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CLAIMS

1.- A method for counting objects in a predetermined spatial area (ZS), the method being carried out by a processing module (10), the method including:

5 - a first unsupervised learning phase, comprising the following steps:

 - choosing a plurality of different spatial densities of objects in the predetermined spatial area (ZS),

 - providing parameters relative to a detector (30) able to acquire at least one image, the image including the predetermined spatial area (ZS), the provided parameters comprising at least a parameter relative to the focal length of the detector (30), a parameter relative to the altitude of the detector (30) and a parameter relative to the incline of the detector (30) with respect to the predetermined spatial area (ZS),

 - generating a database including a plurality of images for each chosen spatial density, the images being synthetic images, the generating step using the parameters provided in the providing step, and

 - determining a law making it possible to estimate the spatial density in the predetermined spatial area by using the generated learning base,

20 - a second phase for counting in the predetermined spatial area (ZS) comprising the following steps:

 - acquiring an image including the predetermined spatial area (ZS) via the detector (30), and

 - estimating the spatial density of objects in the predetermined spatial area (ZS) by applying the law to the acquired image.

25 2.- The method according to claim 1, wherein the generating step includes a step for correcting perspective defects related to the detector (30).

30 3.- The method according to any one of claims 1 to 2, wherein the determination step is carried out by learning, the learning including extracting characteristics, the extracted characteristics also being used in the estimating step.

35 4.- The method according to any one of claims 1 to 3, wherein the determination step is carried out by minimizing a support vector regression.

5.- A computer program product is also described including software instructions, the software instructions implementing a method according to any one of claims 1 to 4, when the software instructions are executed by a computer.

5 6.- An information medium on which a computer program product according to claim 5 is stored.

7.- A surveillance device able to count the objects in a predetermined spatial area (ZS) comprising:

10 - a detector (30) able to acquire at least one image, the image including the predetermined spatial area (ZS), the detector (30) having parameters, one parameter being relative to the focal length of the detector (30), one parameter being relative to the altitude of the detector (30) and one parameter being relative to the incline of the detector (30) with respect to the predetermined spatial area (ZS), and

15 - a processing module (10) able to count the objects in the predetermined spatial area (ZS),

the processing module (10) being able to:

 - choose a plurality of different spatial densities in the predetermined spatial area (ZS),

20 - receive parameters relative to the detector (30), the received parameters comprising at least the parameter relative to the focal length of the detector (30), the parameter relative to the altitude of the detector (30), the parameter relative to the incline of the detector (30) with respect to the predetermined spatial area (ZS),

25 - generate a plurality of images for each chosen spatial density, the images being synthetic images, by using the received parameters, and

 - determine a law making it possible to estimate the spatial density in the predetermined spatial area (ZS) by using the generated learning base as learning base, and

30 - estimate the spatial density of objects in the predetermined spatial area (ZS) by applying the law to the acquired image.