of points in time outside the moving object; and based on a sensing result of the strength and the phase of the magnetic field, a moving speed of the moving object, and the fundamental equation for magnetic fields, calculating a strength and a phase of the magnetic field at a vicinal position closer to the moving object than the sensor, and generating, based on a calculation result of the strength and the phase of the magnetic field, a magnetic response distribution image that shows a distribution of a response of the moving object to the magnetic field component induced by the induction circuit and is used for security inspection.

[0007]

These general or specific aspects may be implemented as a system, a device or apparatus, a method, an integrated circuit, a computer program, or a non-transitory computer-readable recording medium such a CD-ROM, or any combination thereof.

[Advantageous Effects of Invention]

[0008]

According embodiments of the present disclosure, it is possible to generate an image showing the distribution of the response of a moving object to an external field with high accuracy as an image to be used for security inspection.

[Brief Description of Drawings]

[0009]

[FIG. 1]

FIG. 1 is a schematic diagram illustrating a magnetic response distribution visualization device according to an embodiment of the present disclosure.

[FIG. 2]

FIG. 2 is a schematic diagram illustrating a side surface of a