Claims

1. An accelerometer device for determining the acceleration of an ~~object~~ acoustic antenna to which the accelerometer device is mechanically connected, along three axes X, Y and Z of a main orthonormal reference system ~~(X, Y, Z)~~ comprising three axes X, Y, Z, said acoustic antenna ~~object~~ being subject to a surrounding pressure, ~~characterized in that it comprises~~ the acoustic antenna comprising at least one acoustic module comprising one or more acoustic sensors mounted on at least one printed circuit board, said acoustic sensors delivering electric signals using acceleration references provided by said accelerometer device, wherein the accelerometer device comprises a set of ~~number N of~~ accelerometer sensors of MEMS type comprising N accelerometer sensors~~(11, 12, 13)~~, said number N of accelerometer sensors being at least equal to two, said accelerometer sensors being mounted on said at least one printed circuit board, each accelerometer sensor being configured to determine the acceleration of said acoustic antenna according to each axis X, Y, Z, the position of each sensor ~~each sensor (11, 12, 13)~~ being defined ~~by construction~~ in an auxiliary reference system comprising three orthonormal axes ~~(~~Xi, Yi, Zi~~)~~, the plane (Xi, Yi) defining the plane of each accelerometer sensor and being parallel to the plane (X, Z) of said main reference system, said set of accelerometer sensors comprising at least one pair of accelerometer sensors mounted on either side of said at least one printed circuit board, and wherein~~mounted facing in opposite directions and are substantially parallel to one another, and in that~~:

- for each ~~of said pairs~~pair of accelerometer sensors, the sensors of the pair have~~, in twos,~~ components of opposite sign along two axes of the main reference system; and

- the axes of the main reference system along which the components of the accelerometer sensors of said at least one accelerometer sensor pair have opposite signs ~~oppose the set of pairs of sensors in twos~~ comprise at least two of the three axes X, Y and Z of the main reference system~~, thereby making it~~

~~possible~~ to compensate for the effect of the pressure on at least two axes of the main reference system.

2. The accelerometer device as claimed in claim 1, wherein said set of accelerometer sensors comprises two accelerometer sensors connected to said at least one printed circuit board, and the effect of the pressure which is exerted on the acoustic antenna being corrected along the two axes of the main reference system.

3. The accelerometer device as claimed in claim 1, wherein said set of accelerometer sensors comprises three sensors, and the effect of the pressure which is exerted on the acoustic antenna being corrected along the three axes of the main reference system.

4. The accelerometer device as claimed in claim 1, wherein the sensitivity of the accelerometer sensors to pressure varies.

5. An acoustic module for an acoustic antenna extending along a main axis, comprising an accelerometer device as claimed in claim 1, wherein the accelerations determined by the accelerometer device along each axis X, Y and Z are such that they compensate for the effect of the acceleration of the acoustic antenna on the position of said at least one acoustic multisensor.

6. The acoustic module as claimed in claim 5, wherein said at least one acoustic sensor has an axis substantially parallel to the axis of the antenna.

7. The acoustic module as claimed in claim 1, wherein said at least one printed circuit board comprises a plurality of printed circuit boards stacked substantially perpendicularly to the axis of the antenna.

8. An acoustic antenna, comprising a set of acoustic modules as claimed in claim 5.

9. The accelerometer device of claim 1, further comprising a processing unit configured to determine an acceleration reference for each axis of the reference system from the accelerations measured for each pair of accelerometer sensor.

10. The accelerometer device of claim 9, further comprising a positioning adjustment mechanism for adjusting the position of said antenna based on the acceleration references determined by said processing unit along each axis.

~~2~~11. The accelerometer device as claimed in claim ~~1~~9, ~~characterized in that it comprises a processing unit (15) for calculating the mean of the accelerations along each axis X, Y and Z,~~ wherein the acceleration reference for each axis of the main reference system is the mean of the accelerations ~~along a given axis being determined from the accelerations~~ determined by each pair of accelerometer sensors along said ~~given~~ axis.

~~3~~12. The accelerometer device as claimed in claim ~~2~~11, ~~characterized in that~~wherein the calculation of the mean of the accelerations along ~~a given~~the axis further takes into account the gain and/or the offset of each sensor predetermined in a unit calibration phase implemented separately for each sensor before mounting.

~~4~~13. The accelerometer device as claimed in claim 11, ~~any claim 1 or 2, characterized in that~~wherein the calculation of the means of the accelerations along ~~a given~~the axis further takes into account a predefined gain compensation factor.

~~5. The accelerometer device as claimed in any preceding claim, characterized in that said set of sensors comprises two accelerometer sensors (11, 12) connected to at least one printed circuit board (102), and in that the axes of the reference system along which the components of the sensors~~

~~oppose the set of sensors in twos comprise two of the three axes X, Y and Z of the reference system, thereby making it possible to correct for the effect of the pressure which is exerted on the object along the two axes.~~

~~6. The accelerometer device as claimed in any claim 1 to 4, characterized in that said set of accelerometer sensors comprises three sensors (11, 12, 13), and in that the axes of the reference system along which the components of the accelerometer sensors oppose the set of pairs of sensors in twos comprise the three axes X, Y and Z of the reference system, thereby making it possible to correct for the effect of the pressure which is exerted on the object along the three axes.~~

~~7. The accelerometer device as claimed in any preceding claim, characterized in that said object is an acoustic antenna (10) comprising a set of acoustic multisensors (101), each acoustic multisensor (101) being mounted on at least one printed circuit board (102), and in that the accelerations determined by the accelerometer device along each axis X, Y and Z are used to compensate for the effect of the acceleration of the acoustic antenna (10) on the position of the acoustic multisensor.~~

~~8. The accelerometer device as claimed in any preceding claim, characterized in that the sensitivity of the sensors to pressure varies.~~

~~9. An acoustic module for an acoustic antenna (10) extending along a main axis, characterized in that it comprises an accelerometer device (1) as claimed in any claim 1 to 8, and in that the accelerations determined by the accelerometer device along each axis X, Y and Z are used to compensate for the effect of the acceleration of the acoustic antenna (10) on the position of the acoustic multisensor.~~

~~10. The acoustic module as claimed in claim 9, characterized in that the acoustic sensor (101) is an acoustic multisensor with an axis that is substantially parallel to the axis of the antenna.~~

~~11. The acoustic module as claimed in any claim 9 or 10, characterized in that it comprises at least one printed circuit board on which the accelerometer sensors are mounted.~~

~~12. The acoustic module as claimed in claim 11, characterized in that it comprises a plurality of printed circuit boards (102), stacked substantially perpendicularly to the axis of the antenna, on which the accelerometer sensors are mounted.~~

~~13. An acoustic antenna, characterized in that it comprises a set of acoustic modules as claimed in any claim 9 to 12.~~