



# Position Paper

## **ANEC preliminary position on safety of music players**

**“Pump down the volume!”**

**ANEC-ICT-2009-G-002**

## 1. Executive Summary

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To avoid hearing damage and other lasting and irreversible non-auditory effects such as learning and memory impairments of more and more consumers, including children, ANEC believes that there are several technical and policy tools available to better protect consumers from exposure to noise from personal music players and other devices. The choice of the right tools from the toolbox of solutions should be guided by the following principles in the consumer interest:

➤ **Provision of reliable, understandable and transparent information to consumers**

Having sufficient and adequate information about the safety of music players consumers intend to buy, is an essential consumer need. Information should be reliable, understandable and transparent. In addition to information instructions and packaging, it should be possible to make a warning via the display of the equipment, maybe accompanied by an acoustic jingle, to alert consumers. However, in ANEC's opinion, warnings should only be complementary to strict safety measures and should not exonerate manufacturers from ensuring that personal music players do not present a risk to consumers.

➤ **Setting safety by default**

Sound limits need to be specified at a noise level acceptable according to the latest scientific opinions. Bearing in mind that it is difficult for consumer to know exactly at which decibels they are listening to and young consumers might not be spontaneously receptive to cautionary measures due to their young age, the safest sound limits should be provided by default settings in personal music players as they are sold in the shops. However, to take into account the need for louder noise levels for special applications or environments, a smart solution could be developed allowing for manual adjustment to higher volume levels.

➤ **Coherent regulatory framework**

Different legal basis and different standards apply to personal music players but none set specific sound limits. ANEC calls for a proper assessment of whether there is a need for further regulations and revision of existing safety standards. We believe a more coherent regulatory approach, encompassing legislation and associated standards, is necessary to provide all parties concerned, consumers and manufactures alike, with certainty and confidence in the safety of sound pressure limits of music players and similar devices.

## 2. Background

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In 2007, ANEC expressed concerns on whether sufficient preventive measures are in place to prevent hearing damage from the noise of personal music players among children and teenagers on the occasion of the open consultation of Commission Scientific Committee on Emerging and Newly Identified Health Risks (SCENIHR).

ANEC offered consequently to share the experience of its members (consumer testing laboratories or on their behalf) who usually carry out tests on such devices. Measurements tests have often highlighted the risks of exposure to noise. Those measurements are in accordance with the standard EN 50332 parts 1 and 2 (2003), which describes how to conduct the measurement on portable audio players using artificial ears or head simulators<sup>1</sup>.

In March 2008, ANEC nominated a new representative in the IEC and CENELEC Technical Committees 108 dealing with safety of audiovideo equipments, in order to address this priority issue for consumers. In May 2008, ANEC opposed the values suggested in the draft standard IEC 62368 Audio/Video, Information and Communication Technology Equipment – Safety – Requirements (118 decibels – to 125 decibels (dB (A))<sup>2</sup> and proposed lower and safest values<sup>3</sup>. However, although these lower values were supported by several countries., because of the complex issue of noise effects and the lack of knowledge in TC 108 at that time, it was agreed not to set limits but require a warning in the instruction, which ANEC deeply regretted<sup>4</sup>.

As the users of portable sound systems are often children, ANEC argued that a warning alone is not sufficient. In order to protect the users of portable sound systems from hearing damage, a technical limitation of the sound pressure is necessary. For the next edition of IEC 62368, ANEC has proposed to set limits.<sup>5</sup>

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<sup>1</sup> ANEC-ML-2007-0151

<sup>2</sup> The scope of this standard covers not only classical music recording apparatus (eg MP3 players) but also “small battery powered audio equipment whose purpose is to listen to recorded or broadcasted sound, and uses wired headphones or earphones that can be worn in or on or around the ears; that allows the and user to walk around.”

<sup>3</sup> 108/276/CDV

<sup>4</sup> 2<sup>nd</sup> CDV of 62368; 108/303/CDV

<sup>5</sup> ANEC-ICT-2008-G-022



## ANEC Position on safety of music players

In October 2008, SCENIHR released a scientific opinion which showed that 5-10% of personal music player listeners risk permanent hearing loss, if they listen to a personal music player for more than one hour per day each week at high volume settings (more than 89 decibels) for at least 5 years. Given the widespread use of such devices in recent years, especially among children and teenagers, it is estimated that 2,5 million to 10 million consumers are at risk<sup>6</sup>.

According to a recent Royal National Institute for the Deaf (RNID) research, people in the UK are listening to their MP3 players at high levels, with more than one in five setting the volume at sound levels of 100 decibels or more<sup>7</sup>.

The European Commission announced it will examine with Member States and stakeholders, possible measures that could be taken to better protect consumers from exposure to noise from personal music players and other similar devices during a conference to be held on 27 January 2009.

This position paper aims to present the ANEC preliminary views on what could be done in order to enhance the safety of music players for consumers, considering the intensity, length and number of exposures to users, especially children and teenagers, of personal music players and mobile phones with the same function.

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<sup>6</sup> [http://ec.europa.eu/health/ph\\_risk/committees/04\\_scenihhr/docs/scenihhr\\_o\\_018.pdf](http://ec.europa.eu/health/ph_risk/committees/04_scenihhr/docs/scenihhr_o_018.pdf)

<sup>7</sup> [http://www.hearingreview.com/news/2008-12-15\\_01.asp](http://www.hearingreview.com/news/2008-12-15_01.asp)

### **3. How to enhance the safety of personal music players?**

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ANEC believes that there are several technical and policy tools available to better protect consumers from exposure to noise from personal music players and other devices. These tools range from technical solutions industry should apply in the design of music players to the revision of existing safety standards and regulations.

Hearing loss from exposure to noise from personal music players is an avoidable risk, contrary to hearing loss due to ageing or illness, as it depends on the level of such noise. And the level can be changed. But the damages caused by such exposure can be permanent and irreversible. Therefore, prevention is imperative.

On a preliminary basis and without pre-empting any further discussion, ANEC thinks that the choice of the right tools from the toolbox of solutions should be guided by the following principles in the consumer interest.

#### **a) Provision of reliable, understandable and transparent information to consumers**

Having sufficient and adequate information about the safety of music players consumers intend to buy, is an essential consumer need. Information should be reliable, understandable and transparent.

However, warnings and labels are increasingly used as substitutes for requiring a manufacturer to put safe products on the market, thus putting the burden of protecting themselves on consumers. In ANEC's opinion, warnings and labels should only be complementary to strict safety measures and should not preclude the manufacturer from an obligation to ensure that personal music players do not present an avoidable risk or hazard to consumers.

Having said this, ANEC thinks that warnings on personal music players and on their packaging and accompanying instructions for use must draw the attention of consumers to the hazards of the music players and the related risks involved in using the device and to the ways of avoiding them.

Warnings such as "do not listen at a high volume" or "do not listen for a long period of time" do not always make sense to consumers. Is one hour spent listening to music waiting for a delayed train a long period of time? Warnings should therefore provide

consumers with clear information on both the inherent harms/hazards and the related risks involved in using the personal music players.

Consumers should be able to see and understand the warnings before purchase, in order to assess the hazard related to the device they want to buy. Therefore, the warning should be clearly displayed in an accessible way on the music player itself and on the packaging in such a way that the consumer can read the information before purchase.

As consumers need to be reminded of the warning every time they use their personal music player so as to avoid unsafe use or misuse, warnings shall be permanently marked on both the device and its packaging.

In the case a warning on the product being considered not effective because of the small dimension of the product and/or the design criteria's, it should be possible to make a warning via the display of the equipment. The latter could be used as a design element, maybe accompanied by an acoustic jingle.

This is in particular the case when there are marketing messages that are more prominent than the warning and/or the warning is displayed on packaging that is thrown away.

ANEC proposes that guidelines concerning the way the warnings should be presented in order to provide clarity of any symbols and/or text should be prepared. These guidelines shall be drawn up together with the various stakeholders and Member States authorities. CEN Guide 11 on product information could be taken into account.

When addressing the issue of raising awareness about hazards and risks, it should also be kept in mind that the risk of hearing loss due to excessive sound pressure from music players develops over time. Making consumers sensitive can be challenging in the absence of a "clear and present danger". On the other hand, it gives more time for prevention, thus increasing the chances of avoiding the risk.

### **b) Setting safety by default**

To avoid hearing damage and other lasting and irreversible non-auditory effects from leisure noise such as learning and memory impairments of more and more young people, including children, ANEC believes that just a warning is not sufficient. Sound limits need at least to be specified at a noise level acceptable according to the latest scientific opinions. The SCENHIR report states that the hazard to hearing from listening to the music at about 120 dB(A) levels might be extremely high, as it is considered that levels exceeding 80 dB(A) may pose a risk.

ANEC is of the opinion that in order to effectively protect consumers, and bearing in mind that it is difficult for consumers to know exactly the decibels they are listening to and that young consumers might not be spontaneously receptive to cautionary measures due to their young age, the safest sound levels for short and long time exposure should be provided by default in personal music players as they are sold in the shops. However, to take account of the need for louder noise levels with special applications or in certain environments (eg: traffic noise), a smart solution could be developed allowing for manual adjustment to higher volume levels. The adjustment could be protected by a password for example.

In addition, because the hazardous noise level depends on the time duration of the exposure, a limitation system calculating the acceptable time and level could also be envisaged.

It should also not be forgotten that the exposure to different types of noise and sounds can have a cumulative effect, in the sense that young consumers are exposed to noise not only when listening to personal music players but also when in a music bar or clubbing. When setting the recommended equivalent continuous sound level limits, the music listening habits and patterns of the young generation should be taken into account.

In modern recording technology, recording engineers can reduce music dynamic range in the studio to make the songs louder and more aggressive throughout the tune, especially for heavy metal and hard-core rock music. With digital recording and digital editing and digital music players, there is the ability to make everything loud, even the parts the band never intended to be loud in the first place. The same often happens with sound on the television as some commercials are three or four times louder than the program broadcasted.

And reducing dynamic range with compression or noise limiting could make the music more equivalent to industrial noise. Obviously this is not good in terms of sound level safety as the 'safe' 100dB personal stereo could damage hearing if playing this type of music.

This is why ANEC deeply regrets that the draft standard FprEN62368: 2008 which will replace the current safety standards, does not set any limits but just mentions a warning against listening music at "high volume". This is why ANEC requested that at least a normative reference should be made to the limits specified in EN 50332 on maximum sound pressure level measurement methodology and limit considerations. At the moment, this reference is only contained in a note, making it purely optional.

ANEC strongly believes that the standard IEC 60368 should set safe limits for the instantaneous sound level accompanied by equivalent continuous sound level of 100dB(A) Leq or lower (integrated level)<sup>8</sup>.

ANEC also suggests that the role of headphones and insert earpieces earphones in protecting consumers should be better assessed as the latter can have an estimated influence of 7-9 dB in the ear canal. On the other hand, "noise cancelling headphones" are special headphones that, by creating an "anti-noise", are actively lowering down – by 10 to 20 dB - the level of noise that enters the ear therefore allowing their users to listen to music at a much lower volume with exactly the same enjoyment they would have by listening to louder music with classic headphones. However, it should be noted that even traditional "on-ear" headphones, which are less expensive than "Noise cancelling headphones" could increase consumer protection as well.

A standard for sensitivity of headphones alone exists, IEC 60268-7, but it is not harmonized as it does not fall under the R&TTE Directive, but could be referenced under the GPSD.

### c) Coherent regulatory framework

At present, personal music players fall under the scope of both the Radio and Telecommunications Terminal Equipment Directive<sup>9</sup> which governs the health and safety aspects of radio equipment, including mobile phones, and the General Product Safety Directive<sup>10</sup> which applies to products not belonging to any other "specific" legislation, including personal music players.

The R&TTE Directive, which is a New Approach Directive, makes reference to European Harmonised Standard EN 60065:2002 "Audio, video and similar electronic apparatus - Safety requirements". This standard makes reference in a note to the standards EN 50332-1:2000 and EN 50332-2:2003 on maximum sound pressure level measurement methodology where limits are specified. This standard, which is not

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<sup>8</sup> There are two types of noise measurement: instantaneous sound level measurement – usually quoted in dB(A) and a measurement averaged over a specified period of time (usually 8 hours). This measurement is quoted in dB(A)Leq (equivalent continuous). For example, the noise level of 118 decibels – to 125 decibels (dB (A) for long term exposure (>0,5s), is extremely high and at the barrier of pain. This is a useful instantaneous safe 'maximum level' for both musical content or other noise indicators (alarms, etc.) but on its own it does not take account of long term hearing loss from devices such as music players and so should be accompanied by an equivalent continuous sound level of 100dB(A) Leq or lower.

<sup>9</sup> (R&TTE) Directive 8 1999/5/EC

<sup>10</sup> (GPSD) Directive 2001/95/EC





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referenced in the Official Journal, sets a maximum limit of 100 decibels for sound pressure.

An amendment to EN 60065:2002 has been recently approved (A11:2008) but not yet published in the Official Journal. It contains a more detail definition of portable sound system (section 2.2Z1) but does not set any sound pressure limits. It should enter into force in 2010.

No reference to harmonised standards is made in the GPSD Directive as far as safety of music players is concerned.

Against this context of regulatory asymmetry where standards can play a different role in providing consumers with a high level of protection, ANEC calls for a proper assessment of whether there is a need for further regulations and revision of existing safety standards. We believe a more coherent regulatory approach, encompassing legislation and associated standards, is necessary to provide all parties concerned, consumers and manufactures alike, with certainty and confidence in the safety of sound pressure limits of music players and similar devices.

## Acknowledgements

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## APPENDIX – About ANEC and other documentation

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### About ANEC

ANEC is the European Consumer voice in standardisation, representing and defending consumer interests in standardisation and certification, and in policy and legislation related to standardisation. Our aim is a high level of consumer protection. ANEC was set up in 1995 as an international non-profit association under Belgian law. It represents consumer organisations from the European Union Member States and the European Free Trade Association (EFTA) countries. Our General Assembly is composed of one national member per country, nominated jointly by the national consumer organisations in their country.

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