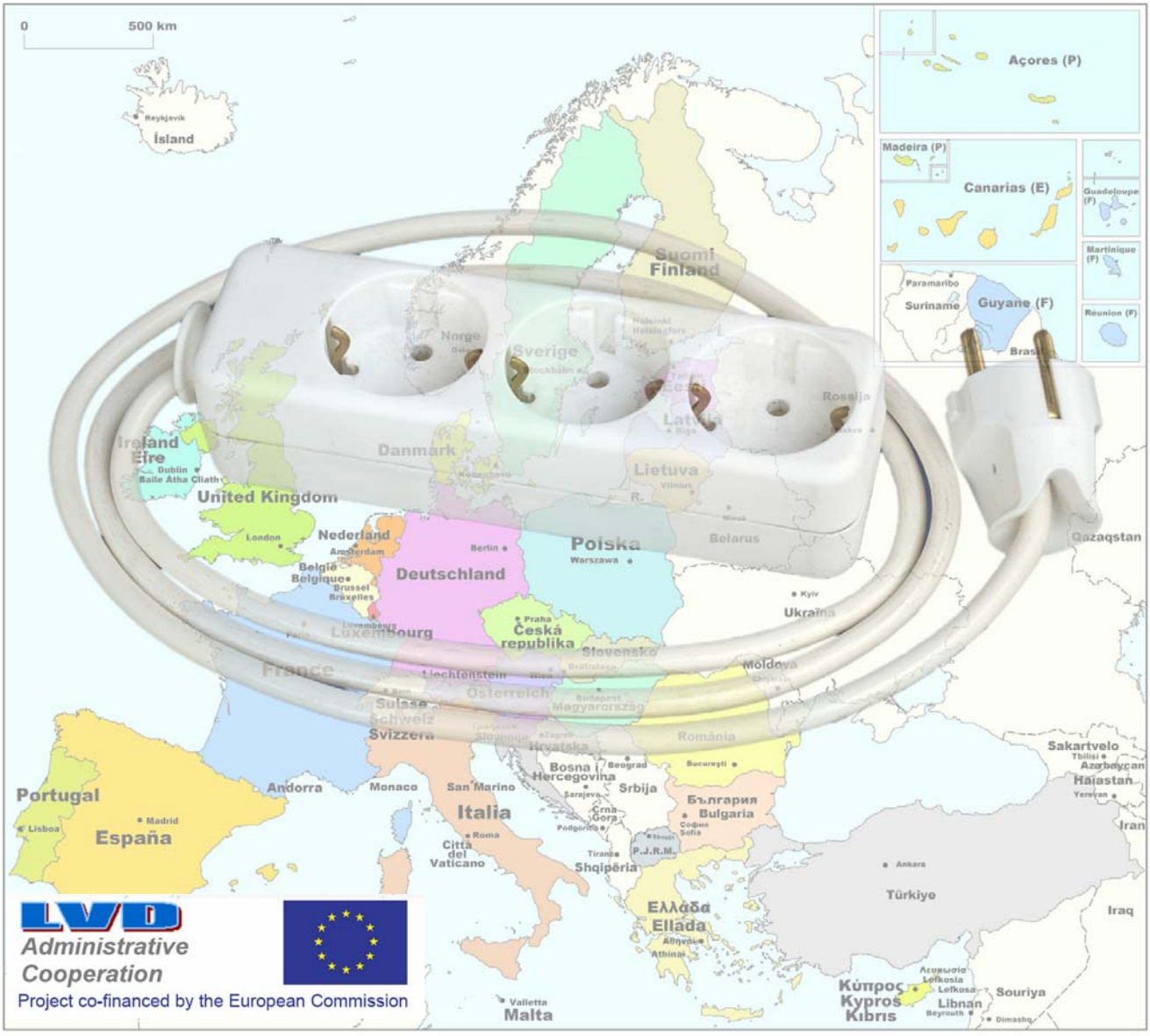
LVD Market Surveillance Campaign 2007

Electrical Safety of Cord Extension Sets

Final Report



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Executive Summary

Objectives

During the course of their ordinary market surveillance activities, it has come to the attention of the European LVD market surveillance authorities that cord extension sets frequently do not fulfil the safety requirements of the Low Voltage Directive (LVD). The main objectives of the LVD Market Surveillance Campaign were to promote the transformation of cross border market surveillance into an activity that is included in the daily tasks of national authorities. Additional objectives were to enforce compliance with the LVD, thus achieving a concrete improvement in product safety within a product category, to gain information on the degree of compliance of these products in the market and also to raise the profile of LVD-related market surveillance in the opinions of consumer organisations, trade and industry.

Key issues

Safeguard clause notifications under the LVD and statistics of the European rapid alert system for non-food products RAPEX have shown that a considerable number of defective cord extension sets posing risks for consumers can be found on the EU market.

The project was initiated by the national market surveillance authorities participating in the LVD Administrative Cooperation working group (LVD ADCO) and received financial contributions by the Commission.

In due course, a joint European project was set up to scrutinise the problem and make it more tangible, so that agreement on relevant measures to approaching the problem would ultimately be possible.

Main results

An unprecedented number of 20 European countries participated in the project. 209 cord extension sets were tested and the results show that 14.5% of the selected products complied with the given 22 test parameters for the project and thus with the safety objectives of the LVD.

1 Objectives

As economic players increasingly operate on the European level, market surveillance authorities need to adapt their operational procedures accordingly to match this challenge.

The primary objectives of the Low Voltage Directive (LVD) Market Surveillance Campaign were:

- to promote the transformation of cross border market surveillance from its current state (i.e. a singular event consuming considerable attention, overhead and resources) into an activity that is included in the daily tasks of national authorities.
- to enforce compliance with the LVD, thus achieving a concrete improvement in product safety within a product category
- to gain information on the degree of compliance of the products available on the market.
- to raise the profile of LVD-related market surveillance in the opinions of consumer organisations, trade and industry.

Additionally, information on the size of market parameters and the number of manufacturers and importers should be obtained.

2 Choice of Product Category

Safeguard clause notifications under the LVD and statistics on the European rapid alert system for non-food products (RAPEX, operated under the General Product Safety Directive), have demonstrated that cord extension sets with severe safety deficits are entering the Common Market. For the following reasons, this product was selected for the 2007 campaign:

Cord extension sets have found universal distribution and ubiquitous existence in all households.

Safety deficits may be severe and can compromise the safety measures of connected devices (e.g. due to the omission of earthing wires).

Fig. 1: A typical cord extension set, some shortcomings and their resulting consequences.

3 Participants and Financing

Due to these implications, DG SANCO decided to direct substantial financing to the project through the provision of a total sum of EUR 356,831.87, which means that 70% of the total costs were reimbursed to the Member States. Another important point was the administrative support provided by the project “Enhancing Market Surveillance Through Best Practice” (EMARS), which included three language versions of the project documents. Both factors were crucial to the success of the project leading to an unprecedented number of 20 participating countries, including Austria, Belgium, Bulgaria, Cyprus, the Czech Republic, Germany, Denmark, Spain, Finland, Iceland, Lithuania, Luxembourg, Netherlands, Norway, Malta, Poland, Sweden, Slovenia, Slovakia and the United Kingdom.

Fig. 2: Participating countries (yellow: type F (“Schuko”), green: type G (“UK”), blue: type (E (“FR”), orange: type K (“DK”)).

Four different plug systems are presently in use in the participating countries.

Type G	**Type F “Schuko”**
BS 1363	CEE 7/4 and CEE 7/7 plug
	
CY, UK, MT	AT, BG, DE, ES, FI, IS, LT, LU, NL, NO, SE, SI

Type E	**Type K**
CEE 7/5 and CEE 7/7 plug	SB afsnit 107-2-D1
	
BE, CZ, PL, SK	DK

Fig. 3: Countries and their plug systems

4 Legal Provisions on Cord Extension Sets

Legal provisions on cord extension sets are based on Community as well as on national law. First of all, there are no harmonised standards on the physical aspects of the different domestic plug and socket systems. They were originally based on the former CEE standard, which was out of print for an extended period of time and has since been adapted into different national standards. The IEC Technical Report TR 60083 2006-04 “Plugs and socket-outlets for domestic and similar general use standardised in member countries of IEC” lists these standards, which are mandatory in some Member States. Functional requirements are covered in national standards, which may also differ for the “same” plug system. They are generally based on the IEC 60884 standard.

On the community level, the General Product Safety Directive (GPSD) applies to plugs, sockets and cord extension sets, as for all consumer products. Concerning the LVD, “plugs and socket outlets for domestic use” are outside the scope according to Annex II. Regarding the other components of a cord extension set, the cable is covered by the LVD and harmonised standards exist.

The product “cord extension set” as a whole is covered by the LVD, as the LVD Guideline referring to the IEC International Electrotechnical Dictionary states: “any item used for ... distribution or utilisation of electrical energy”.

However, the industry decided not to develop a harmonised standard for this type of product. As a consequence, manufacturers cannot benefit from a presumption of conformity; instead, they must verify in their technical files that the procedures applied are suitable, in order to demonstrate that their products “have been constructed in accordance with good engineering practice in safety matters in force in the Community ...” (Art. 2 LVD). In this respect it must be noted that “good engineering practice” may extend beyond a national standard if a different (national) standard incorporates more up to date knowledge.

5 Design of the Test Program

5.1 Handling of the Different Plug Systems

The central issue of this project was the question of how to compare the results from four different plug systems, each of which employs specific national provisions (standards and/or regulations). Thus, a direct comparison of tests results (which is possible when evaluation is based on harmonised standards) had to be replaced by a different approach.

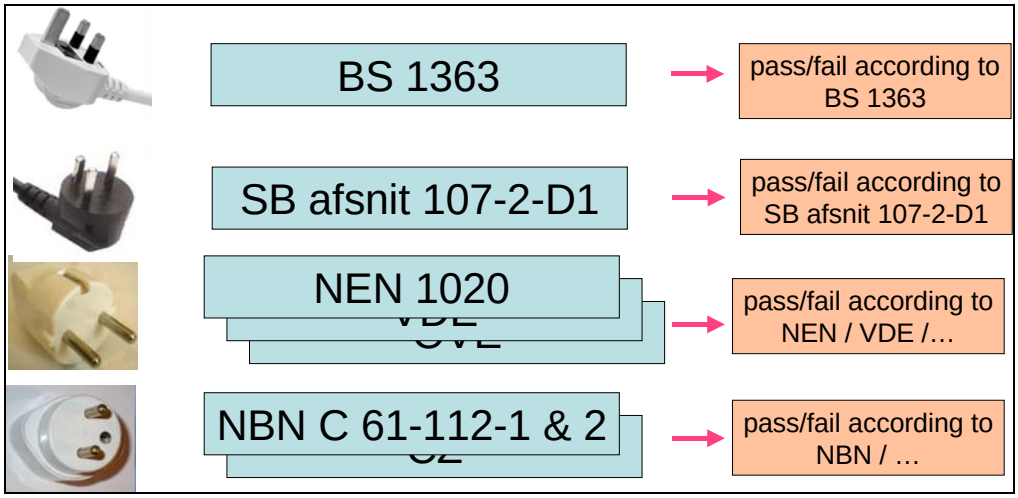

Fig. 4: Different provisions for different plug systems

The solution was derived from the following assumptions:

- All plug systems, though different, share the same risks
- All various national provisions address these risks
- Risks are checked against a set of test parameters stipulated by the various regulations
- This set of test parameters is included in all national provisions, although tests may differ slightly.

Consequently, a “test parameter layer” was introduced according to which the results could be compared with respect to the different national standards.

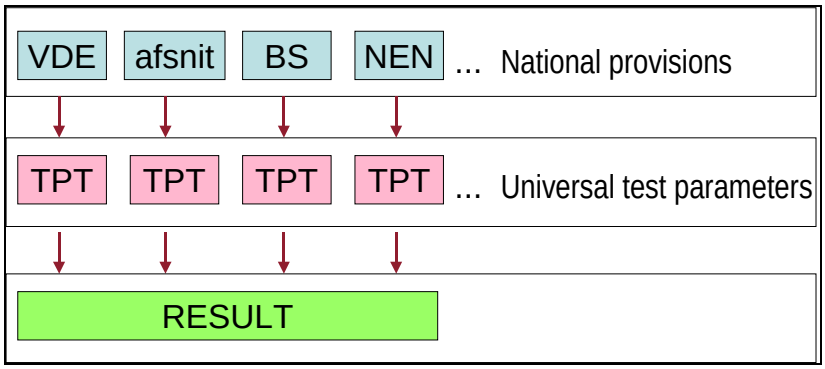

Fig. 5: The test parameter layer

5.2 Organisation of the Project

The project was divided into the following phases:

- Market orientation: In this phase, each participant collected information on the EU-manufacturers/importers of cord extension sets and the size of the market
- Sampling and assessing compliance with the administrative requirements
- Technical investigation
- Reporting

5.3 Market Orientation

Each participant should determine which importers and/or manufacturers bring cord extension sets onto the EU market. Whenever possible, an estimate of the relative importance the imports (e.g. the number, total sales in Euro, etc) should also be available.

This phase of the project should result in a list of importers and manufacturers (for each Member State) that are putting cord extension sets on the EU market, preferably with additional information on their market shares.

5.4 Sampling

The aim was to obtain the broadest possible view of the selected type of products in the European marketplace. This was a new approach compared to previous LVD market surveillance campaigns, where the objective of sampling was to single out possible non compliant products from the beginning. Taking this approach, it would obviously not be possible to obtain an overview of how the industry complies with the applicable legal

provisions, as the share of non compliant products would only give a measure of the efficiency of market inspectors.

For the cord extension set project it was therefore decided to perform a “quasi-random” sampling, taking products over the whole price range (up- and down-market) and from all origins (national, EU, and imported from third countries). For practical reasons, the basically more desirable true random sampling was out of reach within the framework of the project. As a consequence, it is reasonable to assume that those who took the samples might have, in one case or another, subconsciously selected products they felt could be prone to non-compliance. As a result, the percentage of products found to be non-conforming, might be biased to a certain extent. On the other hand, for the majority of test parameters, not even the most experienced market inspector can tell without a thorough lab exam whether a product is within the specifications or not, thus limiting any possible bias.

Sampling was done according to two objective characteristics: cord extension sets were selected which had

- a substantial market share and
- no extra features (i.e. basic cord extension sets with 3 to 6 sockets),

On average, ten samples per participant country were taken, resulting in a total number of 209 different types of cord extension sets investigated.

5.5 Evaluation

The test parameters were basically based on national provisions, the LVD and the GPSD. Within the LVD all essential safety aspects are covered. The test parameters were structured accordingly. They are of a technical nature and are therefore independent of the country-specific plug-socket-system. These are indicated as “supplementary national requirements”.

It is assumed that there are corresponding provisions for all test parameters in existence for all systems, which were provided by the Member States in which these systems are in use. This approach ensured that the evaluation and presentation of the results could be easily facilitated within the framework of this structure.

As the set of test parameters comprehensively covered relevant risks, valuable insight could be gained on the suitability of national testing programs.

5.5.1 Potential Risks of Cord Extension Sets

The greatest potential risks of cord extension sets include:

Electric shock due to accessibility to live parts

Electric shock due to accessibility to live parts can occur if the insulation on the cable is inadequate or if the material of either the plug or the socket outlet is of poor quality and will not withstand normal use or foreseeable misuse.

Electric shock due to missing earthing wires

Electric shock due to missing earthing wires can result in a very dangerous situation if the apparatus that is connected to the cord extension set is also faulty.

Fire

Fire can occur if there is either too little distance between live parts (which triggers an electric arc), or if there is a bad connection (higher resistance) somewhere in the cord extension set. In practice, the latter occurs if poor material is used in construction, so that either the pins in the plug or the contacts in the socket outlet are not held in a fixed position, thereby creating a hot spot. In the worst possible case, this hot spot can ultimately lead to a fire.

Why do we not see more accidents, taken into account the high number of non-compliant cord extension sets?

The project has revealed that in 74% of the cases, the cables used are of a reasonable quality, so the only failure that can lead to shock is caused by unsuitable material used in the construction of either of the plug or the socket outlet, resulting in breakage during normal use or foreseeable misuse. If this happens on the consumers' premises, most consumers will discover that the product has failed and will stop using it.

The electric shock that is triggered by a failure in an apparatus and a missing earth connection in the cord extension lead is also rarely seen. The reason for this is the wide use of Residual Current Circuit Breakers (RCCB's) in the installation; these shut down the current if such a failure occurs. It must also be remembered that this hazard requires a failure in both the apparatus connected to the cord extension set and a missing earth connection in the cord extension set itself.

With regard to the risk of fire which arises when the distance between live parts is too short, the test results showed that this type of failure is quite rare. However, the use of poor material is seen more often. In this case, the creation of a hot spot is possible. In some cases, the hot spot separates the contacts from the pins and no harm is done. In the remaining cases, the risk is real, in particular when the cord extension set is hidden away behind a sofa or in a similar place where it cannot easily be seen.

We can not exclude that fires are caused by the above mentioned deficiencies. However, in many cases, the source of fires remains unresolved.

5.5.2 Classification of Shortcomings

To support the preparation of the test report, a list of common product deficiencies was provided.

- F1 (Remark): A deviation from the product provisions which is not a direct safety hazard for persons, domestic animals or property but could be referred to the safety objectives of the LVD.
- F2 (Criticism): Deviations which can be a direct safety hazard for persons, domestic animals or property but could be referred to the essential safety objectives of the LVD.
- F3 (Serious criticism): Obvious and direct safety hazard for persons, domestic animals or property.
- P (passed the test parameters)

Codes basically follow the Nordic Market Surveillance Codes for Common Deficiencies. This code system corresponds to the seriousness of the shortcoming, whereby F1 is the lowest level of non-compliance, and classifications F2 and F3 correspond to increasingly serious shortcomings. The classification was used to sum up the assessment of the test parameters by the competent authorities in a comprehensive “verdict”.

The additional survey and risk analysis (e.g. according to the Guide to Corrective Actions) carried out by the authorities led to the conclusion that products which were classified as F2 and F3 and therefore presented an unacceptable risk of damage under foreseeable conditions of usage, would be removed from the market. This was the case for more than 80% of the products classified as F2 and F3.

According to Art. 3 of the LVD, Member States are only entitled to impede the free movement of goods if the safety objectives given in Annex I of the LVD are not met. As a consequence, most samples classified as F2 and F3 cannot be considered to fulfill the relevant safety objectives.

However, it must be clearly understood that even for these products, accidents need not necessarily occur unless a number of conditions are met, such as utilisation for a longer period of time, higher loads, frequent plugging and unplugging, use at elevated or low temperatures, or general careless handling, improper use, or a concurrence of further faults.

5.6 Reporting

Results from the participating countries were communicated electronically via the CIRCA[1] data base.

The primary means of communicating the results were “data collection spreadsheets” (DCSS), which were provided for each participant. Additionally,

- a scan of the declaration of conformity (DoC)
- one representative photo of the cord extension set which allows clear identification, and
- a photo of the type plate

were also uploaded to CIRCA.

[1] "CIRCA" is a part of the European Commission website with restricted access allowing for the secure exchange of information between members of an interest group, in this case the group being LVD ADCO.

6 Results

6.1 Main parameters

The following numbers define the main parameters of the evaluation:

209 different samples of cord extension sets were acquired

- 97 samples were partly tested
- 112 samples were completely tested (all 22 test parameters)

Since nearly all partly tested samples yielded a "FAIL" as the final result, the total evaluation remains valid.

6.2 Price Range and Origin

Nearly three quarters of the samples originated in China, while approximately one sixth came from the EU and about one 12th was of unknown origin. The Member State with the highest share was Germany (5.3%), followed by Poland with 3.3% and Bulgaria with 2.4%.

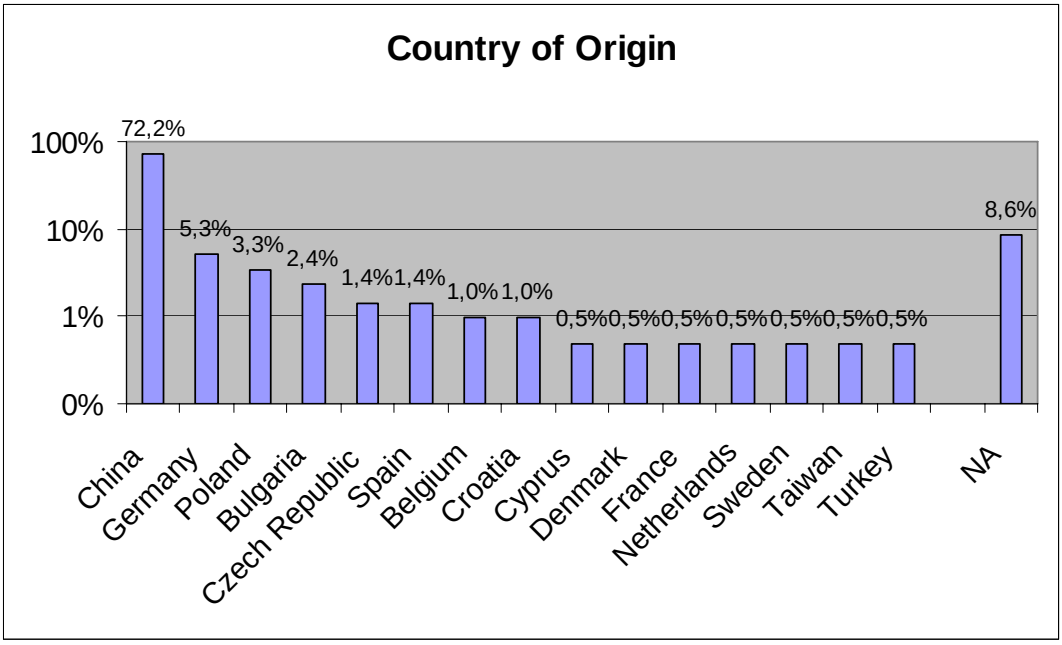

Fig. 6: Country of origin

Prices ranged from 50 Cents to about 20 EUR, with the majority in the two to four Euro range. The average price amounted to 5,18 EUR.

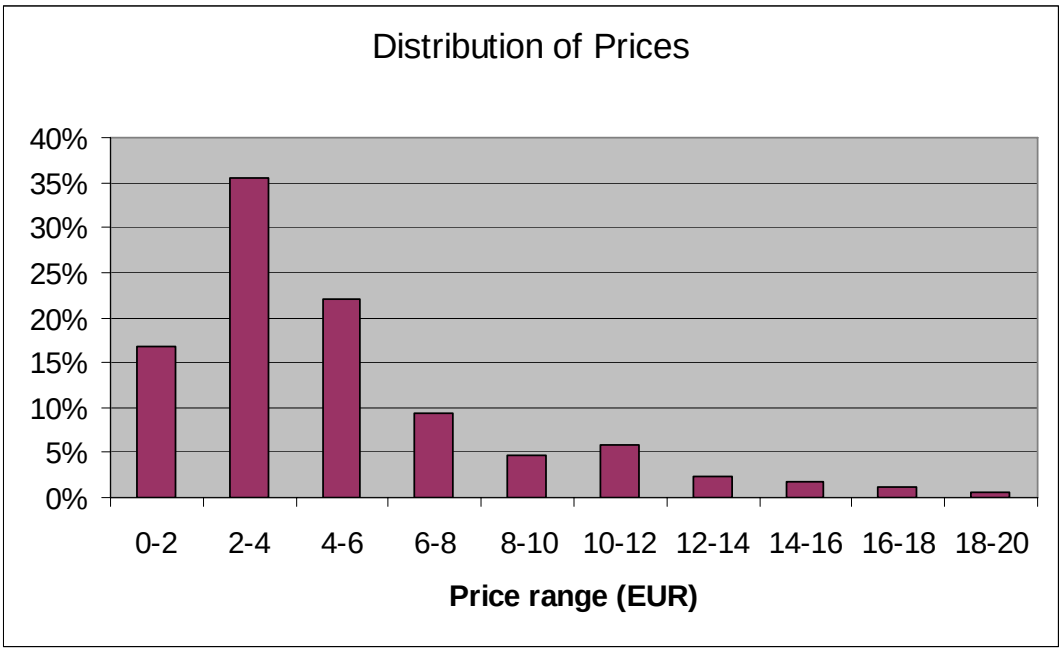

Fig. 7: Distribution of prices of samples

6.3 Influence of Origin

Contrary to popular belief, the region of origin indicated did not correlate as expected with the safety deficits of the products under investigation.

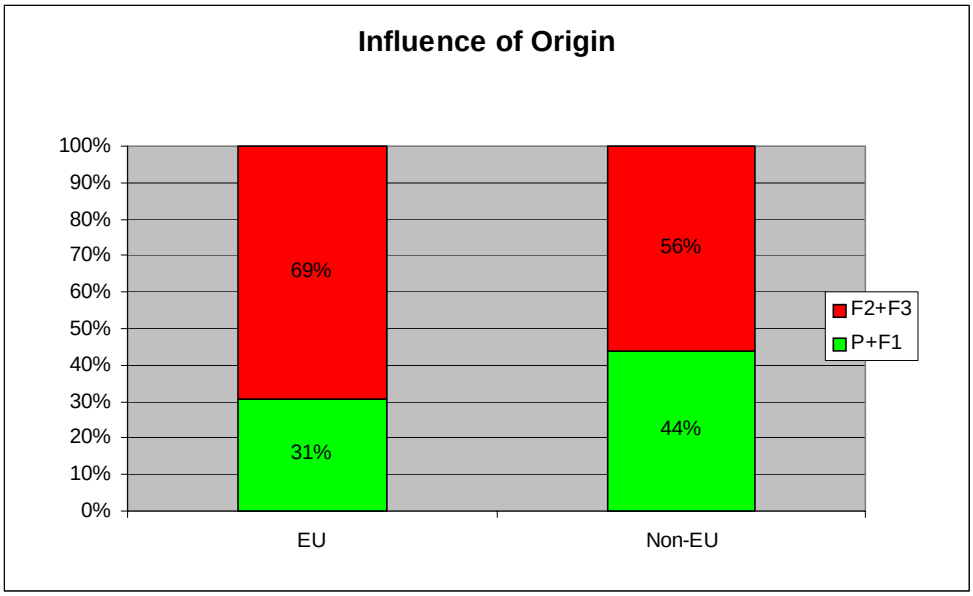

Fig. 8: Comparison of classes vs. origin

6.4 Influence of Price

Furthermore, another popular myth was proven false: the correlation between prices and shares of safe products. Although units in a moderate price range did, indeed, yield slightly better results, this trend was inverted in the next price range. Compared to the lowest price ranges of up to 4 EUR, spending twice as much only raises the chance of acquiring a safe product from about 40% to 47%. In the next price range, the rate drops again to 40%. However, total counts of safe products are low (see the numbers in the columns of Fig. 9), so that the statistical uncertainty is considerable and higher price ranges are therefore omitted.

The average price of products classified P+F1 was 4.99 EUR, the average price of products classified F2+F3 was 5.14 EUR.

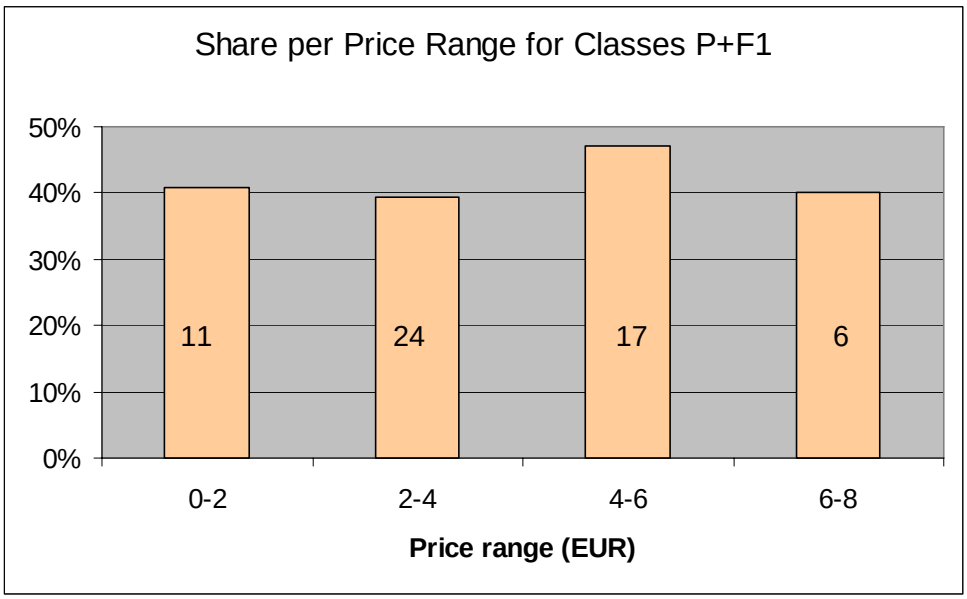

Fig. 9: Percentage of safe products per price range. Figures in columns indicate number of samples.

6.5 Inter-System Comparison

The participation of four different plug systems provided the opportunity for an inter-system comparison. It showed that the share of unsafe products for Type F (“Schuko”) and Type K (“DK”) was lower than for Type E (“FR”). Overall, Type K, which is in use only in Denmark, yielded the best results, although the statistic uncertainty of the low count of samples must be taken into account. Please note that the results for the type G system reported as "P” (pass) did not include a full assessment against all the test criteria (see results table) so that they have been excluded from the full analysis.

These test results are indicated as “pt*” – partially tested in the respective column in the following table.

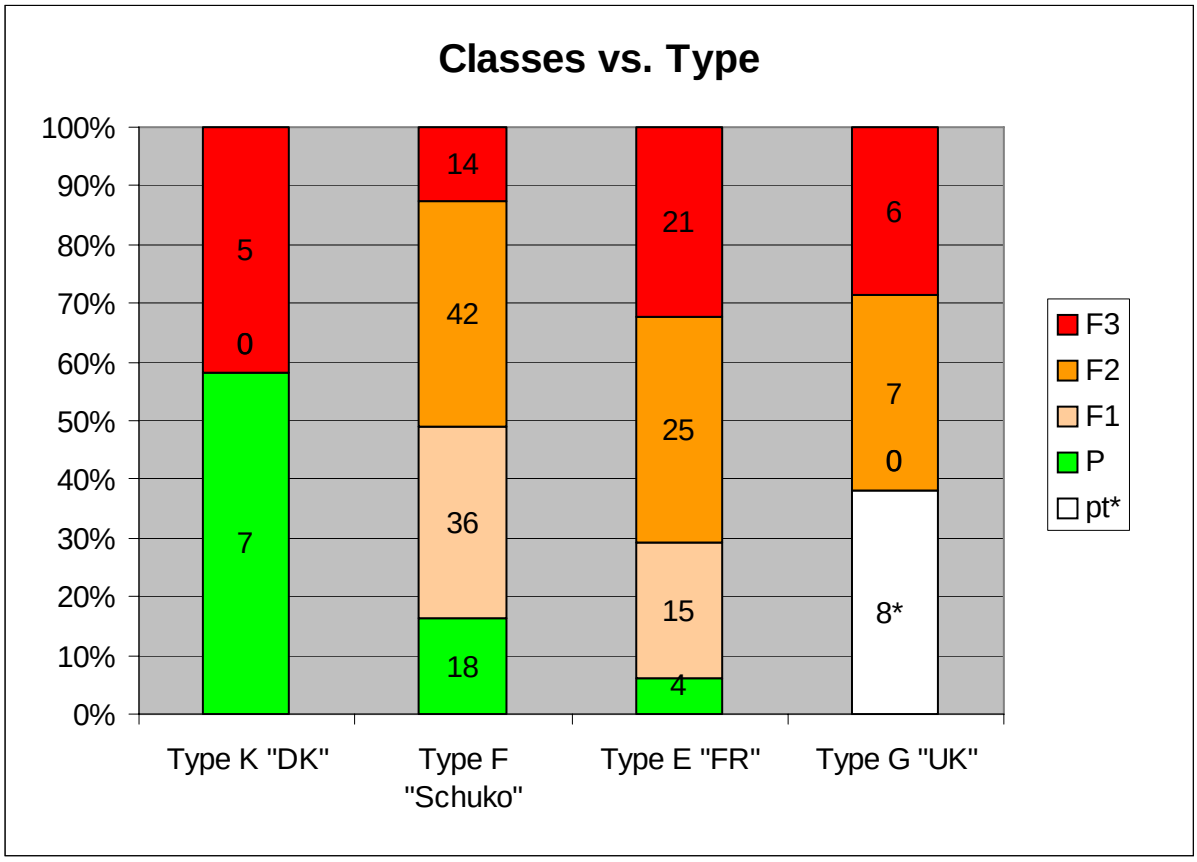

Fig. 10: Inter-systems comparison

6.6 Frequency of Shortcomings

The following table lists the identified shortcomings for products classified F2 and F3. Products usually showed multiple shortcomings. It was noted that compliance with administrative requirements was lacking in 74% and 58% of the cases, respectively. Aside from administrative requirements, the most frequent deficiencies were the wrong shape and dimensions of plugs and sockets (43%), poor construction of the cord - i.e. inadequate insulation material - (26%), and insufficient protection against electric shock (21%). On the positive side, dielectric strength and material properties (resistance to ageing, temperature, and fire) were insufficient in less than 10% of the cases.

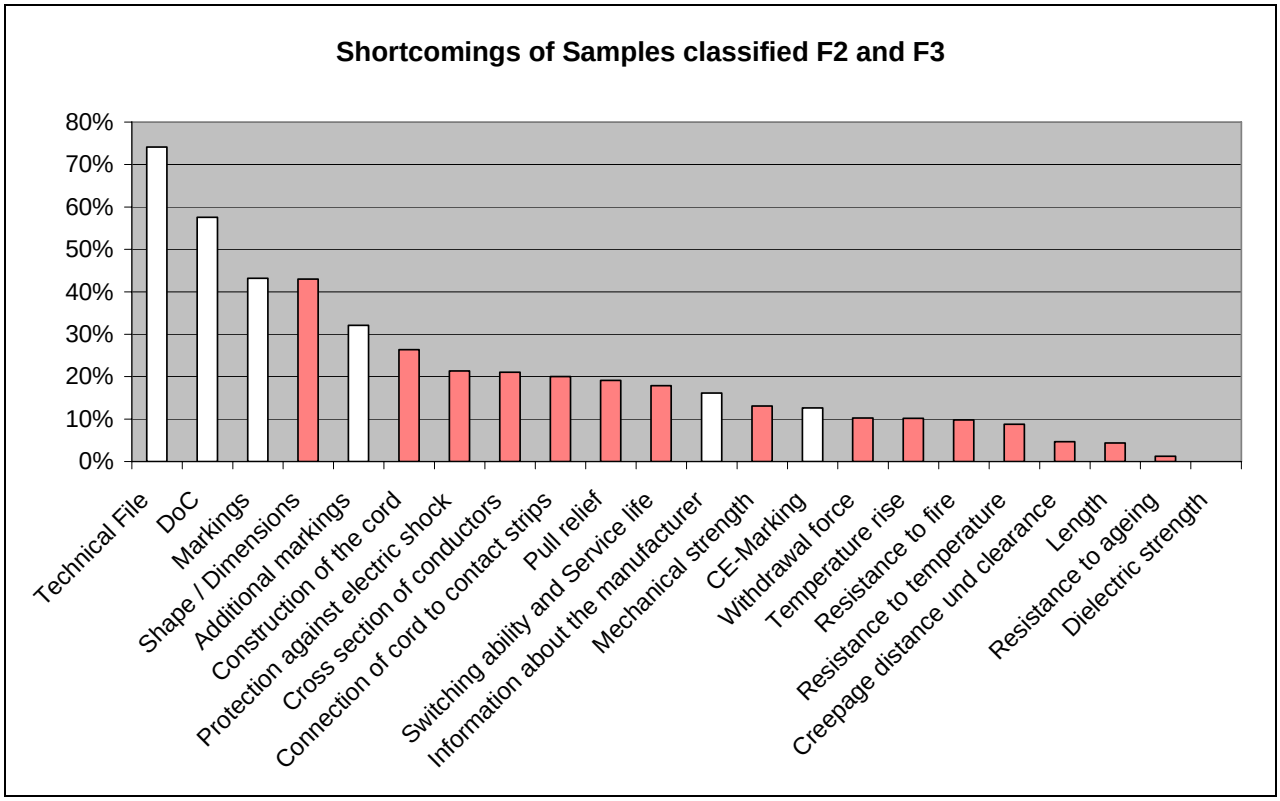

Fig. 11: Frequency of shortcomings (administrative and formal shortcomings are indicated by white columns)

6.7 Overall Result – the Verdict

The following graph shows the overall results. Only 14.5% of the cord extension sets were found to be compliant with the criteria analysed. In 60% of the cases, the products were classified as F2 or F3.

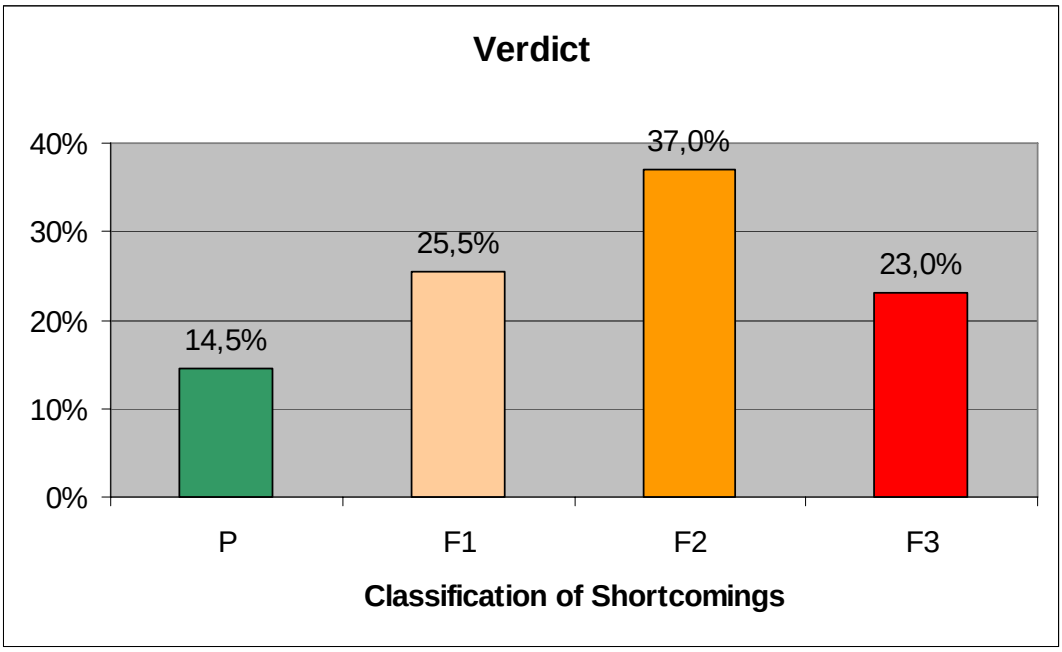

Fig. 12: Overall result

6.8 Actions Taken Most Frequently by Competent Authorities

The following diagram illustrates the actions taken most frequently by competent authorities for the classes F1, F2, and F3. In the case of minor shortcomings (F1), manufacturers/importers are usually requested to correct the situation (“letter”). Products classified F2 and F3 were in most of the cases considered unsuitable for marketing. Authorities imposed either a sales ban, or the manufacturers/importers decided to take the product voluntarily from the market. Differences of up to 100% result from products no longer on the market, or pending procedures at the closing date of the project.

Considering only products for which information on actions taken is available, about half were removed from the market.

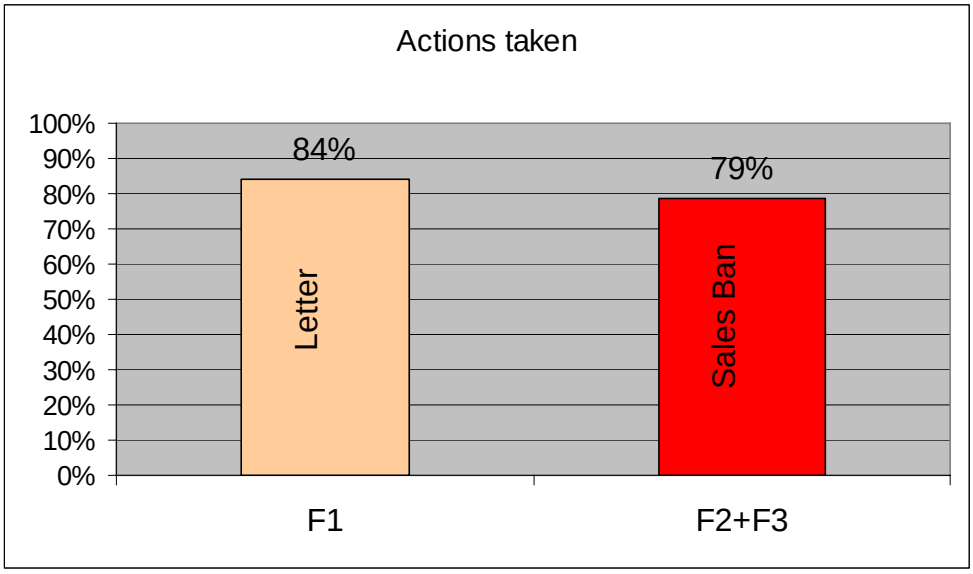

Fig. 13: Share of actions „letter to manufacturer“ and „sales ban“ by the authorities in relation to the classification F1 and F2+F3.

7 The Cord Extension Set Market in Europe

Acquisition of market data is usually not a main objective of market surveillance. Similar to the experience in previous projects, data could only be provided by a few participants including BG, DK, ES, and FI. According to this data, 40 to 90 cord extension sets are sold annually per 1,000 inhabitants. Consequently, the EU-wide market volume would be 20 to 45 Mio. pieces sold annually, resulting in a turnover of roughly 120 to 260 Mio. EUR. These figures are extrapolations from the data of only four Member States and consequently are associated with a relatively high degree of uncertainty.

8 Findings

First of all, the primary result based on the samples is that overall, only one of six cord extension sets was found to be compliant and consequently, five sixths should not have been placed on the market. Because this was the first market surveillance campaign where sampling was done with an - admittedly imperfect - randomised approach, it is the first time that an overview of the compliance of a special product on the European market has been made available. Additionally, the high participation of 20 European countries makes the result even more significant.

While the share of products found to be non-compliant also includes those which exhibit only administrative non-compliances relating e.g. to faulty declaration of conformity or missing technical documentation, another figure is even more significant: As of the editorial deadline for this report, in 45 % of the cases for which the actions of the market surveillance authorities were reported, the cord extension sets tested were considered to be insufficiently in line with the safety objectives to the extent that a sales ban was justified as a reasonable reaction to the shortcomings found.

A further finding supports the impression that the issue is not just a matter of a few exceptional cases of unfortunate circumstances, but rather a fundamental neglect to adhere to the procedures of the New Approach Directives: in 80% of the cases, manufacturers/ importers were not sufficiently familiar with the administrative requirements to draw up the documents correctly. Consequently, correct documents are not suitable as a first means of identifying safe products: the share of incorrect declarations of conformity (56% and 58%) and of incorrect technical documentation (74% for both) is the same for products classified P+F1 and classified F2+F3. Thus, more than half of the products for which correct declarations of conformity were issued, were nevertheless found unsafe.

It is doubtful whether safety is correlated with price: the rate of compliant products of about 40% is nearly independent of the price. Only the price range of 4-6 EUR scored slightly better with 47%.

The bottom line for the time being is that it is not possible to identify a set of parameters that could serve as a tool for selecting products with a higher rate of conformity to the legal provisions.

The campaign resulted in more than 20 RAPEX notifications.

9 Recommendations

9.1 Review of Standards

Although national versions of standards for the same plug system are all based on the IEC 60884-1 standard, individual countries are moving in different directions. Thus at some point, plugs and sockets from the same system can become incompatible. Even now, standard testing requirements are often supplemented by country-specific variations, rendering plugs and sockets which are perfectly acceptable in one Member State to be unsuitable in another. Increasing difficulties in regard to the free movement of goods can be foreseen.

As a consequence, a Commission mandate should initiate the elaboration of a harmonised standard consisting of different sections for the different European systems and up-to date testing requirements which address the latest developments and known deficiencies of the present procedures. Additionally, the dimensions of plugs and sockets should be included, since the CEE standards, on which these dimensions were originally based, are out of print.

As mentioned in Chapter 5.5.2, accidents need not necessarily occur even in connection with products considered unsafe, unless there is a concurrence of further faults. Actually, the number of documented accidents with cord extension sets would not lead to the same conclusion as the results of this project. There are not too many studies on accidents caused by electrical products. According to a recent study, “Electric Fire Fatalities in Finland”, over a period covering the years 2001-2006, 10% of the fatalities were attributed to “other electrical appliances”, which included all appliances besides light fittings, kitchen stoves, refrigerators, TV sets, electric heaters, coffee machines, and sauna stoves. Consequently, cord extension sets could be potentially responsible for only well below 10% of the fire fatalities. In absolute numbers, there was on average about one fatality per year in this category. The mandate should therefore also consider a scientific review of the appropriateness of the technical burdens to economic operators.

9.2 Market Surveillance

The Commission’s initiative for a “Regulation of the European Parliament and of the Council setting out the requirements for accreditation and market surveillance relating to the marketing of products” to come into force on 01.01.2010 already addresses the necessary measures to improve the level of product control, as well as to increase the efficiency of administrative co-operation.

On a product level, market surveillance agencies should continue focusing their attention on cord extension sets.

LVD ADCO recommends the following steps to be taken in response to the results of this campaign:

- LVD ADCO should take the necessary initiatives to organise cross border market surveillance campaigns regularly, at least once a year.
- LVD ADCO should play a role in stimulating small-scale co-operation between interested Member States. It should start collecting the annual activity plans of its members, make them available and encourage bi- or multilateral local co-operation.
- LVD ADCO is advised to set up a working group to investigate the possibilities for harmonising the risk classification of common shortcomings found in electrical products under the LVD.
- It is recommended that LVD ADCO should investigate the requirements that an information exchange system for cross border actions should fulfil as an input to the related activities required by the commission in the above mentioned regulation.

9.3 Involvement of Notified Bodies

Thirdly, given the fact that there is a large number of notified bodies which are perfectly up to the task of supporting manufacturers in conformity assessment, and these services are not being accepted voluntarily, their increased involvement could improve the situation. This does not necessarily mean that third party certification should be required. As a first step, the situation might benefit from involvement in checking whether or not the administrative requirements have been met, similar to the regime of the new EMC-Directive. With the new regulation mentioned above, the quality level of the accreditation bodies will be greatly harmonised, which in consequence will have the same effect on the accredited and notified bodies.

9.4 Administrative and Financial Support

Partial financing of the project undoubtedly contributed to its success. Equally important was the support of the market surveillance authorities in matters of accounting and the provision of language versions, which is in line with Community policy to support language diversity.

It must be noted that a few administrations decided not apply for community financing, due to the additional administrative load necessary for its settlement. For the future, community financing, which is generally geared towards private enterprises, needs to

take the special conditions of fiscal accounting for governmental organisations into account.

The new regulation on accreditation and market surveillance contains a comprehensive set of provisions enabling the Commission to substantially support future LVD ADCO activities. First of all, it authorises community financing for *the putting at the disposal of the Commission technical expertise for the purposes of assisting it in its implementation of market surveillance administrative cooperation, including the financing of groups of administrative cooperation…* and the *performance of preliminary or ancillary work in connection with the implementation of market surveillance activities linked to the implementation of Community legislation … as well as European market surveillance campaigns…*(Art. 28). Also*, market surveillance initiatives designed to share resources and expertise between the competent authorities of the Member States … shall be coordinated by the Commission* (Art. 23).

As an important step towards "coordinating" and "assisting in market surveillance administrative cooperation", the Commission should provide office support for administrating the financial as well as the test data of future market surveillance campaigns. The LVD community should enter negotiations with DG ENTR on this issue as soon as possible.

ANNEX 1: Market Surveillance Codes for Common Deficiencies

To assist in preparing the test report, a list of common product deficiencies is provided. This is shown in following table. Each deficiency is allocated a code from 1-3, representing its seriousness. The codes are (1) Remark, (2) Criticism and (3) Serious Criticism.
(The codes are in use in Sweden, Finland, Denmark and Norway)

Technical deficiencies	Codes		
	1	2	3
Accessible live part in normal use			3
Accessible basic insulated parts on Class II products		2	
Luminaries and domestic equipment of Class 0	1		
The creepage and clearance distance is less than 10% of the requirement in the relevant standard			3
The creepage and clearance distance is more than 10% and less than 50% of the requirement in the relevant standard		2	
The creepage and clearance distance is more than 50% of the requirement in relevant standard	1		
Cord extension set with Class 0 plug and Class 1 outlet	1		
Cord extension set with Class 1 plug and Class 0 outlet			3
Cord extension set with Class 2 plug and Class 0 or 1 outlet			3
Class 1 plug on 2-conductor cable to Class 0-device.			3
Phase and earth mixed up in earthed coupling			3
The equipment lacks thermal cut-out and/or current cut-out.		2	(3)
The rated current in the equipment is one step too high	1		
The rated current in the equipment is more than one step too high		2	
The rated current in equipment is so high that it is a fire hazard			3
The marking is incomplete or missing		2	(3)
CE-mark is missing	1	(2)	
Operation instruction is misguiding, which can cause danger		(2)	3
National language operation instructions with necessary safety information is missing		2	
The design diverges from standard or measuring blade.		2	(3)
Conductors not adequately attached		2	(3)
Risk for mechanical damage to conductor		2	(3)
Equipment with inadequate conductor(cross-section, insulation)		2	(3)
Cord anchorage is missing		2	(3)
Ip-classification does not comply with the requirements		2	(3)
The design diverges from standard or technical documentation (great risk for electric shock/fire)		2	(3)

Administrative deficiencies

Declaration of conformity is missing		2	
Errors in declaration of conformity	1		
Technical documentation is missing		2	
Errors in technical documentation	1	(2)	
Modified product sold with the same type no. etc. as product where sales ban is issued.	1		