



**Hearing Disability affects a significant portion of workers in all developed countries.**  
 In the UK, for example, the number of people suffering from hearing difficulties as a result of exposure to noise at work was recently estimated at 1% of the population<sup>(1)</sup>!

Concern for the relevant social impact caused the European Council to issue Directive 2003/10/EC with more stringent exposure limit values. Now, where daily noise exposures are expected to reach or exceed **80dB(A)**, employers and employees must assess the relevant risks. At the 8-hour daily upper exposure value of **85dB(A)** noise-control measures must be adopted.

In the interests of improving worker health and safety, the Directive specifically invites employers to keep up with technical progress and scientific knowledge regarding the risks of exposure to noise.



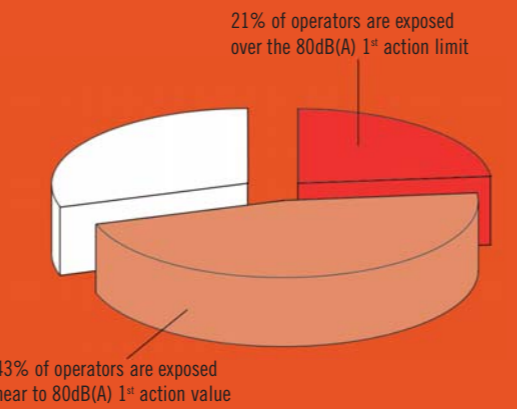
**Application to Call Centres**

The noise levels experienced by a Call Centre employee are dominated by sound delivered through the headset earpiece(s) - where 80dB(A) levels are commonly reached at normal telephonic conversation volume – consequently a control device is mandatory.

**Studies:**

Studies related to Call Centres in the UK have shown that, when free to regulate their own headset volume, in 21% of cases operators tend to an exposure **exceeding** the 80dB(A) 1<sup>st</sup> action level. 43% of Call Centre agents tend to work within a 75-80dB(A) band which is safe but should be monitored.

Similar qualified research in Italian Call Centres<sup>(2)</sup> provides evidence that the average level of headset noise delivered to the operators' ears varies from 78 to 83dB (A).



(1) Medical Research Council (MRC) survey in 1997-98.  
 (2) "Il rumore in cuffia" Peretti-Farina et al.



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**Technology and Design you can wear**

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# Eustachio

Sound Management Unit for Call Centre Headsets



- Protection for Call Centre Agents
- Safeguards and controls for managers
- Compliance with Noise at Work regulations (European Directive 2003/10/EC)

## Eustachio

Updated Noise At Work legislation coming into effect throughout Europe in 2006 requires employers to prevent noise related risks to health and safety. Call Centres are a special case. Headsets, everyday indispensable tools in the call centre environment, must be controlled since they are significant sources of continuous noise exposure.

Furthermore, Acoustic Shocks caused by unpredictable sudden and intense noise peaks (typically at high frequency such as fax tones, screeches and alarms), one of the causes of acoustic injury, are giving rise to disputes and litigation thus justifying demands for more sophisticated countermeasure technology.

For these reasons, Altesys has developed Eustachio, an innovative in-line Sound Management Unit which is simply connected in-line between the headset and Call Centre telephone or turret. Eustachio protects the user and helps call centre management to comply with their legal responsibilities.



### Eustachio ensures:

- Continuous measurement of the accumulated daily sound exposure.
- Acoustic Shock Protection.
- Display based sound information.
- Storage and reporting of user data.
- Compatibility with the most common professional headsets: no need to change existing equipment.

Eustachio helps in the protection of the employee's health, and addresses your company's responsibilities in 3 simple ways.



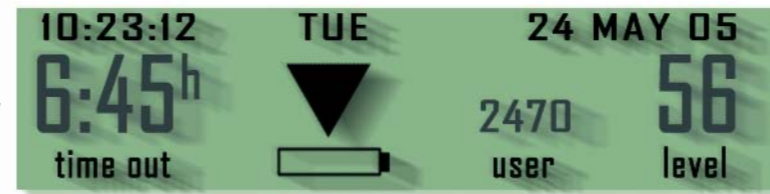
## 1 Acoustic Shock Protection



Eustachio protects the headset user from noise peaks that exceed safe limits, instantly reducing the noise to a safe level. Altesys Sound Management Unit, through "True eardrum SPL" monitoring ensures real-time reduction of excessive incoming noise signals.

## 2 Measurement & Control

The new Legislation applies to the average weighted noise experienced over a working shift, typically 8 hours. In its automatic mode, Eustachio works by continually measuring the sound levels being output to the headset during the working day and the sophisticated electronics automatically reduce or increase audio levels to ensure a safe limit is maintained until the end of the shift. In fact Eustachio also provides protection from very low sound levels by automatically increasing low sound levels to avoid the strain of trying to hear conversations that are too quiet. In Manual mode, users are able to adjust the listening volume. In this case Eustachio continues to measure and monitor the headset sound level, providing the user with the information needed to work within the safety limit: its display shows real time noise exposure value and the time remaining until the day's exposure limit is reached.



## 3 Reports and data storage

Each Eustachio Sound Management Unit is allocated on an individual user basis. The unit user code is recorded against an individual at the time of issue and is displayed at all times. Noise experience is stored within the Unit and can be downloaded via the USB interface either in real time or at a later date for retention and analysis. Individual user data is stored for up to 1 month in the Unit.

The Eustachio measurement/report system will provide companies with the necessary data to avoid legal litigation.



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|---|--|
| ■ Designed for European Directive 2003/10/EC and related national Noise at Work Acts ✓    | ■ Reports individual user sound level, real time or later download ✓   |
| ■ Automatic protection against noise peaks which exceed safe limits ✓                     | ■ Retains individual user sound experience for 1 month on Unit ✓       |
| ■ Automatic Sound level adjustment to a predetermined desired level within legal limits ✓ | ■ User ID assigned with Unit ✓   |
| ■ Manual over-ride with indication of the consequent residual exposure time ✓             | ■ Displays user ID ✓   |
| ■ Displays headset users sound level in real time ✓                                       | ■ 2 Power options (lithium-ion Battery & AC Adaptor) ✓                 |
| ■ Displays headset users remaining exposure time ✓  | ■ Centralised management records of individual user sound experience ✓ |

## Connection & Compatibility

Eustachio is an in-line Sound Management Unit, than can be connected to the most common professional headsets (Altesys, Plantronics and GN Netcom) and via USB to any Personal Computer for Data Storage (and Real Time control of the sound level received).The Eustachio is equipped with a Li-ion battery (with up to 7 working days autonomy) and the unit can be recharged and powered from the provided Battery Charger.