

Working document for a possible regulation for ecodesign requirements on “networked standby” - Explanatory Notes -

Rationale

The technical, environmental and economic study for energy consumption of standby in household and office equipment of 2008¹ has shown that network connectivity is/will become a common feature of household and office equipment. However, it was agreed that the technical basis of that study was not sufficient to set ecodesign requirements on low-power operating conditions providing networked connectivity (“networked standby”). Networked standby was identified as a priority in the Ecodesign Working Plan 2009². A further analysis was carried out³ which concluded that the electricity consumption of networked standby conditions of household and office equipment is significant (90 TWh, approx. the annual final electricity consumption of Finland), and significant potential for cost-effective improvements exist (around 40 TWh by 2020 according to preliminary estimates of the study). The improvements are mainly linked to the fact that network availability is currently provided by on- or idle-modes, and products are not entering low-power modes. A “networked standby” condition that maintains a certain level of network connectivity but deactivates main function(s) could decrease overall energy consumption of a “networked” product by ensuring that the product can be reactivated via a network without being in the on- or idle-mode.

Approach

As networked connectivity is a feature of a large range of products, including products being introduced in the future, it is suggested to maintain the “horizontal” approach of Commission Regulation (EC) 1275/2008 (“Standby Regulation”). Furthermore, it is suggested to limit the product scope to household and office equipment as defined in that Regulation, as “standby” remains a feature which is typical for household and office equipment, while “professional” equipment usually has to provide the main function on a rather continuous basis.

As a consequence it is suggested to complement the Standby Regulation by

- definitions specifying the “networked standby” operating condition(s) in terms of the resume time (that is, their functionality),
- power management requirements related to the condition(s),
- power consumption levels for the operating condition(s), including transition periods
- additional elements for measurements which are not provided by EN 50564.

It is suggested to integrate these elements into the “Standby Regulation” by an amending act. In the following further details of this approach are explained.

Relation with current requirements of the Standby Regulation

Networked products are a subset of the products covered by the Standby Regulation. The requirements for networked products do not apply to the other (non-networked) products covered by the regulation. However, the requirements in the current version of Regulation (EC) 1275/2008 will continue to apply to networked products. This means especially that:

a) networked products having a standby mode as defined in Regulation (EC)1275/2008 will have to fulfill the requirements for this standby mode.

¹ EuP Preparatory Study Lot 6 -Standby and Off-mode Losses, TREN/D3/91-2007-Lot26

² Communication from the Commission to the Council and the European Parliament - Establishment of the working plan for 2009-2011 under the Ecodesign Directive, COM/2008/0660 final

³ EuP preparatory study on Networked standby DG ENER Lot 26 (TREN/D3/91-2007-Lot26), see in particular Task 7-report.

- b) when no network ports are connected and – if applicable – wireless network connections are switched off, networked products will have to provide the power management as defined in Annex II, point 2 under (d) of the current regulation.⁴

Scope

The scope is equivalent to the scope of the standby-regulation. If products and their networked standby will in future be regulated through a product-specific “vertical” regulation, these products may, if appropriate, be subsequently exempted from the scope of the Standby Regulation in that vertical regulation.

The amendment only applies to products with network connectivity; only those will have to have a networked standby condition. The network connectivity must provide a useful service. A product is only considered a networked product if it can be reactivated by an external trigger. If it is not connected to a network port or if its network port is switched off, the product will have to comply with the requirements set out in Regulation (EC) 1275/2008.

In case manufacturers consider the provisions inappropriate for the intended use of their specific product they would need to provide a technical justification.

Definitions

Resume time:

It is proposed to define the resume time as time that the product requires to resume a main function after a remotely initiated trigger has been detected.

A definition based on "time-to-application", as discussed in the preparatory study, might include steps that go rather far (e.g. actual print out) while a definition based on "time-to-response" (e.g. mere response signal) is too narrow and does not reflect the habits and expectation of the users.

⁴ In principle no further addition to the text of Regulation (EC) 1275/2008 is needed to accommodate for this because:

In the case of a) if one or more network ports are connected or wireless network connections are switched on, the networked product is no longer complying with the definition of standby as defined in Regulation (EC) 2008/1275/EC and hence does not need to comply with the standby mode requirements.

In the case of b) no other energy-using products are dependent on the function of the networked product (because the network ports are disconnected or switched off), therefore the networked product shall offer a power management function according to Annex II, point 2 under (d).

Ecodesign requirements

Availability of modes:

Different network availabilities and hence different resume times require different levels of energy for maintaining necessary components in an (re)active state. The faster the reactivation has to be, the more functional components are active, and the higher the resulting energy level of the equipment will be.

It is proposed to define two levels of network availability

- High network availability "HiNA" (reactivation < 1 Sec)
- Low network availability "LoNA" (reactivation within more than 1 second)⁵

Power management and Default operating condition:

- All products shall, unless inappropriate for the intended use, offer a mode having networked standby into which the product should enter after the shortest possible time.
- It is suggested that LoNA is the default operating condition.
- A product may switch into HiNA before entering LoNA. The product shall be in LoNA after the shortest possible time and after one hour at the latest.
- The product shall only be able to remain in a network condition having HiNA if LoNA is inappropriate for the intended use. This would need to be (technically) justified in the technical documentation⁶.

Timing:

It is proposed to have two tiers: Given that the amendment will only come into force in the first half of 2012 and considering the needs for the re-design of products, a first tier requiring less ambitious power consumption levels could become effective in January 2014, and a second Tier with more ambitious requirements is foreseen for January 2016.

Measurements and verification procedures:

Additional elements related to "networked standby"

The additional elements required for measurement and verification procedures for networked standby which are not provided by EN 50564 are specified in chapters 4 and 6.

The second paragraph of point (3) in Annex II of the Standby Regulation is suggested to be repealed in light of the result of the standardisation process leading to EN 50564, as some of the required uncertainties were identified as being too tight.

⁵ The preparatory study also defines "Medium network availability" MeNA as an incentive for manufacturers to offer shorter resume times but it is assumed that the market will reward shorter resume times in any case.

⁶ It could be an alternative to define a very concise list of products that provide HiNA (typically telephones, routers, switches). However, this approach would require a set of clear definitions for the products in question.