

ANEC response to the CEN-CENELEC questionnaire on the possible need for standardisation on smart appliances

In June 2015, the CEN and CENELEC BT members were invited to share their views on the need for action on smart appliances. In ANEC's opinion, standardisation of smart appliances should ensure appliances are safe, interoperable, accessible and easy to use.

In this response, we provide our views on the possible need for standardisation in this area. As a membership-based association, our views reflect the comments we have received from our members following their consultation.

1. Do you see any need for coordination at European level to support existing activities in the area of smart appliances?

ANEC believes that existing activities on smart appliances should be coordinated at European level.

We would consider it helpful if an overview of existing activities in this area could be prepared, including scope of the work and stage of development. It is important that both present and future activities are coordinated in order to avoid duplication, contradictions and conflicts. To start with, a common definition of 'smart appliances' should be agreed upon.

In general, we believe standardisation at European level is needed, in particular in view of the Internal Market and free movement of smart appliances across borders.

We think far more information should be communicated to European consumers on these new technologies, considering that low awareness and knowledge of smart appliances among consumers may prove an obstacle to engagement and undermine the position of consumers in the energy market.

2. What specific elements do you want to see included in the discussion (e.g. related policy initiatives, Internet of Things, machine to machine communication, energy management, eco-design, data security issues...)?

Smart appliances can present threats as well as opportunities to consumers. Hence, we recommend to address the following issues in the standardisation work on smart appliances.

a) Consumer control

Consumers – but also businesses – tend not to trust what they cannot control or do not understand. User control is linked to trust and acceptance of smart appliances. The optimal way to achieve this is by implementing privacy and security by design.

We are concerned that not all of the expected ways of controlling an appliance are sufficiently covered by the present standardisation work. Concretely, we have seen appliances with internal timers that could not be connected to an external control-

mechanism without losing filed data. This is important, as one of the expected ways of harvesting the benefits of flexibility in electricity prices is for “aggregators” to buy the flexibility potential of households. This is intended to lead to the switching on and off of appliances in the home according to price changes and parameters set by the individual household.

Consumers must have control of appliances. A direct control should not be imposed from outside the house if the consumer does not agree with it. The ultimate right to override any smart operation set by the Customer Energy Management System is of paramount importance to consumers, especially those who find themselves in urgent need to switch a certain device on or off.

Because of the increased automation that smart appliances would entail, reference to ethics, dignity and interface with human relationships should not be forgotten in the standardisation and policy frameworks on smart appliances

b) Privacy and security

Smart appliances can represent a *de facto* invasion of privacy and also compromise consumer decision-making if the consumer is not in control. The collection, storage, use and exchange of personal data must be subject to agreement from consumers and to strict regulation in order to ensure data protection, as the transmitted data can reveal sensitive information of the consumer. We invite CEN and CENELEC to explore whether the security and privacy standards in place sufficiently protect the connection between the internet (cloud) and smart devices. For example, are the standards ensuring that the communication or transfer of data is secure along all of the communication channel?

In 2015, ANEC published several guides¹ to assist consumer representatives in addressing privacy issues related to personal data analysis. We recommend the following principles are reflected in the standardisation work on smart appliances:

1. *Remote control over device power* - The privacy implications of any remote ability to cause any digital device used by consumers to power up or power down should be evaluated.
2. *Eavesdropping digital radio emissions from devices* - The privacy implications of eavesdropping radio emissions when a device is powered up and in operation should be evaluated.
3. *Data transmission to and from the connected device (security)* - The privacy implications of the device and network security, and any mismatch of security configuration between device and network, should be evaluated.

¹ For completeness, please find all ANEC Guides on privacy at the following links:

- [ANEC Pocket Guide "Using Consumer Data: Consumer Representatives Guide on Privacy"](#)
- [ANEC Pocket Guide "Overview of Privacy Guidance for members of standards technical committees who are Consumer Representatives: Key Principles for Digital Device Privacy Impact Assessment"](#)
- [ANEC Pocket Guide "Overview of Privacy Guidance for Consumer Representatives in standards technical committees. Key Principles"](#)
- [ANEC Pocket Guide "Using Consumer Data. Data transfer, trading and privacy"](#)
- [ANEC Consumer Representatives Guidance "Domestic privacy and the privacy of digitally connected devices"](#)

4. *User control of data types passed over networks and remote processing of that data* - The default when data types are unknown should be evaluation of the most sensitive of the personal information being processed & transmitted in each direction.
5. *User personal data sensitivity* - The privacy implications of the sensitivity of the data types processed and collected should be evaluated.
6. *User control over personal privacy preferences* - The privacy implications for the degree of control over privacy preferences available to the user should be evaluated.
7. *User behaviours* - The privacy implications of user behaviour and their use of digital devices should be evaluated to identify privacy risks brought about by how the device is used in domestic life.
8. *User privacy exposure arising from organisational security breaches* - The risk to privacy should be evaluated for personal data lost or stolen from an organisation leading to the linking of that data to an individual either through the data itself or linking to the device used by the individual.

c) Internet of Things (IoT)

Smart appliances form part of the Internet of Things as its concept refers to a global network of uniquely-addressable, interconnected objects, based on standard communication protocols. The IoT can be defined as the infrastructure (hardware, software and services) that provides for the networking of physical objects and the exchange of information, such as their identities, their physical properties, and the information these objects 'sense' from their environments.

Hence it is necessary that policies and standards supporting the development of the IoT are conceived to address issues such as privacy and personal data protection, health and environment protection, interoperability across a range of networks and devices, as well as the optimal and efficient use of spectrum resources.

d) Accessibility

All consumers in the household should be able to use smart appliances, irrespective of age or ability. Standards for smart appliances should ensure the accessibility of devices. For example, speech/audio function, and compatibility with screen reader software, is necessary for visually-impaired persons and persons who are blind.

Elderly people, and those with disabilities, are vulnerable consumers with specific needs. The use of smart appliances must bring about real benefits. Of course, compatibility between mainstream appliances and assistive technology, even legacy ones, should be ensured. We are also concerned that increased complexity in programming the appliances will exclude some consumers from benefitting from the new features.

The principle of 'universal design' or 'design for all' is key if we want everyone to be able to use smart appliances. Although parts of ISO/IEC 40500:2012 (WCAG 2.0)

on Web Content Accessibility Guidelines may apply, we recommend new standards are developed, based on the principle of universal design.

e) Interoperability

We believe that interoperability of the smart appliance with other smart appliances in the household – from the same manufacturer or other manufacturers - must be a basic requirement. Interoperability would allow households to mix appliances from different manufacturers, so optimising consumer choice and facilitating competition among manufacturers. Moreover, it would prevent consumers from being locked-in and tied to products of one and the same company.

The appliance should be interoperable and communicate with/to other elements in the household, such as the in-home display, smart phone and the smart metering architecture (i.e. Customer/Home Energy Management).

f) Durability and upgradability

The number of switch-on/switch-off cycles is expected to increase greatly with the introduction of flexible energy prices. This may influence the safety & durability of products, as well as life expectancy. Durability must therefore be taken into account in the standards for smart appliances.

The upgrading of the appliance is another factor that plays a role for consumers. If the appliance cannot be upgraded when its firmware or software becomes outdated, life-expectancy decreases. A product may be discarded simply because its software does not support new functionalities, even though it remains capable of performing its main functions. We see this problem already with smartphones.

The (financial) benefits from using a smart appliance should outweigh the costs of purchase, installation and (if needed) upgrade of the appliance. Of course, the life-expectancy of the appliance also contributes to overall cost. Consumers may lose interest in smart appliances if they cannot feel the net benefits.

g) Safety

The Ecodesign preparatory study on smart appliances notes that smart appliances can bring new safety risks not addressed by the requirements of EN 60335. The standards for smart appliances should identify and offset the safety risks relevant to the type of device.

In addition, and noting societal concerns regarding rising levels of electromagnetic radiation (EMF), consideration must be given to the development of particular spectrum usage regulations and specifications (power level limitations, acceptable interference levels, coexistence, interference mitigation) that will respond to the concerns expressed. A key issue for debate concerns development of methodologies for measuring the cumulative level of electromagnetic radiation resulting from the large-scale presence of objects enabled with radio communication capabilities. We expect standards to play a crucial role here.

h) Environment and sustainability

Consumers are increasingly concerned by the impact of new technologies on future generations and on the planet. Standards for smart appliances should contribute to achieving products that are environmentally-neutral or made from decomposable materials. In particular, use of toxic chemicals in smart products should be reduced to a minimum. The development of low energy-consumption products should also be encouraged.

3. Would you support the organization of an event (e.g. a members' workshop involving industry experts) to discuss upcoming needs and issues from stakeholders for smart appliances and standardization?

ANEC believes an event or forum to discuss the various consumer needs for smart appliances would be very helpful. Consumer experts should be invited to speak as well as industry experts.

About ANEC

ANEC is the European consumer voice in standardisation, defending consumer interests in the processes of technical standardisation and conformity assessment, as well as related legislation and public policies.

ANEC was established in 1995 as an international non-profit association under Belgian law and is open to the representation of national consumer organisations in 33 countries.

ANEC is funded by the European Union and EFTA, with national consumer organisations contributing in kind. Its Secretariat is based in Brussels.



Raising standards for consumers

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