ecma INTERNATIONAL

Standard ECMA-370

2nd Edition / December 2006

TED -

Standard

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Introduction

In response to interest from public and institutional customers, ICT and CE experts started to develop ECMA TR/70 in 1995, with two revisions in the decade to follow. TR/70 catalogued product parameters related to the environment.

To meet the growing customer demand for standardized, comparable product environmental information, IT Företagen developed the IT Eco Declaration system in 1996, with frequent updates.

To have one widely accepted type II eco declaration, IT Företagen and Ecma International harmonised both declarations into ECMA-370 "THE ECO DECLARATION - TED". TED meets the basic principles of ISO 14021 (environmental labels and declarations / self declared environmental claims) and eco design standards such as ECMA-341.

It also addresses stakeholder comments on ECMA TR/70 and the IT Eco Declaration and recent regulatory changes.

The objective of this Standard is the use of accurate and verifiable environmental self-declarations that:

- increase potential for market forces to stimulate environmental improvements in products;
- prevent or minimise unwarranted claims;
- reduce marketplace confusion;
- facilitate international trade;
- increase opportunity for purchasers, potential purchasers and users to make more informed choices.

What is new in this harmonised Standard?

- This Standard contains two declarations: one on the company environmental profile and one on the product environmental attributes;
- Declarations contain new legal and market requirements;
- A quality control procedure is requested to ensure the correctness of the declarations;
- Fixed formats facilitate filling and comparability while retaining the freedom to enter additional information.
- This 2nd edition uses energy consumption rather then power consumption since power cannot be consumed although this term is frequently used. This is in line with IEC 62075 CDV.
- The Typical Energy Consumption (TEC) was introduced to support the new Energy Star for imaging devices and other upcoming agreed definitions.
- "Special" national legal requirements in the declarations have been removed to simplify the application.

This Ecma Standard has been adopted by the General Assembly of December 2006.

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1 Scope

This Standard specifies environmental attributes and measurement methods for ICT and CE products according to known regulations, standards, guidelines and currently accepted practices. The Standard is also applicable to products used as subassemblies, components, accessories and/or optional parts.

The standard addresses company programs and product related attributes, not the manufacturing processes and logistic aspects. For practical reasons, two separate declarations in Annex A and Annex B are provided:

Company environmental profile

The company environmental profile is split into legal and market requirements such as:

- recycling system participations;
- environmental policy and environmental management systems.

Environmental product attributes

The environmental product attributes are split into legal and market requirements on:

- hazardous substances;
- batteries;
- safety and EMC;
- consumable materials;
- packaging materials;
- treatment information;
- environmental conscious design (such as disassembly, recycling, product lifetime);
- energy consumption;
- emissions;
- ergonomics;
- documentation.

The attributes are listed without differentiation between product categories, not all attributes necessarily apply to each product category.

Based on frequently asked questions for customers, some product attributes such as safety, EMC and ergonomics have been included although they are not considered environmental matters.

Although the declarations as defined in Annex A and B are optimised for application in the European Union, this Standard is intended for global use.

2 Conformance

For the European Union, declarations conform to this Standard when all mandatory fields and items have been declared in Annex A and Annex B of this Standard, under quality control as defined in 6.2 and subject to verification as defined in 6.3.

To facilitate understanding, explanatory statements should be added to field C6 of Annex A and field P14 of Annex B.

NOTE
Ecma International invites and anticipates the development of declarations for other geographical markets, with their specific legal and market requirements, as additional normative annexes in subsequent editions of this Standard. In those editions, the Conformance clause will refer to the declarations in the normative annexes as regional Options.

3 References

The latest editions of the documents (including applicable amendments) listed herein apply.

3.1 Ecma International

ECMA-74	Measurement of Airborne Noise Emitted by Information Technology and Telecommunications Equipment (ISO 7779)
ECMA-109	Declared Noise Emission Values of Information Technology and Telecommunications Equipment (ISO 9296)
ECMA-328	Detection and Measurement of Chemical Emissions from Electronic Equipment
ECMA-341	Environmental design considerations for electronic products

3.2 ISO/IEC

ISO 3741	Acoustics -- Determination of sound power levels of noise sources using sound pressure -- Precision methods for reverberation rooms
ISO 3744	Acoustics -- Determination of sound power levels of noise sources using sound pressure -- Engineering method in an essentially free field over a reflecting plane
ISO 3745	Acoustics -- Determination of sound power levels of noise sources using sound pressure -- Precision methods for anechoic and hemi-anechoic rooms
ISO 7779	Acoustics -- Measurement of airborne noise emitted by information technology and telecommunications equipment (a previous edition of ECMA-74)
ISO 9296	Acoustics -- Declared noise emission values of computer and business equipment (ECMA-109)
ISO 11201	Acoustics -- Noise emitted by machinery and equipment - Measurement of emission sound pressure levels at a workstation and at other specified positions - Engineering method in an essentially free field over a reflecting plane
ISO 11469	Plastics -- Generic identification and marking of plastics products
ISO 11690	Acoustics -- Recommended practice for the design of low-noise workplaces containing machinery
ISO 14001	Environmental management systems -- Specification with guidance for use
ISO 14021	Environmental labels and declarations -- Self-declared environmental claims (Type II environmental labelling)
ISO/IEC 17025	General requirements for the competence of testing and calibration laboratories
IEC 62087	Methods of measurement for the power consumption of audio, video and related equipment

3.3 CEN/CENELEC

EN 50392	Generic standard to demonstrate compliance of electronic and electrical apparatus with the basic restrictions related to human exposure to electromagnetic fields (0 Hz – 300 GHz)
EN 12281	Printing and business paper. Requirements for copy paper for dry toner imaging processes (former DIN 19309)
prEN50279	Visual Display Units – Measuring methods for low frequency electric and magnetic near fields (final draft, 1998)

3.4 European Union (EU)

89/336/EEC	EMC Directive
91/157/EEC	Directive on batteries and accumulators
93/86/EEC	Marking of batteries
94/62/EEC	Packaging Directive
97/129/EC	Council Decision on establishing the identification system for packaging material
98/101/EC	Amendment to the battery Directive
2002/96/EC	Directive on Wastes from Electric and Electronic Equipment (WEEE)
2002/95/EC	Directive on the restriction of use of hazardous substances (RoHS)
1999/519/EC	Council Recommendation on the limitation of exposure of the general public to electromagnetic fields (0Hz to 300GHz)

3.5 International agreements

The 1987 Montreal Protocol on Substances that deplete the Ozone Layer (September 1997 version)

3.6 Sweden

TCO	Swedish Confederation of Professional Employees, TCO or Tjänstemännens Central Organisation
ICNIRP	International Commission on Non-Ionizing Radiation Protection supported by World Health Organization of the United Nations

3.7 United States Environmental Protection Agency (US EPA)

Energy Star (MoU) Memoranda of Understanding for energy efficient products

4 Definitions

For the purposes of this Standard the following definitions apply.

4.1 Self declaration

Self declared environmental claims as defined in ISO 14021.

4.2 Chemical emissions

Chemical substances released from a product and measured under predefined testing conditions as defined in ECMA-328.

4.3 Environment

Surroundings in which an organisation operates, including air, water, land, natural resources, flora, fauna, humans and their interrelation. (ISO 14001)

4.4 Energy consumption modes

As specified in ECMA-341.

4.5 Hazardous substances and preparations

Substances and preparations which are explosive, oxidising, extremely flammable, highly flammable, flammable, very toxic, toxic, harmful, corrosive, irritant, carcinogenic, mutagenic, toxic to reproduction, sensitising or dangerous to the ENVIRONMENT (as governed by existing national, regional and international legislation).

4.6 Noise emissions

Airborne sound radiated into the ENVIRONMENT from a defined source (machine or equipment) (ISO 11690).

4.7 Supplier

The party that supplies the product, process or service. It may be a manufacturer, distributor, importer, assembler, service organisation, etc.

4.8 Upgradeability

The capability of increasing the capacity of existing features in the product.

4.9 Noise test code

A standard that is applicable to a particular class, family or type of machinery or equipment which specifies all the information necessary to carry out efficiently the determination, declaration and verification of the noise emission characteristics under standardized conditions.

NOTE
ECMA-74 together with ECMA-109 comprises the noise test code for Information Technology and Telecommunications Equipment. These Standards are counterparts of ISO 7779 and ISO 9296, respectively.

5 Acronyms

CFC	chlorofluorocarbons
CRT	cathode ray tube
EMAS	Environmental Management and Audit Scheme
EMC	electromagnetic compatibility
HCFC	hydrogenated chlorofluorocarbons
ICNIRP	International Commission on Non-Ionising Radiation Protection
MoU	Memorandum of Understanding
PBB	polybrominated biphenyl
PBDE	polybrominated diphenyl ether
PCB	polychlorinated biphenyl
PCT	polychlorinated terphenyl
TCO	Swedish Confederation of Professional Employees, Tjänstemännens Central Organisation (TCO)
TVOC	total volatile organic compounds

6 Environmental claims and environmental claims verification

6.1 Environmental claims

Environmental self-declarations according to this Standard are claims regarding environmental aspects of a company, program, a product, a component and its packaging.

These claims shall be verifiable using specific predetermined criteria and procedures to assure data reliability.

6.2 Quality control

To ensure the correctness of the eco declarations, the company shall enforce a quality control system. Two types of systems are possible:

- company internal quality control (QC1);
- independent quality control such as IT-Företagen eco declaration system (QC2).

The type of the quality control system (QC1 and/or QC2) shall be declared in both declarations (company environmental profile & product environmental attributes).

NOTE 1
A company quality control should be organized within the company quality or environmental management systems, which may be ISO 9000 or ISO 14000 certified.

NOTE 2
IT-Företagen (www.itecodeclaration.org) organises a 3rd party quality control on a regular basis to maintain and increase the quality of the system and to check the correctness of issued declarations for its members.

6.3 Compliance verification

All claims made in the declaration shall be verifiable on request as usual business practice (QC1 and QC2). Examples of documents to be presented in such cases are:

- Attribute specific declaration: signed by a competent person in product assurance or similar position;
- Test report, from either the company or a contracted third party test laboratory. Such test laboratory should either be accredited, meet ISO/IEC 17025 or follow any other relevant laboratory quality standard or guidelines.

Verification documents, such as listed in Annex C, should be made available within 30 days after the request.

7 Company environmental profile

Annex A is the declaration form for the company environmental profile. The declaration may be published only when all rows and/or fields marked with a * (asterisk character in red) are filled-in.

7.1 Legal requirements

7.1.1 Product recycling (C1)

The company participates in a system or has its own system for collection and recycling of end of life products in countries where the company puts them on the market and where required (e.g. in line with EU WEEE directive 2002/96/EC).

7.1.2 Battery recycling (C2)

The company participates in a system or has its own system for collection and recycling of batteries in countries where the company puts products on the market (e.g. in line with EU battery directive 91/157/EEC) or pays eco tax / fee where required.

7.1.3 Packaging recycling (C3)

The company participates in a system or has its own system for collection and recycling of packaging material in countries where the company puts products on the market and where required (e.g. in line with EU packaging directive 94/62/EC).

7.2 Market requirements

7.2.1 Environmental policy and environmental management (C4)

The company shall declare the existence of a documented environmental policy approved by the management.

It shall be declared whether the company operates under an environmental management system. Furthermore, the coverage of the system shall be declared (product development and/or manufacturing).

If the company has an environmental management system it shall be declared, on which base it is certified:

- ISO 14001
- EMAS
- Other (then specify in section C6).

In case the company issues a regularly and environmental report this should be declared including whether it meets the recommendations of the Global Reporting Initiative (GRI) or any other (then to be specified in C6).

7.2.2 Recycling (C5)

It shall be declared whether information about the product, battery & packaging take back systems (C1, C2, C3) is available to any stakeholder in printed or electronic format.

7.2.3 Additional information (C6)

C6 should be used to provide information on additional environmental activities of the company.

In case the fields “other” (C4.2 and C4.3) of the company profile are ticked further information shall be provided in C6.

8 Product environmental attributes

Annex B is the declaration form for the product environmental attributes. The declaration may be published only when all rows and/or fields marked with a * (asterisk character in red) are filled-in.

8.1 Legal Requirements

8.1.1 Hazardous substances and preparations (P1)

A declaration of the absence / presence (for concentrations as specified in the legal references) shall be made for the following HAZARDOUS SUBSTANCES AND PREPARATIONS:

“n.a.” (not applicable) shall only be ticked if a product does not contain certain materials such as textile, leather or wooden parts.

a) Substances and preparations covered by general limitations, such as:

- Lead, mercury, cadmium, chromium-VI, PBB and PBDE
  e.g. as specified in EU 2002/95/EC (RoHS).
- Asbestos
  e.g. as specified in EU 76/769/EEC, amendment 1999/77/EC
- Ozone Depleting Substances: Chlorofluorocarbons (CFC), hydrobromofluorocarbons (HBFC), hydrochlorofluorcarbons (HCFC), Halons, carbontetrachloride, 1,1,1-trichloroethane, methyl bromide
  e.g. as specified in EU Regulation (EC) No. 2037/2000, 2038/2000, 2039/2000.
- Polychlorinated biphenyl (PCB), polychlorinated terphenyl (PCT),
  e.g. as specified in EU 76/769/EEC.
- Short chain chloroparaffins (SCCP) with 10-13 carbon atoms in the chain containing at least 48% per mass of chlorine in the SCCP
  as specified in Norwegian regulation relating to restrictions on the use of certain dangerous chemicals 20.12.2002.

b) Substances and preparations covered by limitations for textile and leather parts with direct skin contact

- Tri-(2,3,-dibromopropyl)-phosphate (TRIS), Tris-(aziridinyl)-phosphineoxide (TEPA), polybrominated biphenyl (PBB)
  e.g. as specified in EU 76/769/EEC.
- Azo colourants that split aromatic amines
  e.g. as specified in EU 76/769/EEC, amendment 2003/3/EC.

c) Substances and preparations covered by limitations for wooden parts

- Arsenic and chromium as a wood preservation treatment as well as pentachlorophenol and derivatives
  e.g. as specified in EU 76/769/EEC, Norwegian regulation relating to restrictions on the use of certain dangerous chemicals 20.12.2002.

d) Substances and preparations covered by limitations on the release from parts with direct and prolonged skin contact

- Nickel in concentrations higher than
  e.g. as specified in 76/769/EEC, amendment 94/27/EEC.

Determination of the material composition should be conducted in accordance with accepted industry practices.

For the applicability of any restrictions for the above listed substances, the appropriate legislation must be consulted.

When substances and/or preparations in products in the scope of this Standard, become banned or restricted, they shall also be reported using the field P14 in the declaration.

8.1.2 Batteries (P2)

The following items shall be declared for all batteries or accumulators contained in the product:

a) If hazardous batteries (e.g. as defined in 91/157/EEC) are used in the product that they are easy removable and labelled with the disposal and the substance logo (e.g. as defined in 91/157/EEC, 93/86/EEC).

b) That batteries do not contain mercury in concentrations higher than e.g. specified in 91/157/EEC.

c) If batteries are permanently installed in the product information on the environmentally hazardous substances and safe removal method is listed in the user manual (e.g. as required in 91/157/EEC).

“n.a.” shall only be ticked if a product does not contain batteries.

8.1.3 Electrical safety, EMC and connection to the telephone network (P3)

The following items shall be declared for the product:

a) If the product meets applicable electrical safety requirements such as the EU Low Voltage Directive (LVD) (73/23/EEC & 93/68/EEC).

b) If the product meets applicable electromagnetic compatibility requirements such as the EU EMC Directive (89/336/EEC).

c) If product is intended for connection to a public telecom network or contains a radio transmitter, it meets applicable radio and telecom requirements such as the EU R&TTE Directive (1999/5/EC).

d) If the product is CE-marked and a Declaration of Conformity is available (93/68/EEC).

“n.a.” shall only be ticked if a product does not fall under the scope of the above requirements.

8.1.4 Consumable materials (P4)

The following items shall be declared for all consumables provided with the product:

a) If a photo conductor (drum, belt etc.) is used in the product, it does not contain cadmium in concentrations higher than specified in 76/769/EEC and 91/338/EEC for example.

b) If ink/toner is used in the product, it does not contain cadmium in concentrations higher than specified in 76/769/EEC and 91/338/EEC for example.

c) If the ink/toner formulation/preparation is classified as hazardous according to regional requirements such as EU Directive 99/45/EC (and amendments), the product/packaging is labelled and a Material Safety Data Sheet (MSDS) in accordance with regional requirements such as EU 99/45/EC & 2001/58/EC is available.

"n.a." shall only be ticked if a product does not contain the referenced consumable.

8.1.5 Product packaging (P5)

The following items shall be declared for all packaging materials provided with the product:

a) The sum of the concentration levels of lead, cadmium, mercury, and hexavalent chromium present in packaging or packaging components does not exceed 0,01% by weight. (94/62/EC).

b) Packaging material is marked according to ISO 11469 referring ISO 1043 (97/129/EC).

c) The product packaging material is free from ozone depleting substances as specified in the Montreal Protocol / EC/2037/2000.

"n.a." shall only be ticked if packaging material doesn't contain plastics.

8.1.6 Treatment information (P6)

It shall be declared whether and Information for recyclers/treatment facilities (e.g. as requested by 2002/96/EC) is available.

"n.a." shall only be ticked if a product does not fall under the any legal requirement such as 2002/96/EC.

8.2 Market requirements – Environmental conscious design

Voluntary programs (eco labels or green procurement guidelines) exist for some products. When criteria specified in voluntary programs are met, it may be declared referring the applicable version. Consult Annex D for mapping of criteria for IT products in voluntary programs to sections in this declaration.

8.2.1 Disassembly, recycling (P7)

The following items supporting the disassembly, separation and/or recycling by professionals shall be declared for the product:

a) If all parts that have to be treated separately are easily separable.

b) If all plastic materials in covers/housing have no surface coating.

c) If all plastic parts >100g consist of one material or of easily separable materials.

d) If all plastic parts >25g have material codes according to ISO 11469.

e) If all labels are easily separable or made of compatible material.
(This does not apply to safety labels)

"n.a." shall only be ticked if a product does not contain the parts listed.

The following items supporting the disassembly, separation and/or recycling by professionals should be declared for the product:

a) If all plastic parts are free from metal inlays or have inlays that can be removed with commonly available tools.

8.2.2 Product lifetime (P7)

The following items supporting the extension of lifetime of the products shall be declared:

a) If an upgrading can be done e.g. with processor, memory, cards or drives.

b) If an upgrading can be done using commonly available tools.

“n.a.” shall only be ticked if the product type is typically not designed to be upgraded.

The following items supporting the extension of lifetime of the products should be declared:

a) Spare parts availability in years after the end of production.

b) Service availability in years after the end of production.

“n.a.” shall only be ticked if the product type is typically designed to be replaced rather than to be repaired or serviced.

Further information such as the service warranty/policy offered by the supplier or any restrictions to the spare part and service availability can be listed in the declaration field P14.

8.2.3 Material and substance requirements (P7)

Regarding materials and substances items a to c shall be declared and items e to k should be declared:

a) Product cover/housing material types >25g (plastic parts shall be specified according to ISO 11469 referring ISO 1043).

b) If the electrical cable insulation materials of power cables are halogen free (including PVC).

c) If the electrical cable insulation materials of signal cables are halogen free (including PVC).

d) If cover/housing plastic parts >25g are halogen free.

e) If printed circuit boards (without components) >25g are halogen free.

f) If chemical specifications of flame retardants in cover / housing plastic parts >25g is provided according to ISO 1043-4 (marking).

g) If chemical specifications of flame retardants in printed circuit boards >25g (without components) are provided according to ISO 1043-4 (marking).

h) The weight of recycled material in plastic parts.

i) If plastic parts >25g are free from flame retardant substances/preparations above 0.1% classified as R45/46, R50/51/53 and R60/61 (e.g. as in 67/548/EEC).

j) If light sources are free from mercury.

k) If mercury is used the number of lamps including the maximum mercury content per lamp in mg.

“n.a.” shall only be ticked if a product does not contain the parts listed.

8.2.4 Batteries (P8)

The following items shall be declared for all batteries (including accumulators) contained in the product:

a) If the product contains batteries defined as hazardous e.g. according to 91/157/EEC

b) Battery chemical composition.

“n.a.” shall only be ticked if a product does not contain batteries.

The following item should be declared for all batteries (including accumulators) contained in the product:

a) voluntary program/s which are met by the battery design.

“n.a.” shall only be ticked if a product does not contain batteries.

8.2.5 Energy consumption (P9)

Currently there are no standardised and widely agreed definitions and test methods for power levels or energy consumption modes precise enough to account for the differences in functionality for all products in the scope of this Standard.

Because the modes are not standardised, table 9.1 in Annex B shows a practical way to declare energy consumption, however, for not standardised modes the values are not suitable for comparison.

The generic terms describe the modes that contribute most to the overall energy consumption of a product.

For some products duty cycles or workload profiles have been developed to allow an estimation of the typical energy consumption (TEC).

NOTE
Mode definitions and terms are based on ECMA-341.

*When the device is operated at the power level P[W] for the time period t[h], the energy E=P*t [kWh] is consumed. Despite the widespread use of the term "power consumption", power cannot be consumed.*

The following items shall be declared for the On-Normal, Save 1, Off 1, No load modes and should be declared for other modes as applicable:

a) Power level in W (rms); the voltage/s applied for the measurement. If the product operates on different voltages in the intended market, the power levels shall be declared for all voltages. If values for more than one voltage are declared, they shall be separated by a forward slash character e.g. W1 / W2 for 115 / 230 V;

b) Description of the mode in which the power level has been measured. Energy Star definitions shall be used were available. Otherwise, the mode shall be clearly defined (the section "Additional information" (P14) and a link to further web information may be used);

c) Applied standard to measure the power levels or energy consumption. Energy Star definitions shall be used were available. Else, the measuring standard shall be clearly defined.

The following items should be declared:

d) Duration [s] to change from one mode to another (e.g. the time to switch from On-normal to Save 1, not the inactivity time until the change occurs);

e) If information about the energy save function is provided with the product;

f) Compliance to the energy criteria of voluntary programs, such as ENERGY STAR®, if declared, the version of the program shall be specified.

The Typical Energy Consumption (TEC) in kWh/y shall only be declared where a product specific standard or specification is available.

"n.a." shall only be ticked if a product does not have the specified mode (e.g. no load).

NOTE 1
Consult Annex D for example voluntary programs.

NOTE 2
The product power rating is irrelevant for the maximum energy consumption (On-max), it is intended for product safety only.

NOTE 3
For CE products, if an Energy Star standard is not available, IEC 62087 should be used

NOTE 4
The only internationally agreed TEC specification is Energy Star MOU for imaging devices

8.2.6 Noise emissions (P10)

The following items shall be declared for the product for the idle, operating and other applicable modes:

a) Declared A-weighted sound power level L_{WAd} in bels (B) according to ECMA-109 (ISO 9296);

b) Declared A-weighted emission sound pressure level L_{pAm} in decibels (dB) according to ECMA-109 (ISO 9296) at the operator position or if no operator position is defined for the product, at the bystander positions; check either the operator or bystander position(s) in P10.1 of Annex B;

c) Description of the modes and typical configuration for which the noise emissions have been declared (see P10.1 of Annex B).

If applicable, the following items shall be declared for the product:

d) If the product is not covered by ECMA-74 (ISO 7779), the standards used to measure the sound emissions and the horizontal measurement distance from the operator (or bystander positions) microphone to the product for the determination of L_{pAm};

e) If the product is a PC or workstation tower, check whether L_{pAm} was determined with the product on a desktop or at a desk-side (floor-standing) position of P10.1 of Annex B.

If a specific standard for the product (noise test code, see 4.9) is available, that standard (i.e., the noise test code) shall be used for measurements; e.g. for information technology and telecommunication equipment, ECMA-74 (ISO 7779). If no applicable noise test code exists, sound power measurements shall be made according to the basic standards ISO 3741, ISO 3744 or ISO 3745 and emission sound pressure measurements shall be made according to the basic standard ISO 11201. The results shall be declared according to ECMA-109 (ISO 9296).

NOTE 1
L_{WAd} is a statistical maximum value to account for both product variation and lab-to-lab variations and is typically about 0,3 - 0,4 bels greater than the average A-weighted sound power level, L_{WA}. ECMA-109 and ISO 9296 specify how to determine and verify L_{WAd}.

NOTE 2
Additional noise metrics may be declared in P14 for modes specified in P10.1, provided that the test standards and description of modes are also declared.

NOTE 3
Annex E shows examples of acoustic noise declarations.

Definitions for the modes shall be taken from the applicable measurement standard and shall unambiguously define product operation. If noise emission values are declared for undefined modes, they shall be described in detail in P14. Do not declare range of values in P10.1; declare single values in P10.1 for the described configuration for each mode. Refer to Annex E for guidance on reporting range of values in P14.

For emission sound pressure level L_{pAm}, declare values for the operator position unless the operator position is not defined in ECMA-74 (or ISO 11201 if ECMA-74 is not applicable), in which case report the average bystander position value. Check whether L_{pAm} is measured at the operator or bystander positions in Annex B, P10.1. The operator position shall be used for personal computers, notebook computers, and workstations. The average bystander position shall be used for servers, printers, multi-functional printing devices (MFP), storage devices, scanners (which are not MFP), and projectors. Consult ECMA-74 or other noise test codes, if applicable, for details, further guidance, and other product categories.

If a product does not have the mandatory mode as specified in P10, “n.a.” shall be ticked in P10. E.3 of Annex E shows examples fitting this rule.

Audio/video products or other CE products for which noise test codes (e.g. ECMA-74) are not available do not have to declare noise emissions and “n.a.” may be ticked in Annex B, P10.1. This does not preclude declaration of acoustic information for products for which a noise test

code is not available, provided that the standards used to test and to describe the modes are declared either in P10.1 or P14.

8.2.7 Chemical emissions from printing products (P10)

For all printing products, it shall be declared, if chemical emissions of:

a) Dust (particulate matter);

b) Ozone;

c) Styrene;

d) Benzene;

e) TVOC;

have been determined according to ECMA-328 or an other standard or measurement procedure as to be specified in the declaration.

It should be declared if the chemical emission requirements of a voluntary program/s are met by the product. The voluntary programs should be listed.

"n.a." shall only be ticked for non-printing products.

NOTE 1
Emission rates for the printer may be declared in P14.

8.2.8 Electromagnetic emissions (P10)

For computer displays it should be declared if the requirement for low frequency electromagnetic fields of a voluntary program/s are met by the product.

NOTE 1
Public perception and increased requests from customers related to electromagnetic field emissions which emanate from CRT type computer monitors led to the Swedish guideline MPR II - 1990:8 for Band I and II ranges in both electric and magnetic fields, as well as electrostatic fields. MPR II is included in the preliminary standard prEN50279.

According to the World Health Organisation, electromagnetic fields from Visual Display Units, VDUs do not have any negative health effects.

"n.a." shall only be ticked for products out of scope of the above requirement.

8.2.9 Consumable materials for printing products (P11)

For consumable materials for printing products it shall be declared, if

a) a Material Safety Data Sheet (MSDS) is available for the ink/toner preparation, even if not legally required (see 8.1.4).

b) paper containing recycled fibres that meets the requirements of EN12281 can be used.

c) 2-sided (duplex) printing/copying is an integrated product function while specifying whether it is a hardware or software function.

"n.a." shall only be ticked for non-printing products.

8.2.10 Ergonomics for computing products (P12)

For computing products it shall be declared, if

a) the computer system meets the ergonomic requirements of EN 29241-3, -7, -8 for CRT displays and EN-ISO13406-2 for flat panel displays.

b) the product keyboard meets the requirements of ISO 9995 and EN 29241-4.

c) the computer input device meets the requirements of ISO 9241-9.

"n.a." shall only be ticked for products out of scope of the referenced standards.

8.2.11 Packaging and documentation (P13)

The following items shall be declared for all packaging materials provided with the product:

a) The product packaging material type(s) and weight (kg) for each packaging fraction.

b) If the product plastic packaging is halogen free (including PVC).

c) If the user and product documentation contain chlorine bleached paper.

d) If the user and product documentation contain recycled paper.

For c) and d) “n.a.” shall only be ticked if the product does not contain any paper based user and product documentation.

8.2.12 Additional information (P14)

Since the declarations are fixed format, the field P14 should be freely used to provide additional product related information.

Annex A
(normative)

Company Environmental Profile

This Annex is also provided as a separate file – ECMA-370-Annex-A.doc – that shall be used for the declarations.

Company environmental profile - THE ECO DECLARATION

Brand		***Logo***
Company name *		
Contact information *		
Internet site *		
Issue date *		
Intended market *	☐ Global ☐ Europe ☐ Japan ☐ U.S. ☐ Other	
Additional information		

This is an uncontrolled copy when in printed form. Please refer to the contact information for the latest version.

The declaration may be published only when all rows and/or fields marked with a * are filled-in (n.a. for not applicable).

Quality control		**Requirement met**	
Item	Additional information regarding each item may be found under C6.	Yes	No
QC1 *	The company enforces an internal quality control system to ensure the correctness of this eco declaration	☐	☐
QC2 *	The company is a member of an eco declaration system that enforces regular independent quality control such as organized by IT-Företagen (see www.itecodeclaration.org).	☐	☐

Company environmental profile - Legal requirements		**Requirement met**		
Item	*=mandatory to fill in. Additional information regarding each item may be found under C6.	Yes	No	n.a.
C1	**Product recycling**			
C1.1*	The company participates in a system or has its own system for collection and recycling of end of life products in countries where the company puts them on the market and where required (e.g. in line with EU WEEE directive 2002/96/EC)	☐	☐	
C2	**Battery recycling**			
C2.1*	The company participates in a system or has its own system for collection and recycling of batteries in countries where the company puts products on the market (e.g. in line with EU battery directive 91/157/EEC) or pays eco tax / fee where required.	☐	☐	
C3	**Packaging recycling**			
C3.1*	The company participates in a system or has its own system for collection and recycling of packaging material in countries where the company puts products on the market and where required (e.g. in line with EU packaging directive 94/62/EC)	☐	☐	

Company environmental profile - Market requirements		**Requirement met**		
Item	*=mandatory to fill in. Additional information regarding each item may be found under C6.	Yes	No	
C4	**Environmental policy and environmental management**			
C4.1*	The company has a documented environmental policy approved by the management.	☐	☐	
C4.2*	The company has an environmental management system covering: Product development Manufacturing If so certified according to: ☐ ISO 14001 ☐ EMAS ☐ Other as specified in C6	☐ ☐	☐ ☐	
C4.3	The company regularly publishes an environmental report. If so, it meets the recommendations of ☐ The Global Reporting Initiative ☐ Other as specified in C6	☐	☐	☐
C5	**Recycling**			
C5.1*	Information about the product, battery & packaging take back system (C1, C2, C3) is available in printed or electronic format.	☐	☐	
C6	**Additional information**			

Annex B
(normative)

Product Environmental Attributes

This Annex is also provided as a separate file – ECMA-370-Annex-B.doc – that shall be used for the declarations.

Product environmental attributes – THE ECO DECLARATION

Brand *		**Logo**
Company name *		
Contact information *		
Internet site *		
Additional information		

The company declares (based on product specification or test results based obtained from sample testing), that the product conforms to the statements given in this declaration.	
Type of product *	
Commercial name *	
Model number *	
Issue date *	
Intended market *	☐ **Global** ☐ **Europe** ☐ **Japan** ☐ **U.S.** ☐ **Other**
Additional information	

This is an uncontrolled copy when in printed form. Please refer to the contact information for the latest version.

The declaration may be published only when all rows and/or fields marked with a * are filled-in (n.a. for not applicable).

Quality Control		**Requirement met**	
Item	Additional information regarding each item may be found under P14.	Yes	No
QC1 *	The company enforces an internal quality control scheme to ensure the correctness of this eco declaration	☐	☐
QC2 *	The company is a member of an eco declaration system that enforces regular independent quality control such as organized by IT-Företagen (see www.itecodeclaration.org).	☐	☐

Model number *			
Issue date *		**Logo**	

Product environmental attributes - Legal requirements		**Requirement met**		
Item	*=mandatory to fill in. Additional information regarding each item may be found under P14.	Yes	No	n.a.
P1	**Hazardous substances and preparations**			
P1.1*	Products do not contain lead, cadmium, mercury, hexavalent chromium, polybrominated biphenyl (PBB) and polybrominated diphenyl ether (PBDE) as specified in *EU 2002/95/EC and its amendments*	☐	☐	
P1.2*	Products do not contain Asbestos *(EU 76/769/EEC, amendment 1999/77/EC)*	☐	☐	
P1.3*	Products do not contain Ozone Depleting Substances: Chlorofluorocarbons (CFC), hydrobromofluorocarbons (HBFC), hydrochlorofluorcarbons (HCFC), Halons, carbontetrachloride, 1,1,1-trichloroethane, methyl bromide (*EU : Regulation (EC) No. 2037/2000, 2038/2000, 2039/2000)*	☐	☐	
P1.4*	Products do not contain polychlorinated biphenyl (PCB), polychlorinated terphenyl (PCT), (*EU 76/769/EEC)*	☐	☐	
P1.5*	Products do not contain short chain chloroparaffins (SCCP) with 10-13 carbon atoms in the chain containing at least 48% per mass of chlorine in the SCCP as specified in *Norwegian regulation relating to restrictions on the use of certain dangerous chemicals 20.12.2002*	☐	☐	
P1.6*	Textile and leather parts with direct skin contact do not contain Tri-(2,3,-dibromopropyl)-phosphate (TRIS), Tris-(aziridinyl)-phosphineoxide (TEPA), polybrominated biphenyl (PBB) (*EU 76/769/EEC)*	☐	☐	☐
P1.7*	Textile and leather parts with direct skin contact do not contain Azo colourants that split aromatic amines as specified in *EU 76/769/EEC, amendment 2003/3/EC*	☐	☐	☐
P1.8*	Wooden parts do not contain arsenic and chromium as a wood preservation treatment as well as pentachlorophenol and derivatives (*EU 76/769/EEC)*	☐	☐	☐
P1.9*	Parts with direct and prolonged skin contact do not release nickel in concentrations higher than specified in *76/769/EEC, amendment 94/27/EEC*	☐	☐	☐
P2	**Batteries**			
P2.1*	If hazardous batteries (as defined in *91/157/EEC*) are used in the product they are easily removable and labelled with the disposal and the substance logo (as defined in *91/157/EEC, 93/86/EEC*)	☐	☐	☐
P2.2*	If batteries are used in the product they do not contain mercury in concentrations higher than specified in *91/157/EEC*	☐	☐	☐
P2.3*	If batteries are permanently installed in the product, information on the environmentally hazardous substances and safe removal method is listed in the user manual *(91/157/EEC)*	☐	☐	☐
P3	**Electrical safety, EMC and connection to the telephone network**			
P3.1*	The product meets the Low Voltage Directive (LVD) regarding electrical safety *(73/23/EEC & 93/68/EEC)*	☐	☐	☐
P3.2*	The product meets the EMC Directive regarding electromagnetic compatibility *(89/336/EEC / 2004/108/EEC after June, 20th 2007)*	☐	☐	☐
P3.3*	If product is intended for connection to a public telecom network or contains a radio transmitter, it meets the EU R&TTE Directive *(1999/5/EC)*	☐	☐	☐
P3.4*	The product is CE-marked *and a Declaration of Conformity is available (93/68/EEC)*	☐	☐	☐
P4	**Consumable materials**			
P4.1*	If a photo conductor (drum, belt etc.) is used in the product, it does not contain cadmium in concentrations higher than specified in *(76/769/EEC and 91/338/EEC)*	☐	☐	☐
P4.2*	If ink/toner is used in the product, it does not contain cadmium in concentrations higher than specified in *(76/769/EEC and 91/338/EEC)*	☐	☐	☐
P4.3*	If the ink/toner formulation/preparation is classified as hazardous according to EU Directive 1999/45/EC, and as amended, the product/packaging is labelled and a Material Safety Data Sheet (MSDS) in accordance with *(99/45/EC & 2001/58/EC)* is available.	☐	☐	☐
P5	**Product packaging**			
P5.1*	The sum of the concentration levels of lead, cadmium, mercury, and hexavalent chromium present in packaging or packaging components does not exceed 0,01% by weight *(94/62/EC).*	☐	☐	
P5.2*	Plastic packaging material is marked according to ISO 11469 referring ISO 1043.*(97/129/EEC)*	☐	☐	☐
P5.3*	The product packaging material is free from CFC/HCFC.	☐	☐	☐
P6	**Treatment information**			
P6.1*	Information for recyclers/treatment facilities (e.g. as requested by 2002/96/EC) is available.	☐	☐	☐

Model number *			
Issue date *		**Logo**	

Product environmental attributes - Market requirements - Environmental conscious design						
					Requirement met	
Item	*=mandatory to fill in. Additional information regarding each item may be found under P14.				Yes	No	n.a.
P7	**Design** **Disassembly, recycling**						
P7.1*	Parts that have to be treated separately are easily separable				☐	☐	☐
P7.2*	Plastic materials in covers/housing have no surface coating.				☐	☐	☐
P7.3*	Plastic parts >100g consist of one material or of easily separable materials.				☐	☐	☐
P7.4*	Plastic parts >25g have material codes according to ISO 11469 referring ISO 1043.				☐	☐	☐
P7.5	Plastic parts are free from metal inlays or have inlays that can be removed with commonly available tools.				☐	☐	☐
P7.6*	Labels are easily separable. (This requirement does not apply to safety/regulatory labels).				☐	☐	☐
	Product lifetime						
P7.7*	Upgrading can be done e.g. with processor, memory, cards or drives				☐	☐	☐
P7.8*	Upgrading can be done using commonly available tools				☐	☐	☐
P7.9.	Spare parts are available after end of production for: years						☐
P7.10	Service is available after end of production for: years						☐
	Material and substance requirements						
P7.11*	Product cover/housing material type: Material type: Material type: Material type:						
P7.12*	Electrical cable insulation material of power cables are halogen free (including PVC)				☐	☐	☐
P7.13*	Electrical cable insulation material of signal cables are halogen free (including PVC)				☐	☐	☐
P7.14	All cover/housing plastic parts >25g are halogen free				☐	☐	☐
P7.15	All printed circuit boards (without components) >25g are halogen free				☐	☐	☐
P7.16	Chemical specifications of flame retardants in cover / housing plastic parts >25g according ISO 1043-4:				☐	☐	☐
P7.17	Chemical specifications of flame retardants in printed circuit boards (without components) >25g according ISO 1043-4:				☐	☐	☐
P7.18	Weight of recycled material in plastic parts is						
P7.19	Plastic parts >25g are free from flame retardant substances/preparations above 0.1% classified as R45/46, R50/51/53 and R60/61 *(67/548/EEC)*				☐	☐	☐
P7.20	Light sources are free from mercury If mercury is used specify: Number of lamps: and max. mercury content per lamp: mg				☐	☐	☐
P8	**Batteries**						
P8.1*	Product does not contain batteries defined as hazardous according to *91/157/EEC*				☐	☐	☐
P8.2*	Battery chemical composition:						☐
P8.3	Batteries meet the requirements of the following voluntary program/s:						☐
P9	**Energy consumption**						
9.1	For the product the following power levels or energy consumptions have been measured:						
Mode	Power level at * Volts	Time (s) to <mode>	Mode description		Reference/ Standard		n.a.
On-max	W		*		*		☐
On-normal	* W	to	*		*		☐
On-idle	W	to	*		*		☐
Save 1	* W	to	*		*		☐
Save 2	W	to	*		*		☐
Off 1	* W	to	*		*		☐
Off 2	W	to	*		*		☐
No load	* W		External power supplies/charger plugged in but disconnected from the product		*		☐
TEC	* kWh/y Typical Energy Consumption per year				*		☐
P9.2*	Information about the energy save function is provided with the product.						
P9.3	The product meets the energy requirements of the following voluntary program/s: ENERGY STAR® MOU Others specify:						

Model number *			
Issue date *		**Logo**	

Product environmental attributes - Market requirements (continued)							**Requirement met**		
Item	*=mandatory to fill in. Additional information regarding each item may be found under P14.						Yes	No	n.a.
P10	**Emissions**								
	Noise emission – Declared according to ISO 9296								
P10.1	Mode	Mode description	Declared A-weighted sound power level L_{WAd} (B)	Declared A-weighted sound pressure level L_{pAm} (dB)					
				Operator position ☐	Bystander positions ☐ (only if product is not operator attended)				
				Desktop ☐ or Deskside ☐					
	Idle	*	*						☐
	Operation	*	*						☐
	Other mode								
	Measured according to: ☐ ISO7779 ☐ ECMA-74 ☐ Other (only if not covered by ECMA-74 with L_{pAm} measurement distance m)								
P10.2	The product meets the acoustic noise requirements of the following voluntary program/s:						☐	☐	☐
	Chemical emissions from printing products								
P10.3*	Test performed according to ECMA-328 standard ☐, other specify: The test covers: Dust ☐ Ozone ☐ Styrene ☐ Benzene ☐ TVOC ☐						☐	☐	☐
P10.4	The product meets the chemical emission requirements of the following voluntary program/s:						☐	☐	☐
	Electromagnetic emissions								
P10.5	Computer display meets the requirement for low frequency electromagnetic fields of the following voluntary program/s:						☐	☐	☐
P11	**Consumable materials for printing products**								
P11.1*	A Material Safety Data Sheet (MSDS) is available for the ink/toner preparation, even if not legally required (see P4.3).						☐	☐	☐
P11.2*	Paper containing recycled fibres that meets the requirements of EN12281 can be used.						☐	☐	☐
P11.3*	2-sided (duplex) printing/copying is an integrated product function.						☐	☐	☐
P12	**Ergonomics for computing products**								
P12.1*	The computer system meets the ergonomic requirements of EN 29241-3, -7, -8 for CRT displays and EN-ISO13406-2 for flat panel displays.						☐	☐	☐
P12.2*	The product keyboard meets the requirements of ISO 9995 and EN 29241-4.						☐	☐	☐
P12.3*	The computer input device meets the requirements of ISO 9241-9.						☐	☐	☐
P13	**Packaging and documentation**								
P13.1*	Product packaging material type(s): weight (kg): Product packaging material type(s): weight (kg): Product packaging material type(s): weight (kg):						☐	☐	
P13.2*	Product plastic packaging is halogen free (including PVC)						☐	☐	☐
P13.3*	User and product documentation do not contain chlorine bleached paper						☐	☐	☐
P13.4*	User and product documentation contain recycled paper						☐	☐	☐
P14	**Additional information**								

NOTE
Additional lines may be inserted to declare further items, by positioning the cursor at the far right of the row and hitting the <Enter> key.

Annex C
(informative)

Verification Documentation

The table below lists the verification documents that should be made available (either electronically or in a printed form) in accordance with 6.3.

Company environmental profile - Legal requirements	
Item	**Verification documentation**
C1	**Product recycling**
C1.1	Contract with 3rd party or signed letter with company system description
C2	**Battery recycling**
C2.1	Contract with 3rd party or signed letter with company system description
C3	**Packaging recycling**
C3.1	Contract with 3rd party or signed letter with company system description

Company environmental profile - Market requirements	
Item	**Verification documentation**
C4	**Environmental policy and environmental management**
C4.1	Document signed by management
C4.2	3rd party certificate or document signed by management
C4.3	Environmental report
C5	**Recycling**
C5.1	Documents proving this claim and documents provided with the product in printed or electronic format
C6	**Additional information**
	Document that proves the claim

Product environmental attributes - Legal requirements	
Item	**Verification documentation**
P1	**Hazardous substances in the product**
P1.1-P1.16	Letter signed by a competent person, product assurance or similar position
P2	**Batteries**
P2.1-P2.5	Letter signed by a competent person, product assurance or similar position
P3	**Electrical safety, EMC and connection to the telephone network**
P3.1-P3.4	Declaration of Conformity (DoC)
P4	**Consumable materials**
P4.1-P4.3	Letter signed by a competent person, product assurance or similar position and Material Safety Data Sheet (MSDS), if applicable
P5	**Packaging materials**
P5.1-P5.3	Letter signed by a competent person, product assurance or similar position
P6	**Treatment information**
P6.1	Letter signed by a competent person, product assurance or similar position

Product environmental attributes - Market requirements	
Item	**Verification documentation**
P7	**Environmental conscious design**
P7.1-P7.20	Letter signed by a competent person, product assurance or similar position
P8	**Batteries**
P8.1-P8.3	Letter signed by a competent person, product assurance or similar position
P9	**Energy consumption**
P9.1	Test report signed by a competent person, product assurance or similar position
P9.2	Documents provided with the product such as the user manual
P9.3	Letter signed by a competent person, product assurance or similar position
P10	**Emissions**
P10.1	Test report from either: • an accredited test laboratory • a laboratory meeting ISO/IEC 17025 • a laboratory following any other laboratory quality standard or guidelines
P10.2	Letter signed by a competent person, product assurance or similar position or reference to official website of the program proving the claim
P10.3	Test report according to ECMA-328 or other standard
P10.4	Letter signed by a competent person, product assurance or similar position or reference to official website of the program proving the claim
P10.5	Test report either from an accredited test laboratory or a laboratory meeting ISO/IEC 17025
P11	**Consumable materials for printing products**
P11.1	Material Safety Data Sheet (MSDS)
P11.2-P11.3	Letter signed by a competent person, product assurance or similar position
P12	**Ergonomics for computing products**
P12.1	Test report either from an accredited test laboratory or a laboratory meeting ISO/IEC 17025
P12.2-P12.3	Letter signed by a competent person, product assurance or similar position
P13	**Packaging and documentation**
P13.1-P13.4	Letter signed by a competent person, product assurance or similar position
P14	**Additional information**
	Document that proves the claim

Annex D
(informative)

Voluntary program criteria mapping

Green Public Procurement tenders frequently refer to voluntary eco labelling programs.

The following table shows a mapping between some voluntary programs for IT products that define attribute criteria and their corresponding sections in ECMA-370.

Sections in Annex B of ECMA-370	EU Flower	German Blue Angel	Japanese Eco Mark	Nordic Swan	Swedish TCO	Energy Star
P8 Batteries	X	X	X	X	X	
P9 Energy	X	X	X	X	X	X
P10.1 Acoustic Noise	X	X	X	X	X	
P10.3 Chemical Emission		X	X	X	X	
P10.5 Electromagnetic emissions	X	X	X	X	X	

www.itecodeclaration.org may be consulted for further information on voluntary programs for IT products.

NOTE
Eco labels set pass/fail criteria for attributes resulting in no qualification for the eco label if only one criterion isn't met. In contrast, TED reports the result of each criterion or the attribute values allowing a better assessment of the product environmental performance.

Annex E
(informative)

Examples of acoustic noise declarations

The following examples explain or interpret the requirements of 8.2.6 and the referenced standards ECMA-74 and ECMA-109 for some specific product types.

NOTE
In this Annex, some imperative words such as "shall" are used. However, such expressions are based on the original requirements of 8.2.6 and its normative references to ECMA-74 and ECMA-109. Therefore, this Annex does NOT state any new requirements for declaration purposes.

E.1 Personal Computer (PC) with Hard Disk Drives (HDD), Optical Disk Drives (ODD), and Fixed Disk Drives (FDD)

Idle mode is: "Power shall be switched on, the equipment shall be in a steady-state condition, with air-moving device(s) running, disk drives in the idle mode, a full character set displayed on the screen (or an operating system wait screen) and all other devices idling."

Idle mode is ***not*** standby or energy saving mode in which the fan is not spinning.

Operating mode is HDD operation with fan spinning and with both FDD and ODD not spinning. Do not report ODD as operating mode.

Noise emission values for additional modes may be reported as "other mode" in Annex B P10.1. The emission sound pressure level shall be measured at the operator position. If PC has fans that are dependent on room temperature or load, then the test temperature is 23 ^{o}C ± 2 °C

If the product is a PC or workstation tower, in Annex B, P10.1 check whether L_{pAm} was determined with the product on a desktop or at a desk-side (floor-standing) position.

E.2 Printer without cooling fan, such as a personal ink jet printer

Since there are no moving parts during the idle mode, idle mode is not defined and no measurements are required for this mode. Therefore, in Annex B, P10 check "n.a." for idle mode. Since there is no operator position defined for printers, emission sound pressure level L_{pAm} is measured at the bystander positions.

NOTE
For clarity, write "not applicable" in this case in the description of idle mode in Annex B, P10.

E.3 Video recorders (or/and other product categories for which there are no noise test codes)

Since there is no product specific noise test code prepared for video recorders, noise emission measurement is not required. In this case if the manufacturer does not declare noise emission values, check "n.a." in the box in Annex B, P10.

However, although not required, the manufacturer may declare noise emissions for the video recorder provided that the A-weighted sound power level L_{WA} is measured per ISO 3741, ISO 3744 or ISO 3745 and the declared A-weighted sound power level L_{WAd} is determined per ISO 9296. In Annex B, declare noise values and describe the modes in P10. If A-weighted emission sound pressure level is also declared, measure according to ISO 11201 and determine L_{pAm} per ISO 9296. The unit is tested on floor for L_{WA}; in P10 indicate the standards used and the measurement distance for L_{pAm} positions.

E.4 Products which have additional configurations with different noise emission values from those declared in P10

E.4.1 Example 1: Server with 1 – 3 power supplies, 0 – 10 hard disk drives (HDD)

Noise emission values are declared for “typical configuration”, which for this particular product is with 2 power supplies and 3 HDD. Values for this configuration are declared in Annex B, P10, and the configuration is described in Annex B, P14. Note that the “typical configuration” is not the minimum configuration (with 0 or 1 HDD or 1 power supply). Typical configuration may be the maximum configuration (with 3 power supplies and 10 HDD). If a manufacturer wishes to declare values for other configurations, use P14. For example, a manufacturer may wish to report the complete range of L_{WAd} and L_{pAm}, in which case the noise emission values and the configuration shall be identified in P14. In this case for example P14 could indicate: “Noise emission values in P10 are for a system with 3 HDD and 2 power supplies. For systems with 1 – 10 HDD and 1 – 3 power supplies: L_{WAd} = 5,1 – 5,7 B and L_{pAm} = 35 – 41 dB for idle mode; L_{WAd} = 5,4 – 6,3 B and L_{pAm} = 38 – 47 dB for operating mode with 1 – 10 HDD.”

E.4.2 Example 2: PC with space available for additional options

In this example the typical PC has a single HDD with space available for additional HDD and a graphic card. Noise emission values in Annex B, P10 reflect this typical configuration which should be described in P14. P14 should also state that additional options may increase the noise emission values. In this case P14 could state: “The noise emission values in P10 are for a typical system with 1 hard disk drive (HDD). If optional items with moving parts are added, such as HDD or graphic cards with fans, these may change the noise emission values.”