CLAIMS

1. A method for determining a three-dimensional representation of the spatial coverage of one or more detection systems moving through a geographic region, on the basis of a dataset comprising probability data of said one or more detection systems, said probability data comprising at least one detection probability of said one or more detection systems, said at least one detection probability being determined in a computation region representing a geometrical region included in said geographic region, the computation region comprising all the detection probabilities of said dataset that meet a condition, the computation region being defined in a frame of reference centered at the center of the computation region, the spatial coverage of said one or more detection systems being represented according to a given viewing position and orientation, the data of said dataset comprising computation-region position data and computation-region dimension data, characterized in that the method comprises a step of determining a 3D rendering of said detection probability, on the basis of at least some of the probability data of said one or more detection systems, of the computation-region position data, and of the dimension data.

2. The method as claimed in claim 1, characterized in that it further comprises a step of determining a main data structure having at least three dimensions, on the basis of said at least one detection probability of said one or more detection systems.

3. The method as claimed in claim 2, characterized in that said one or more detection systems comprise at least two detection systems, wherein the main data structure is determined from a linear interpolation applied to the probability data of each detection system of said at least two detection systems.

4. The method as claimed in one of claims 1 to 3, characterized in that it further comprises a step of determining a depth rendering of the volume encompassing the computation region, on the basis of the computation-region position data, of the dimension data, and of the viewing position and orientation.

5. The method as claimed in claims 2 and 4, characterized in that said 3D rendering is volume rendering and in that the method further comprises a step of:

- determining a volume rendering of the detection probability according to at least one function in a given color space, on the basis of said main data structure and of said depth rendering.

6. The method as claimed in claim 5, characterized in that said step of determining a volume rendering comprises the steps of:

- determining a grayscale volume rendering of the detection probability, on the basis of said main data structure and of said depth rendering;

- determining a color volume rendering of the detection probability, on the basis of the grayscale volume rendering.

7. The method as claimed in one of the preceding claims, characterized in that said 3D rendering is surface rendering and in that the method further comprises a step of determining a surface rendering on the basis of the detection probability of said one or more detection systems, of the computation-region position data, of the dimension data, of at least one detection-probability threshold value, and of the viewing position and orientation.

8. The method as claimed in claim 7, characterized in that the step of determining said surface rendering comprises generating polygonal objects on the basis of the three-dimensional data matrix so as to approximate at least one iso-surface constructed on the basis of said detection-probability threshold.

9. The method as claimed in claim 2, characterized in that said dataset further comprises an input resolution associated with each of said one or more detection systems, an input resolution associated with a detection system corresponding to a distance between two points of said computation region, and in that said step of determining the main data structure comprises the steps of:

- generating an auxiliary data structure on the basis of at least some of the probability data, said auxiliary data structure having dimensions defined on the basis of the input resolution associated with each of said one or more detection systems;

- determining a main data structure using a conversion of the data of the auxiliary structure into colorimetric data.

10. The method as claimed in claim 9, characterized in that said one or more detection systems comprise at least two detection systems, a secondary resolution being determined as being the minimum value of the input resolutions of each of said at least two detection systems, said main data structure being determined on the basis of said secondary resolution.

11. The method as claimed in one of claims 4 to 6, characterized in that a depth image comprises a set of surfaces associated with position information, and in that the step of determining said depth rendering comprises determining a first depth image of a cube encompassing said 3D data structure and a second depth image of the rear face of said cube, the depth of the cube encompassing said main data structure representing the distance of the surface of said cube with respect to the viewing position and orientation, said depth rendering comprising the first depth image and the second depth image.

12. The method as claimed in claims 5 and 11, characterized in that the step of determining a volume rendering comprises determining said volume rendering on the basis of said main data structure and of said first depth image and second depth image, by applying a volume-rendering algorithm of ray-marching type.

13. The method as claimed in claims 5, characterized in that said at least one function comprises at least one transfer function defined on the basis of a minimum probability limit, of a maximum probability limit, of a minimum colorimetry limit, and of a maximum colorimetry limit, said transfer function being configured to execute an interpolation between said minimum colorimetry limit and said maximum colorimetry limit, the color space in which said volume rendering is determined representing a detection probability comprised between said minimum probability limit and said maximum probability limit.

14. A device for determining a three-dimensional representation of the spatial coverage of one or more detection systems moving through a geographic region, on the basis of a dataset comprising probability data, said probability data comprising at least one detection probability of said one or more detection systems, said at least one detection probability being determined in a computation region representing a geometrical region included in said geographic region, the computation region

comprising all the detection probabilities of said dataset that meet a condition, the computation area region being defined in a frame of reference centered at the center of the computation region, the spatial coverage of said one or more detection systems being represented according to a given viewing position and orientation, the data of said set comprising computation-region position data and computation-region dimension data, characterized in that the device is configured to determine a 3D rendering of said detection probability, on the basis of at least some of the probability data, of the computation-region position data, and of the dimension data.

15. A computer program product for determining a three-dimensional representation of the spatial coverage of one or more detection systems moving through a geographic region, on the basis of a dataset comprising probability data, said probability data comprising at least one detection probability determined in a computation region representing a geometrical region included in said geographic region, the computation region comprising all the detection probabilities of said dataset that meet a condition, the computation region being defined in a frame of reference centered at the center of the computation region, the spatial coverage of said one or more detection systems being represented according to a given viewing position and orientation, the data of said set comprising computation-region position data and computation-region dimension data, said computer program product comprising computer program code instructions that, when they are executed by one or more processors, cause the one or more processors to determine a 3D rendering of said detection probability, on the basis of at least some of the probability data, of the computation-region position data, and of the dimension data.