Claims

1. An apparatus for preventing damage to cable by external force by means of sound source localization, comprising:

a power supply unit;

a sound source sensor unit for processing an acquired sound signal;

a camera unit, associated with the sound source sensor unit;

a signal processing unit; and

a wireless communication unit;

wherein the sound source sensor unit, the camera unit, the signal processing unit and the wireless communication unit are electrically connected to the power supply unit;

the signal processing unit is respectively connected to the sound source sensor unit, the camera unit and the wireless communication unit; and

the sound source sensor unit comprises a sound source recognizer and a sound source locator, wherein the sound source recognizer is configured to extract features of the acquired sound signal and compare the features with a sound feature fingerprint database to obtain the type of a sound source, and the sound source locator is configured to determine the position of the sound source; and

when the sound source sensor unit recognizes the type and position of the sound source, the signal processing unit sends a trigger signal to the camera unit, and then the camera unit is triggered to replay a surveillance video to determine whether or not the sound source really exists.

2. The apparatus for preventing damage to cable by external force by means of sound source localization according to claim 1, wherein the sound source recognizer is connected to the signal processing unit via a USB interface.

3. The apparatus for preventing damage to cable by external force by means of sound source localization according to claim 1, wherein the sound source recognizer acquires the sound signal via an eight-channel sound array.

4. The apparatus for preventing damage to cable by external force by means of sound source localization according to claim 1, wherein the sound source locator is connected to the signal processing unit via a UDP protocol.

5. The apparatus for preventing damage to cable by external force by means of sound source localization according to claim 1, wherein the sound source locator conducts cross localization via two four-channel sound arrays, and cross localization is realized according to an azimuth angle measured by the two sound arrays, so that the position of the sound source is worked out.

6. The apparatus for preventing damage to cable by external force by means of sound source localization according to claim 1, wherein for pulse signals and non-pulse signals, the sound source locator adopts different localization algorithms to estimate an azimuth angle.

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