



Electronic Communications Committee (ECC)
within the European Conference of Postal and Telecommunications Administrations (CEPT)

**MARKET SURVEILLANCE, RADIO EQUIPMENT INSPECTION,
INTERFERENCE INVESTIGATION,
SPECTRUM MONITORING AND THE ENFORCEMENT ASPECTS
OF THESE ACTIVITIES**

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0 EXECUTIVE SUMMARY

The aim of this ECC Report 15 is to provide CEPT administrations with information on the necessary enforcement aspects of market surveillance, inspection of radio equipment, interference investigation and on spectrum monitoring. This Report is an amalgamation of the old ERC Reports on Enforcement (66) and Market Surveillance (78), which were published in 1999 and 2000 respectively.

This Report also gives general guidance to colleagues in the Enforcement area when performing enforcement activities and defining the links between the ranges of enforcement options available within national practices.

All information should be considered as advisory and is not intended to be obligatory. Enforcement and inspection of radio equipment remains an integral part of National Administrations' responsibility.

This Report also gives an extensive overview of the connection between market surveillance and enforcement and the associated regulatory connections and it emphasises the possible interactions between these different activities and the way they influence other divisions of the Radio Frequency administration. Due to the implementation of the R&TTE-Directive, market surveillance, radio equipment inspection, spectrum monitoring and interference investigations are more and more connected with each other.

These activities also have common objectives since their main goal is to promote the use of spectrum as efficiently as possible by either preventive or remedial actions (to protect consumers with the view to limit non-compliant use of radio frequencies, to forbid harmful interference).

This Report is more to be regarded as a Handbook in the Enforcement field and guides CEPT administrations in searching for more information, how to proceed forward, how to act and how to react in different situations and take appropriate legal actions towards actors on the market including manufacturers, importers, distributors and equipment users.

Therefore this Report does not include any separate conclusions section, as statements made in the Report are merely collected and made on the basis of other relevant regulatory sources or on the long experience of the members involved in the drafting of the Report.

Table of contents

| | |
|---|-----------|
| 0 EXECUTIVE SUMMARY | 2 |
| 1 INTRODUCTION | 5 |
| 2 ENFORCEMENT AUTHORITIES' ACTIVITIES | 5 |
| 2.1 DEFINITIONS AND ABBREVIATIONS | 5 |
| 2.1.1 <i>Enforcement:</i> | 5 |
| 2.1.2 <i>Market Surveillance:</i> | 5 |
| 2.1.3 <i>Inspection of radio equipment:</i> | 6 |
| 2.1.4 <i>Spectrum monitoring:</i> | 6 |
| 2.1.5 <i>Interference Investigation:</i> | 6 |
| 2.1.6 <i>Abbreviations</i> | 6 |
| 3 LEGISLATION AND OBLIGATIONS..... | 6 |
| 3.1 LEGAL JUSTIFICATIONS | 6 |
| 3.2 MARKET SURVEILLANCE..... | 7 |
| 3.3 INSPECTION OF RADIO EQUIPMENT | 7 |
| 3.4 SPECTRUM MONITORING | 7 |
| 3.5 DIFFERENCES OF APPROACH BETWEEN LEGISLATION IN THE VARIOUS COUNTRIES AND IMPACT OF THE WORDING | 7 |
| 4 MARKET SURVEILLANCE..... | 8 |
| 4.1 GENERAL OVERVIEW OF NATIONAL MARKET SURVEILLANCE SITUATIONS AND NATIONAL POLICIES WITHIN THE CEPT MEMBER COUNTRIES | 8 |
| 4.2 DESCRIPTION OF PRACTICAL MARKET SURVEILLANCE ACTIVITIES | 8 |
| 4.2.1 <i>How to select targets for Market Surveillance (under the R&TTE-Directive)</i> | 8 |
| 4.2.2 <i>How to perform Market Surveillance duties</i> | 9 |
| 4.2.3 <i>How to authorise enforcement actions of field operating personnel</i> | 10 |
| 4.2.4 <i>How to issue decisions on the right to seize equipment for the purpose of testing or as evidence</i> | 10 |
| 4.2.5 <i>Formal documents</i> | 10 |
| 4.2.6 <i>How to inform shop or store staff of your legal rights to seize equipment and to perform market surveillance</i> 10 | 10 |
| 4.2.7 <i>How to select samples for control measurements</i> | 10 |
| 4.2.8 <i>Measurement programme (pre-testing, accredited testing)</i> | 11 |
| 4.2.9 <i>What degree of non-compliance will justify further action?</i> | 11 |
| 4.2.10 <i>Negotiating with the manufacturer/responsible conformity assessment body?</i> | 12 |
| 4.2.11 <i>Restrictions with regard to placing on the market/other legal action</i> | 13 |
| 4.2.12 <i>Notification to the European Commission and informing authorities of other CEPT countries</i> | 13 |
| 4.2.13 <i>Databases containing useful information for Market Surveillance work</i> | 13 |
| 4.2.14 <i>Actions to improve standards</i> | 13 |
| 4.3 DESKTOP MARKET SURVEILLANCE..... | 13 |
| 5 INSPECTION OF RADIO EQUIPMENT | 14 |
| 5.1 PURPOSE OF INSPECTION | 14 |
| 5.2 PROCEDURE OF INSPECTION | 14 |
| 5.3 LOCATION OF THE BASE STATION..... | 15 |
| 5.4 VERIFICATION OF CONFORMITY UNDER THE R&TTE-DIRECTIVE..... | 15 |
| 5.5 FREQUENCY | 15 |
| 5.6 UNWANTED EMISSIONS | 15 |
| 5.7 TRANSMITTER POWER | 15 |
| 5.8 EXTERNAL ANTENNA | 15 |
| 5.9 TYPE OF ANTENNA | 16 |
| 5.10 HEIGHT OF EXTERNAL ANTENNA..... | 16 |
| 5.11 DIRECTION OF THE MAIN LOBE..... | 16 |
| 5.12 GAIN OF THE ANTENNA | 16 |
| 5.13 MODULATION (FREQUENCY DEVIATION)..... | 16 |

5.14 ADDITIONAL FACILITIES 16

6 SPECTRUM MONITORING 16

6.1 THE SPECTRUM MONITORING PROCESS 17

6.2 INDICATORS: COMPLIANCE AND NON - COMPLIANCE 17

6.3 OPERATIONAL MANAGEMENT OF THE PROCESS 18

6.4 OUTPUT TO THE CLIENT (E.G. FREQUENCY MANAGEMENT AND ENFORCEMENT DIVISIONS)..... 18

6.5 SPECTRUM MONITORING ACTIVITIES 18

 6.5.1 *Spectrum Research*..... 18

 6.5.2 *Frequency Channel Occupation Measurements* 19

 6.5.3 *Listening Research* 19

6.6 ITU SPECTRUM MONITORING HANDBOOK 19

7 INTERFERENCE INVESTIGATION..... 19

8 OTHER RELATED MATTERS 19

8.1 TECHNICAL REFERENCES AND STANDARDS 19

 8.1.1 *Action to improve standards*..... 19

9 REFERENCES 20

ANNEX 1..... 21

Report on Desktop market surveillance and involved administrative co-operation principles 21

Market surveillance, radio equipment inspection, spectrum monitoring, interference investigation and the enforcement aspects of these activities

1 INTRODUCTION

Radio communications have become an increasingly vital part of the telecommunications infrastructure and economy of a country. Technical and administrative measures help ensure that radio services are able to operate on a non-interference basis. Therefore, a frequency management system including adequate stipulations for spectrum usage as well as a regulatory system limiting the electromagnetic radiation of equipment other than radio equipment is required.

This, however, is not sufficient to ensure an interference-free operation of (radio) communications for legitimate users of the radio frequency spectrum and any electronic equipment. In order to enforce the application of the relevant regulations and to enable appropriate correction measures against potential and occurred sources of interference a system of actions and sanctions must be established. An enforcement system includes activities such as interference investigation, market surveillance, inspection of radio equipment and spectrum monitoring as well as legislation allowing the authorities to apply appropriate sanctions against violators and unsuitable products on the market.

Market surveillance, inspection of radio stations and spectrum monitoring provide information whether the radio spectrum is used properly. An assessment of user's complaints and interference reports may provide information for action to be taken against certain products on the markets as well as information which can be used for the consideration of changes of laws and other relevant regulations.

Inspection of radio equipment, spectrum monitoring, interference investigations and market surveillance have their specific reasons and goals. Nevertheless, there is an overall objective, and due to the implementation of the R&TTE-Directive these elements have become increasingly connected with each other. Information obtained during inspection and monitoring, for instance, can form a basis for analysing the market and planning market surveillance activities.

When issuing guidance, it is necessary to have a common approach to the subject and what needs to be done in this respect. Although a common approach is desirable within the EU and the wider CEPT community, all enforcement activities such as Market Surveillance, Inspection of radio equipment, Spectrum Monitoring and Interference Investigation remain integral parts of the responsibility of National Administrations. Taking this into account, and also recognising that due to organisational, legal and other reasons the responsibility for enforcement activities is shared amongst several organisations in many countries, this Report should be regarded only as an advisory document and guidance for enforcement staff and decision makers.

2 ENFORCEMENT AUTHORITIES' ACTIVITIES

2.1 Definitions and abbreviations

For the purposes of this Report, it is necessary to define the following terms:

2.1.1 Enforcement:

“The range of actions and sanctions that can be used to enhance the compliance with national legislation and regulations for the purpose of achieving interference free communications for the legitimate users of the radio frequency spectrum

It includes taking action against occurred and potential sources of interference and unauthorised use and may include appropriate measures. Enforcement can include all types of investigation activities such as market surveillance, inspection of radio equipment, interference investigation and/or spectrum monitoring.”

2.1.2 Market Surveillance:

The control (performed after conformity assessment procedures) of radio equipment already placed, or to be placed on the European market, until the time when the user purchases the equipment.

It includes verification of regulatory requirements such as technical or administrative requirements for marking, labelling, Declaration of Conformity and other documentation, e.g. user information.

If non-compliance has been confirmed by verification such as administrative control or measurements, follow-up action will need to be put in place to have the problems discovered and corrected.

2.1.3 Inspection of radio equipment:

Carrying out on-site measurements on radio systems and checking whether or not radio equipment complies with the general/individual licence and/or permitted conditions.

2.1.4 Spectrum monitoring:

For the purpose of enforcement, spectrum monitoring can be defined as checking emissions for compliance with the general/individual licence and/or permitted conditions and supporting the resolution of interference problems.

2.1.5 Interference Investigation:

To recognize and eliminate potential source of interference based on complaints or discovered by spectrum monitoring systems.

2.1.6 Abbreviations

In the Report, some abbreviations are used referring to organisations or documents. For editorial reasons explanations are given here.

EU: European Union

CEPT: the European Conference of Postal and Telecommunications Administrations

ECC: Electronic Communications Committee

TCAM: the Telecommunication Conformity Assessment and Market Surveillance Committee composed of representatives of the Member States and chaired by a representative of the Commission and the TCAM ADCO: the Administrative Co-operation group on R&TTE.

ITU: International Telecommunication Union.

R&TTE Directive: Directive 1999/5/EC of the European Parliament and of the Council of 9 March 1999 on radio equipment and telecommunications terminal equipment and the mutual recognition of their conformity.

TCF: Technical Construction File

DoC: Declaration of Conformity

CISPR: International Special Committee on Radio Interference

ETSI: the European Telecommunications Standards Institute

EEA: European Economic Area

3 LEGISLATION AND OBLIGATIONS

3.1 Legal justifications

National or EU regulations and CEPT Decisions/Recommendations provide Member State Authorities with legal justification to organise Market Surveillance, Inspection and Spectrum Monitoring.

As the EU Constitution shall facilitate trade, the R&TTE-Directive as well as EU trade regulations have had an impact on the basic principles for Market Surveillance, Inspection and even Monitoring.

Under the R&TTE-Directive it has become difficult for Member States to stop citizens from carrying non-compliant equipment across borders with the intention to use it or to put it on the market, unless the Member States execute their obligations stated in Art.9 of the Directive.

The Directive itself does not explicitly mention the obligation to perform Market Surveillance, but some articles put an obligation on Member States, which can only be achieved by Market Surveillance (e.g. article 6.1; 6.4; 9.1; 12.3 and 14.2).

Although Market Surveillance is a national matter, Member States must notify their Market Surveillance authorities to the European Commission in accordance with the Directive, and must ensure that non-compliant equipment is not placed on

the market. A common approach and international co-operation in Europe enhances the quality of Enforcement and contribute to efficiency, as duplication of work can be avoided.

3.2 Market surveillance

As regards Market Surveillance, the New Approach Directives foresee it to be carried out and Chapter 8 in the Guide to the Implementation of Directives based on the New Approach and Global Approach, the Blue Guide, is dedicated to the principles of Market Surveillance.

This ECC Report concentrates on the specific case of Radio Equipment covered by the R&TTE-Directive. Also, to justify the initiatives to develop Market Surveillance activities *vis-à-vis* e.g. the industry, it is necessary to have a description of the activities referred to when using the term Market Surveillance.

The responsible authorities have the view that if Market Surveillance does not take place, there may be an increased use of non-compliant radio equipment (see section 4.1), and the number of interference cases would rise. The protection of manufacturers and users who act within the legal framework is also important. For this reason national legislation contains requirements, which at least authorise Market Surveillance actions. Several EU regulations like the R&TTE-Directive contain indications for such actions.

The European Commission has shown increased interest in stimulating and promoting Market Surveillance in the Member States. This is initiated by forming special subgroups such as TCAM ADCO for organising and facilitating co-operation between Member States.

This has also been done for sectors of EU regulations, which in the past only in part covered radio equipment, but which changed after the R&TTE Directive was implemented. The Guide to the Implementation of Directives based on “New Approach and Global Approach” contains in Chapter 8 a description of the principles of Market Surveillance. Co-operation with a number of enforcement authorities, for instance the Customs authorities, need to be increased in particular to be able to prevent trading by mail or internet and thereby bypassing Market Surveillance.

3.3 Inspection of radio equipment

National legislation makes provisions for the inspection authorities. The legislation concerning licensing of radio equipment in the Member States has traditionally comprised provisions for both possession and use, but since the implementation of the R&TTE-Directive licence conditions are gradually more focused on the use of radio equipment.

3.4 Spectrum monitoring

National legislation makes provisions for the use of the spectrum. Therefore there is a need to monitor the frequency usage and take appropriate measures against illegal spectrum users and other sources of interference.

3.5 Differences of approach between legislation in the various countries and impact of the wording

As mentioned above some administrations allow the possession of radio equipment the use of which may require a licence. Other administrations may require a licence for both possession and use.

The R&TTE-Directive also contains provisions (safe guards clauses) in article 9.5 to set up restrictions on having specific radio equipment on a particular national market. However, the Commission Services have concluded that application of this article in advance should be limited to cases where serious interference risks exist, that cannot be controlled in any other way. In general, Member States should first wait and see if the other safeguards built into the Directive will take care of the problem.

As a result, this Report has been carefully worded in order to cover as many situations as possible.

4 MARKET SURVEILLANCE

4.1 General overview of national market surveillance situations and national policies within the CEPT member countries

Market Surveillance for radio and telecommunications terminal equipment is typically organised by the national telecommunications regulatory authority, but in some CEPT countries these tasks for radio- and other telecommunications matters may be split between two separate organisations.

Within these organisations Market Surveillance tasks may belong to a separate Enforcement Department, but may also be carried out using a decentralised organisation that collects technical and legal expertise from different departments and uses e.g. the radio monitoring service for fieldwork. There is much variation in the amount of resources used, but also large differences in geographical size, population and amount of equipment used in different countries. These factors should be taken into account when making comparisons.

Market Surveillance activities are financed typically either through the state budget, from licensing fees or through specific fees charged for market surveillance purposes and based on the estimated value of the category of user of the equipment. In some CEPT administrations the Market Surveillance authority collects costs from the manufacturer, if non-compliance is found.

There is a difference between CEPT administrations with respect to carrying out tests of equipment. Based on statistical calculations some administrations collect several samples of each type of equipment, while others only take out one sample for testing. Some administrations also focus the testing of equipment on non-CE-marked equipment, while others immediately put a sales ban on the equipment. Naturally these different methods result in different costs.

In some countries Market Surveillance authorities have some or full EMC and/or radio testing capability, while most authorities use commercial accredited testing laboratories and may only have limited pre-testing capabilities.

Legal powers of the Market Surveillance authorities vary greatly between the CEPT administrations. These powers include access rights, the right to take samples for testing and the right to set sanctions, including charging test costs, when the equipment fails to comply with the essential requirements. These powers are not always directly available to the Market Surveillance authorities themselves but can be arranged with assistance from e.g. the police, other enforcement or customs authorities. Some of the sanctions are only available through legal action in court.

EU Member States should deal with cases following the advice given by TCAM ADCO in the report to TCAM, which was endorsed by TCAM as a Notification procedure according to article 9 of the R&TTE-Directive (which as mentioned before contains such Safeguard Clauses that enable Member States to take appropriate actions to prevent equipment from reaching the market).

Judged by the number of formal notifications to the Commission from EU Member States very few actions that require such notifications are taken against suppliers. Therefore, the Commission has asked CEPT and TCAM ADCO to initiate campaigns to encourage Member States to enhance their national Market Surveillance. The first joint one-year campaign was initiated in September 2002 to cover administrative requirements for 100 units of equipment for each participating country (Member States and other CEPT administrations). The second joint campaign was carried out in 2005 - 2006 to assess the compliance with the technical documentation and the technical requirements of the R&TTE Directive of 10 units of equipment for each participating country. Joint market surveillance campaigns will be carried out in future.

4.2 Description of practical market surveillance activities

4.2.1 How to select targets for Market Surveillance (under the R&TTE-Directive)

The products should be chosen in such a way that the use of the current resources would be optimised. Therefore the choice should focus on finding non-conformant equipment.

What are, from an enforcement point of view, the most urgent/serious and dominant market disturbance/economical problems?

Some information can be found from the work in the EMC Administrative Co-operation, although it does not specifically deal with radio frequency issues. Due to differences in national frequency allocations and other circumstances these problems may differ considerably between countries. Limited resources should concentrate on equipment groups that are known from experience to cause most interference problems. The amount of non-compliant equipment that is sold across country borders by mail or the Internet is rapidly increasing, but it is difficult to control otherwise than at the delivery point of the product to end-users. The responsibility for the entry into the market lies in this case with the person who buys the equipment, when he takes it into use. TCAM has endorsed the analysis from the Commission that equipment sold over the Internet has to comply with the Directive. It was later concluded that equipment would need to be notified to spectrum authorities of the Member States where the product was marketed.

Even for more traditional methods of placing on the market it is not enough only to visit the shops. A part of the non-compliant equipment market lies underground, and certain special products are even intended to be used mainly for illegal purposes.

Two different main categories of non-compliant equipment may be defined:

- Those units of equipment that do not fulfil some essential requirements (e.g. electrical safety, EMC or efficient use of the radio frequency spectrum to avoid harmful interference) because of bad design (this is also a failure in conformity assessment).
- Those that do not fulfil the regulatory requirements for marking, labelling and equipment documentation including User Information and Declaration of Conformity.

Member States have the obligation to ensure that action be taken against ill marked equipment. Article 12.3 of the R&TTE-directive has to be read in conjunction with article 9.1.

Another conclusion drawn within the European Community was that the name of the manufacturer (i.e. the entity taking responsibility for compliance with the Directive) needs to be put on the equipment. The following examples can be defined, where correct User Information is very important:

- The equipment is incompatible with frequency allocations in all European countries, but is placed on the market for obvious use in Europe or
- It is compatible with frequency allocations in some European countries, but incompatible with frequency allocations of some other CEPT countries.

In both examples the limitations for taking the equipment in use should be mentioned in the user manual.

Although in principle all violations have the same legal status, the limited Market Surveillance resources should be concentrated on the most serious cases of interference. The priority status of the interfered radio service should be taken into account.

- Hints from competitors (they are often the best experts) are very useful, but must be checked for correctness.
- Advertisements can be investigated.
- Information about the findings and actions of other CEPT administrations is useful. In some countries information on non-compliant equipment is published on the web pages of the administration.
- Targets could be selected in co-operation, on the basis of information from another country.

The legal basis for action under the R&TTE-Directive relevant to the examples described under the second case above is sufficient, as in principle the Directive contains the basis for restrictions on use of such equipment, its placing on the market and possession. For any restrictions on placing on the market, the conditions set out in art. 9.5 of the R&TTE-Directive shall be fulfilled. Article 9.5 is specifically written for radio equipment, and its interpretation was already explained earlier in this Report.

4.2.2 How to perform Market Surveillance duties

Proportionality

Not all sale of non-compliant radio equipment takes place knowingly or with the intention of infringing regulations. It is necessary to first check the situation, which may be easily corrected by giving information and advice. All action should be in proportion to the problem, and if the manufacturer appears to be co-operative, all unnecessary formal legal action should be avoided.

International co-operation between Member States

The legal rights of the Market Surveillance inspectors vary in different countries and cannot easily be harmonised. There may be a need for common procedures (Code of Conduct) for visiting dealers to ask for certificates, declarations of conformity, name of the manufacturer etc. The Commission has asked the organisations involved in Market Surveillance (mainly TCAM ADCO and RA1) to provide an overview of the R&TTE surveillance systems in the Community, and this ECC Report is one way to do so. Within the framework of TCAM ADCO, administrations have initiated a comparison of instructions to surveillance officers.

Involving other authorities

Depending on national legislation, Market Surveillance inspectors may need the assistance of the police or other enforcement organisations for right of access and for seizure of equipment. Therefore the local police needs to be contacted before any action in a particular area takes place, to ensure their prompt assistance, if required. When Market Surveillance activity commences in a particular country it may be helpful to have preparatory meetings with the local police or other local enforcement authorities in order to explain them the purpose of this activity and its legal basis. When the activity becomes established and the police or other authority gets familiar with this work, further meetings may not be necessary, but may still be useful for the Market Surveillance people to help them get acquainted with areas well-known to the local authorities.

Contact with media

Involving local newspapers and local radio stations in connection with local Market Surveillance campaigns may make Market Surveillance known to the general public in a positive way. It does not necessarily incur any costs, as the local media sometimes have a shortage of news material. Also it gives the opportunity to provide information in a controlled way to the general public on this issue, thereby increasing consumers' awareness of the matters.

4.2.3 How to authorise enforcement actions of field operating personnel

Sometimes retailers refuse to make available or deliver equipment for investigation without clear and understandable authorisation. It is therefore usually necessary to have authorisations in writing. Who is in charge of granting such authorisation differs from administration to administration, but in some administrations there is sufficient authorisation in force for inspection purposes, and this can be used as a model.

4.2.4 How to issue decisions on the right to seize equipment for the purpose of testing or as evidence

The easiest way to take equipment from a store is probably to buy it, but this is sometimes not possible. Another way is to seize the equipment and decide later how to compensate the owner or offer advice on how to claim compensation. In some countries the person responsible for placing non-compliant equipment on the market can also be claimed responsible for the costs incurred when testing.

In several countries an appeal may be raised against a decision to take equipment from storage or a shop for testing or investigation elsewhere. Normally one needs to have a formal decision for administrative purposes.

4.2.5 Formal documents

Documents such as templates, forms for registration of equipment or for written decisions for seizing equipment etc. should be prepared in advance to enhance the administrative quality of the work. They are necessary in case legal process takes place later and contribute to increasing the possibility of comparing decisions and cases.

4.2.6 How to inform shop or store staff of your legal rights to seize equipment and to perform market surveillance

Apart from formal written decisions it is very useful to bring information leaflets etc. when visiting shops and department stores.

4.2.7 How to select samples for control measurements

It is necessary to define how many samples are needed to eliminate single units of faulty or misaligned radio equipment and to achieve some statistical confidence. For mass-produced consumer electronics 3 to 5 samples can be considered as the minimum for any statistical analysis, but tests on only one sample can probably be used as a basis to inform the manufacturer about the problem and request more information for the Declaration of Conformity.

The samples for testing should be selected by the Market Surveillance Authority itself. When selecting samples, a possible correlation between samples of the same equipment type should be avoided by trying to select them from different production batches.

Responses to the questionnaire revealed that the legal basis for taking samples for testing varies from country to country. In some countries samples are bought by the Market Surveillance Authority, while in other countries the authorities have the power to take the samples without paying.

4.2.8 Measurement programme (pre-testing, accredited testing)

The term pre-testing as used here means any testing capability the Market Surveillance authority may have available in-house, e.g. in the Radio Monitoring Service, to perform measurements of certain radio parameters such as frequency, transmitter power and spurious emissions. Normally this does not include radiation test sites, and for legal action the use of test results from an accredited testing laboratory is the safest (but most expensive) way to avoid potential liability for damages caused by decisions on sanctions and restrictions. Also, if the manufacturer is co-operative such results are not needed; it is enough to report the results obtained with ordinary test equipment normally available to monitoring services. The possibilities of charging testing costs to the manufacturer vary with national legislation. In any case, to speed up decisions and save money, simplified pre-testing on site or in house forms the necessary filter. In preparing the test programme one way to decrease costs is to perform the tests which, based on earlier experience, are most likely to show non-compliance first and cease when the first serious non-compliance is found.

Another aspect is that the Market Surveillance Authority should check first whether the Manufacturers' Declaration of Conformity (DoC) is based on a correct harmonised standard or on some other equally acceptable technical basis. If the manufacturer has not applied the Harmonised Standards route, but in any case prepared a Technical Construction File (TCF), then any further investigation should be based on this File. The investigation should also study whether the route of compliance has been properly used. According to Annex 5 the manufacturer is permitted to deviate from the obligation of drawing up a TCF, but instead he has to produce all necessary documents stated in the Annex.

During discussions within the European Community concerning the interpretation of the R&TTE-Directive an issue was clarified concerning the liability of the signatory to a DoC. Only in exceptional cases would the signatory to a DoC be liable for wrongly signing the DoC. Generally the company would be liable.

During these discussions a compromise was also found to satisfy the requirement of the Directive that a DoC must be available to the user in a language he understands, whilst not forcing the manufacturer to have to include a copy of the original DoC. The manufacturer makes an informal statement of conformity in the equipment manual in the languages of the Community and either including the original DoC or informing the user where it can be found.

4.2.9 What degree of non-compliance will justify further action?

Due to production tolerances hardly any radio product type fulfils all the technical parameters contained in the regulations/referenced standards for all the samples taken from production, unless the manufacturer has 100% production testing. Some individual products may also be faulty, and therefore several samples are needed. In CISPR EMC standards it is required that products meet the requirements with some statistically defined confidence. In ETSI standards a shared risk approach is selected. It means that the measurement uncertainty is neither added nor subtracted from the measured value, but the measured value is directly compared with the given limit value in the standard. This also means that the test laboratories in their accreditation process have to demonstrate at least their ability to achieve the measurement uncertainty limits given in the relevant standards or to prove that they achieve even better measurement uncertainty. In order to minimise the possible correlation between test results (influence of measurement uncertainties), the various samples could be tested by different accredited test laboratories.

Another way of looking at the problem is to decide that no action shall be taken unless a certain interference or degree of harm has occurred. This may result in a large number of units of non-compliant equipment being taken into use, which have a high level of unwanted emission at a particular frequency that happens to be unused at first.

Later this frequency may be assigned to a user and complaints start to arrive. In many cases it is difficult to pinpoint the cause of interference without extensive investigations.

A step-by-step judgement guide proposing appropriate actions to be taken against non-compliance is being developed. Such method can also enhance proportionality and make it easier for administrations to carry out similar actions in similar cases.

4.2.10 Negotiating with the manufacturer/responsible conformity assessment body?

The investigation phase should start with first checking the manufacturer's DoC, which should, on the basis of Art. 6.3 of the R&TTE Directive, follow the product. The initial own test results should be compared with that and the DoC prepared by the manufacturer, if any.

The reason for discrepancies, if any, should be investigated. The R&TTE-Directive has opened the possibility to declare compliance without using the harmonised standards. In such a case, a further investigation should then concentrate on comparing own test results with those of the manufacturer and evaluate the TCF prepared by the manufacturer and the opinion of the Notified Body on it.

After the implementation of the R&TTE-Directive there is less information available to the Market Surveillance Authorities about equipment on the market, and the information collected on the basis of the previous type approval regime will gradually become obsolete. *On the basis of notifications under Art. 6.4 of the R&TTE-Directive very little information is obtained because this procedure needs to be applied only in those exceptional cases where placing on the market occurs in a country where the use is not allowed because the equipment does not comply with the national frequency usage.* The European Commission proposed that only equipment complying with the following definition of equipment needs to be notified under Article 6.4 of the Directive:

"Notification under Article 6 (4) of directive 99/5/EC is required for equipment covered by the following definition: "Radio equipment which uses frequency bands whose use is not harmonised throughout the Community. This is considered to be all radio equipment except those:

- *which do not transmit; or*
- *which can only transmit under the control of a network; or*
- *which use a frequency band which is allocated to the same radio interface in every Member State in the following way:*
 - a) *There is a common frequency allocation;*
and
 - b) *Within this allocation, the allotment and/or assignment of radio frequencies or radio frequency channels follows a common plan or arrangement;*
and
 - c) *The equipment satisfies common parameters (e.g. frequency, power, duty cycle, bandwidth, etc.).*

Notification of radio equipment which uses frequency bands whose use is not harmonised throughout the Community should be made to relevant Member States, i.e. Member States upon whose market it is intended to place the equipment but where the equipment is not complying with the national frequency use".

Although this view was supported by some Member States, other Member States did not accept the definition of the "relevant Member State" as mentioned above. This leads to a different national implementation for the scope of notifications, i.e. some administrations always require a notification when the equipment is using non-harmonised frequency bands.

Other administrations only require a notification when the equipment is not in accordance with the national radio interfaces.

However, experience has shown that manufacturers notify equipment as a matter of norm rather than as an exception, so the volume of information received by Market Surveillance authorities remains high.

Therefore the equipment data plate and the documentation accompanying it must be used to identify the manufacturer, and in relevant cases also the Notified Body concerned, both of which can then be contacted for additional information.

Negotiation with the manufacturer and the involved Conformity Assessment Body should take place before starting any formal legal action. In case there is reason to doubt the conformity of the product with the declared standards, information about the test results, which the manufacturer has used as the technical basis for his declaration, can be requested. This doubt can be based on initial pre-testing results and actual cases of interference. If the legislation leaves room for negotiated voluntary action by the manufacturer to correct the problem and the manufacturer is co-operative, it may be advisable to avoid legal action. In some countries the Market Surveillance authority is directly responsible for taking a case to court, while in other countries this is within the responsibility of the police and prosecuting authorities.

4.2.11 Restrictions with regard to placing on the market/other legal action

The results of an investigation may require decisions on actions to correct the situation. There is a common understanding or agreement within CEPT that a certain defined degree of non-compliance with the R&TTE-Directive or national regulations should lead to the conclusion that specific action would be desirable as mentioned within paragraph 4.2.9 of this Report. The set of restrictions available varies in different countries. Care should be taken that non-compliant products from the market of one country are not transported to another country. However, in the case of radio transmitters it is possible that a product variant, not compliant with the Radio Interface of one country, is compliant with that of another country.

4.2.12 Notification to the European Commission and informing authorities of other CEPT countries

There is a legal obligation in the EU regulatory area to notify the Commission (and other Member States) if restrictions for placing equipment on the market are decided upon (required by Art. 9.6 of the R&TTE-Directive). This would also be useful in the case of manufacturer's voluntary action and within the wider CEPT area. A common understanding or agreement within CEPT how and to whom information should be given would be desirable. All product specific information has to be treated as confidential and should be available only to Market Surveillance Authorities in other countries and the European Commission.

Co-operation in the sector of radio- and telecommunications terminal equipment within the EEA is ensured through the ADCO group, which makes use of electronic communications within a closed user group of surveillance authorities to exchange information. It might be desirable to extend the participation in this group to other CEPT countries, including at least those non-EEA countries that intend to implement the R&TTE-Directive.

4.2.13 Databases containing useful information for Market Surveillance work

Databases for registration of national Market Surveillance activities exist. Normally it should be necessary to register equipment that has been inspected or examined or even tested to avoid duplication of work nation-wide. If administrations would also publish on their respective web sites lists of all equipment, that in any case has been subjected to some kind of investigation, a lot of work could be avoided in other countries. Results from these investigations are not necessary, only the make and model, type number etc.

During the year 2000, the European Commission conducted a feasibility study on the needs for data exchange under the R&TTE-Directive. It was decided at TCAM that ADCO members would use a closed membership group on the Commission's "CIRCA" system as the principal means of exchanging information on enforcement actions.

4.2.14 Actions to improve standards

Some of the findings from Market Surveillance, Inspection and Monitoring could reveal shortcomings in standards that could lead to revision of these by the standardisation bodies. In this case the MoU between the ECC and ETSI could be invoked. It is not, however, a very fast process, and it may require considerable evidence of problems that have occurred. Under the R&TTE-Directive, applicants can fulfil the essential requirements of the Harmonised Standards, which have been prepared based on a mandate from the European Commission. Articles 5.2-3 and 9.4 of the R&TTE-Directive describe the procedure to initiate the process for amending a Harmonised Standard.

4.3 Desktop Market Surveillance

With increasing market globalisation there is also an increase in the number of products which are sold over the Internet and are delivered by post/express service to the customer. Potential buyers of communications equipment may find a lot of information on the Internet. A great number of advertisers display their product details on a web site. The offer of mass consumer products is large. As in the real world, vendors usually present products without information on regulatory restrictions. Especially for radio transmitters, the compliance with the requirements of the R&TTE Directive is seldom highlighted, and it is often not clear where the product can be legally used. This is especially true for cheap consumer products. Some consumers will contact the authorities in order to get this information, but most consumers are not aware of or even not interested in the potential restrictions on the use of radio transmitters in which they are interested.

A number of countries have introduced Internet market surveillance, which includes spotting Internet sites that promote the selling of radio and telecommunications terminal products. Authorities within a country can approach the responsible persons and take appropriate action if the Internet site is hosted in the country or the supplier of the goods is resident there. However, if the site is hosted outside the country the authorities can only approach those who have supplied the information, but not take any legal measures against them. This calls for European or even international co-operation.

WG RA PT RA1 has produced an extensive report on desktop market surveillance and involved administrative co-operation principles. The report is attached to this report as annex 1.

5 INSPECTION OF RADIO EQUIPMENT

It is the responsibility of each national CEPT administration to control the use of the radio spectrum. The fundamental aim is to promote the most efficient use of the radio spectrum.

Radio equipment generally must be installed and used in accordance with licence or exempt conditions. These may specify, for example, frequency assignment, transmitter power, antenna characteristics, height of the external antenna, frequency deviation and occupied bandwidth. National Authorities carry out inspections and measurements of radio stations in accordance with their own guidelines and procedures.

As detailed in paragraph 3 of ERC Report 61¹⁾ on harmonisation of licensing, the use of radio frequencies has to be carefully planned and authorised to ensure the provision of a sufficiently high standard of radio service, as it can otherwise cause interference to other users. Paragraph 8 of Report 61 defines the parameters within which equipment is to be used.

Additionally, paragraph 12 of the same document states the importance of carrying out inspections, and this Report elaborates on the need for inspections.

5.1 Purpose of inspection

The use of radio equipment continues to expand rapidly. This applies to business, telecommunication, broadcasting, amateur and leisure activities. Unauthorised use of radio equipment may cause interference to legitimate users. Safety and lives may be put at risk if for example radio equipment used by emergency services suffers from interference.

The successful running of a business can be adversely affected by radio interference. Domestic viewers and listeners can be prevented from enjoying services such as television and radio services.

The Enforcement Authority of an administration has a responsibility to ensure that harmful interference is avoided, and an inspection may draw attention to a licence discrepancy (either accidental or deliberate) before any serious interference problems arise.

A radio station inspection will also be necessary when the radio station in question is identified as being responsible for a specific complaint of interference. In summary, the inspection, whether carried out as part of the work programme of an administration, or in response to a specific interference complaint, is designed to ensure that the installation conforms to conditions for its use, and that the radio equipment operates in a manner that is not likely to cause undue interference.

Administrations may wish to consider the possibility of initiating a procedure whereby PMR system installers can register as "approved installer". The intention is to enhance the quality of installations and thus reduce the discrepancy rate.

5.2 Procedure of inspection

To carry out inspections, suitable calibrated test equipment will be used in line with the policy of national administrations. Ideally, communication service equipment is recommended, because it combines the functions of a number of test instruments in a single transportable unit. The test instruments should also be calibrated regularly.

All types of radio systems can be checked, but the inspection of radio equipment in many CEPT countries is focused on PMR networks and only carried out in cases of reported interference. For any radio system inspection a check should be made of the number of mobiles and hand-portables in a radio network available for use. Prior "off air" monitoring may sometimes provide an idea of the size of the operation and the number of mobiles or hand-portables involved.

The technical part of inspection of radio equipment should include at least:

- (a) location of the radio base station and the external antenna position;
- (b) verification of conformity;
- (c) frequency and toleration ;

¹ ERC Report 61 on harmonisation of licensing

- (d) harmonics and spurious;
- (e) transmitter power;
- (f) occupied bandwidth or frequency deviation;
- (g) type of antenna, height of the antenna, etc. depending on the type of installation.

5.3 Location of the base station

The radio base station should be confirmed as being located at the address shown on the licence. Such matters need to be resolved before proceeding with the station inspection. If a radio base station has moved a short distance, so that the coverage area is little changed, the licensee should be instructed, subject to national administration policy, to regularise the licensing position. This is preferable to the administration closing down the station.

5.4 Verification of conformity under the R&TTE-directive

Radio Equipment should be checked to ensure that it complies with the national radio interface (Art 4.1 of the R&TTE-Directive) and should be in conformity with the essential requirements. The radio equipment *should* bear a “CE” mark, including an alert symbol, in case of radio equipment using frequency bands whose use is not harmonised throughout the Community.

5.5 Frequency

The RF frequency and the occupied bandwidth of the RF frequency are the most important features of an emission. Care has to be taken that the signal being measured is not a spurious or harmonic signal from the transmitter under test, or one generated in the test equipment. When a separate frequency counter is being used, this measurement is somewhat more straightforward. Modulation on the carrier can sometimes cause errors, as can an incorrect signal level into the counter, or neglecting to allow sufficient time for warm-up.

5.6 Unwanted emissions

The spectrum analyser function of a communications service monitor gives a very useful and immediate indication of the quality of the transmitter output. Problems such as spurious frequencies, wide-band noise, instability and splatter on modulation can easily be seen. Harmonics and side-band noise can also be estimated, but as with other tests that make use of the spectrum analyser function, the dynamic range and noise content of the communications service monitor itself must be kept in mind.

5.7 Transmitter power

Transmitter power levels are normally quoted in terms of Effective Radiated Power (ERP), which is defined in ITU Radio Regulations as the product of the power supplied to the antenna and its gain in a given direction. When calculating ERP, measurements need to be taken of the carrier power at the transmitter socket – if accessible - and all subsequent losses in the system, such as attenuation in filters, isolators, combiners, and in the feeder cable need to be taken into account. This calculation can be simplified by making the power measurement at a point close to the antenna, so that any devices affecting the power level on the transmitter side of this point do not need to be included in the calculation. The antenna will need to be identified and its gain, if any, found from manufacturers’ data or by estimation.

However, there are several difficulties in practice. It may be difficult to obtain access to the transmitter or to the antenna. The coupling of power meters may be difficult due to the variety of adapters and their availability or due to high power, and sometimes there is no connection point at all.

5.8 External antenna

An inspection of a radio base station should include a check of the antenna in use, and include the following four main characteristics of interest:

- (a) Type of antenna;
- (b) Height of the antenna;
- (c) Direction of main lobe;
- (d) Gain relative to a dipole.

5.9 Type of antenna

Omni-directional antennas are by far the most common, and simple dipoles and ground-planes can easily be identified. Antennas possessing gain such as stacked dipoles and Yagi antennas (the latter having directional properties) can also be identified and assumed to have standard properties of gain and directivity, even if it is not possible to determine the exact model and manufacturer. Antennas with an unconventional construction, or those contained within a featureless fibreglass tube, can present a problem of identification. Antennas may require further investigation, if they are suspiciously long (compared to a half-wave at the frequency of operation) and a gain of unity is being claimed by the user.

5.10 Height of external antenna

A possible source of confusion in relation to the height shown on the licence is the difference between height above sea level, height of mast, and height of antennas above ground. Therefore the height of the mast or pole and the height of the building or structure to which it is attached must both be taken into account. Advantageous antenna locations are more often the cause of complaints of excessive coverage, made by co-channel sharers, than the use of excessive ERP. Power limitations should be imposed in an attempt to fight such problems.

5.11 Direction of the main lobe

The use of a directional antenna is a technique that allows a degree of control over the service area. This might be used where a base station is located at one end of the required service area. It can also relieve problems of interference in directions where coverage is not required and perhaps allow reuse of the frequency at a closer distance than would otherwise have been the case. Antennas chosen to provide such directivity are often Yagi types, but the close proximity of mast structures can give this effect to an omni-directional antenna. The direction of the main lobe can be checked by the use of a compass or by reference to known geographical features.

5.12 Gain of the antenna

In order to calculate the ERP it is necessary to know the gain of the antenna relative to a half-wave dipole.

5.13 Modulation (frequency deviation)

The frequency deviation is the maximum difference between the instantaneous frequency of the modulated radio frequency signal and the carrier frequency in the absence of the modulation. It can be measured with either communications service monitors or a separate deviation meter if available.

5.14 Additional facilities

During a radio equipment inspection a check should be made of any additional facilities in use that may not be allowed under the licence.

6 SPECTRUM MONITORING

The radio frequency spectrum is a limited natural resource, and it is essential that it is used in the most rational, equitable, efficient and economical manner by all radio communication services. Effective and efficient spectrum management is the key element for ensuring co-existence of various radio communication systems without their causing harmful interference to each other. Spectrum monitoring is one of the most essential tools of spectrum management.

Spectrum monitoring data can provide information on the actual use of frequencies, the quality of frequencies, the value of changing (inter) national frequency allocation plans and the need to do so. This aids in the evaluation and revision of various mathematical models. The frequency monitoring process runs parallel to the frequency allocation process and licensing. The purpose of frequency monitoring as part of Enforcement is to ensure optimum use of the radio spectrum and to check that the frequencies are being used lawfully.

This involves e.g. monitoring actual use, (a) to ensure that the available frequencies are used efficiently and (b) to monitor the effects of their use. The information from these activities is very important when it comes to allocating/reallocating frequencies and verifying the allocation models used.” The frequency monitoring function plays a major role: monitoring actual developments and controlling them and interpreting the results are essential parts of the policy-effect monitoring cycle.

Radio stations can be monitored off air as part of the inspection. Enforcement matters such as the use made of airtime, the use of call signs and the size of the operation can be examined, and at the same time it is possible to measure the technical parameters of the signals received.

6.1 The spectrum monitoring process

The spectrum monitoring process has to be seen as a primary activity of the national Administration and is essential to a successful frequency allocation policy.

Adequate knowledge of actual frequency usage is indispensable to policy-making and implementation. This information needs to be obtained scientifically (the “measuring is knowing” approach), so:

- spectrum monitoring data must be reliable and verifiable;
- the data must be properly analysed;
- the results must be statistically sound and verifiable.

6.2 Indicators: compliance and non - compliance

The main frequency monitor indicators are compliance and non-compliance.

The radio spectrum is a natural resource that needs to be managed carefully. Inefficient use of it inevitably results in shortage of frequencies; thus great care needs to be taken when allocating frequencies to vital Radio Services, businesses and other users. Further, it is of strategic importance to know whether the frequencies allocated are being used as efficiently as possible.

In addition to administrative and technical checks it is very important to record and identify users of the radio spectrum (radio networks, licence-holders and exemption-holders) - “measuring is knowing”, as they say.

Frequency monitoring by itself is not enough, of course; the collected data (output) needs to be analysed and processed to extract relevant information (outcome), taking the wishes of the client(s) or users into consideration. Thus the combination of frequency management and monitoring is an important tool in the policy cycle that enables the radio spectrum to be managed so that it is used more efficiently and more effectively.

At strategic level there are theoretical policy objectives that need constant appraisal in practice, providing feedback that can be used to decide whether modifications to policy are needed or rules need to be enforced. On the other hand, practical findings often call for new or revised policies.

By way of illustration, monitoring the radio spectrum makes a substantial contribution to the development of frequency allocation policy by:

- contributing to the revision and development of national frequency allocation plans;
- enabling optimum allocation procedures for frequencies to be developed;
- encouraging European and global harmonisation of frequencies;
- improving the quality of radio links;
- helping to enforce the rules and regulations;
- helping to phase out old radio systems in an organised fashion.

The first three items are of strategic importance to a national frequency allocation plan and frequency allocation table; the last two are more operational in nature.

a. Compliance

An administration uses the term 'compliance' where the results of observations are in line with the administration's objectives. If the observations are found to be constantly in line with the criteria, the amount of observation can be reduced. If the reduction produces a permanently stable level of compliance, the CEPT administration can consider its policy to be successful.

b. Non-Compliance

If the results of observations/frequency monitoring show that the facts are not in accordance with the criteria we call this 'non-compliance'. Such situations, conversely, may lead us to step up our observations to ascertain whether the non-compliance is sporadic or structural - in other words, to clarify what the problem is. The resulting observations should lead to one of the following types of action.

c. Action to rectify the situation

The non-compliance leads to corrective measures aimed at whoever is responsible for the situation or conduct that is not in accordance with the criteria. The corrective measures available e.g. under national legislation can be used for this purpose. This particularly applies to licence-holders, and Enforcement has independent responsibility for this.

d. Action to revise frequency policy

The non-compliance may lead to the policy being revised or a completely new policy being introduced. In many cases we find that non-compliance is not due to bad faith on the part of the user of the frequencies, but arises from a real need: here the best thing is to educate the user and see whether there are any alternatives, or the conclusion may be that the administration needs to revise its policy or introduce a new policy.

6.3 Operational management of the process

If the administration is to manage the monitoring process properly it should be clear what policy tools are required. Monitoring must enable us to ascertain whether there is compliance or non-compliance. It is essential to have the following policy tools at our disposal:

- Article 5 ("Frequency Allocation Table") of the Radio Regulations (ITU/RR);
- The European frequency allocation table (ECA);
- The national frequency allocation plan (if applicable);
- The national frequency allocation table;
- Frequency management;
- The national licensing database (if applicable);
- National enforcement policy.

6.4 Output to the client (e.g. Frequency Management and Enforcement divisions)

The guiding principle is that the output of the monitoring process should not be just "bare" records; instead, the data need to be refined so as to provide information relevant to policy-making. This means that the observations of actual use of the radio spectrum first need to be analysed and then supplied in the format the client requires.

In some CEPT administrations software programmes for licensing and frequency management have been set up to process monitoring information in a limited form. In the case of non-compliance that could have consequences as regards modification of policy tools, the format for information transfer needs to be agreed with e.g. the frequency division. We should also take account of the need to supply data to the international organisations (e.g. the ITU and ECC).

6.5 Spectrum monitoring activities**6.5.1 Spectrum Research**

Spectrum Research is predominantly frequency-band-related, and its aim is to provide general information on the intensity of use/availability of the frequency spectrum. This involves two aspects: (a) recording a scheduled bandwidth of the radio spectrum, and (b) analysing the observations and making reports and recommendations to the client(s).

The output is used e.g. to find gaps in the frequency spectrum that can be applied for, thus providing additional space for existing or new users:

- to protect national frequencies;
- to detect illegal broadcasts;
- to prevent cross-interference;
- to comply with monitoring requests from the ITU and from e.g. in Europe CEPT/ECC;
- to issue clean frequency certifications to the Frequency Management Division of the administration.

6.5.2 Frequency Channel Occupation Measurements

Spectrum monitoring serves as the eyes and ears of the spectrum management process. It is necessary because, in practice, the actual use may be at variance with the planned use.

The monitoring process provides a method of verification and closes the loop on the spectrum management process. For many services, such as Land Mobile and Fixed Links, the frequencies are re-used in a cell-like structure.

Occupancy measurements are necessary to enable the most efficient use of the channels where a number of separate users share a frequency. The occupancy measurements will enable an administration to determine how many other users may be able to use the same radio channel. Techniques for measuring occupancy are constantly being improved with advances in technology, but detailed discussion of the techniques can be found in the ITU Spectrum Monitoring Handbook.

Frequency Channel Occupation Measurements are channel-related; the purpose is to provide specific information on the occupancy of allocated channels. This is useful (a) to the frequency managers, because it enables them to decide how efficiently frequencies are being used, and (b) to the Licensing Department for the allocation of frequencies. This latter point will become more important, as the Licensing Division is to discontinue recording mobiles.

6.5.3 Listening Research

Listening Research is channel-related; the purpose is to provide specific information on how allocated channels are being used. This is important when it comes to studying the behaviour of users of the air waves; its purpose includes checking whether licence-holders are complying with regulations and restrictions, e.g.:

- checking whether amateur radio operators are using their transmitters for commercial purposes;
- combating misuse of aeronautical frequencies;
- checking that emergency and security channels are being used lawfully;
- checking whether the coding requirement is being observed in the marine sector.

6.6 ITU Spectrum Monitoring Handbook

More substantial and comprehensive information on the whole issue of spectrum monitoring can be found in the ITU Spectrum Monitoring Handbook.

7 INTERFERENCE INVESTIGATION

The purpose of interference investigation as a corrective measure is to deal with interference and/or misuse of frequencies. Interference cases are handled in the following order of priorities depending on the nature of the complaint or interference discovered by spectrum monitoring:

- Interference with vital communications, e.g. on emergency and security channels, results in appropriate prompt action on the part of administrations
- Interference that affects economic interests, e.g. interference with national radio networks.
- Interference that affects private interests, e.g. complaints from amateur radio operators, complaints about Short Range Devices etc.

8 OTHER RELATED MATTERS

8.1 Technical references and standards

8.1.1 Action to improve standards

Some of the findings from Market Surveillance, inspection and monitoring could reveal shortcomings in standards that could lead to revision by the standardisation bodies. In this matter the MoU between the ECC and ETSI could be invoked. It is not, however, a very fast process and may require considerable evidence of problems that have occurred. Under the R&TTE-Directive applicants can fulfil the essential requirements of the Harmonised Standards, which have been prepared based on a mandate from EC. Articles 5.2-3 and 9.4 of the Directive describe the procedure to initiate the process for amending a Harmonised Standard.

9 REFERENCES

ERC Report 61 on harmonisation of licensing;

ITU Handbook on Spectrum Monitoring;

R&TTE Directive 99/05/EC; and the extensive reference document which can be found on the official European Commission website for the R&TTE Directive

ERC Recommendations 70-03 and T/R 01-04;

Guide to the implementation of Directives based on

New Approach and Global Approach (Chapter 8)- European Commission August 1999

The Blue Guide can be found at <http://ec.europa.eu/enterprise/newapproach/legislation/guide/index.htm>

ANNEX 1

Report on Desktop market surveillance and involved administrative co-operation principles

1. Introduction

With increasing market globalisation there is also an increase in the number of products which are sold over the Internet and are delivered by post/express service to the customer.

Within the EU, the Radio & Telecommunications Terminal (R&TTE) Directive 1999/5/EC entered into force in 2000. It introduced a shorter and simpler procedure to put radio products on the EU market. The often time consuming type approval procedure has basically been replaced by a procedure whereby the manufacturers takes full responsibility and declare the products to be compliant with the requirements (declaration of conformity). After moving away from an a priori type approval scheme, effective market surveillance became even more of a key element for the authorities to assure a good functioning of the system. The R&TTE Directive makes this necessary because the ex ante product assessment (type approval) is replaced by ex post market surveillance. These surveillance activities should be strengthened and co-ordinated between Member States. In this process, electronic means should be used to the extent possible. A number of measures were suggested and are in place, but there is still room for improvement.

Meanwhile, a number of countries have now introduced Internet market surveillance, which includes spotting Internet sites that promote the selling of radio and telecommunications terminal products. There is no guarantee that these products comply with the R&TTE Directive or with the conditions for use.

Market surveillance in Europe is, in accordance with the principle of subsidiarity, carried out on a national basis. The information is mostly gathered by physical visits to manufacturers, importers, dealers and point of sales. This is a time consuming activity and can only be performed on a limited scale (spot checks).

For the near future, two distinct developments have been identified to complement the actual work methods:

- Desktop market surveillance;
- European administrative co-operation.

Within CEPT, market surveillance authorities cooperate in WGRA project team RA1 (formerly RA11) and ADCO/R&TTE. It has been recognized that in this respect combining the outcome of the surveillance across countries would be an advantage.

Both Internet market surveillance and European administrative co-ordination could complement the usual market surveillance activities thus make them more effective.

Under the Directive a manufacturer is obliged to inform the user about the intended use and limitations, if any, of the use of radio equipment. Such information obligation is especially relevant if the radio frequency spectrum is not harmonised within the Community.

The provisions of the Directive apply to products intended for or placed on the Community market, regardless of whether they are already physically placed on this Community market or not. A manufacturer or other entity offering products over the Internet intended for EU consumers is deemed to be placing these products on the EU market, and therefore he is bound by all the provisions of the Directive.

The products must be in compliance with all requirements, including compliance with the essential requirements and the obligation to provide (beforehand) the necessary information. This means that a buyer must be aware of possible restrictions on the use of the equipment (e.g. countries of use and licence conditions).

2. Desktop market surveillance

2.1 Equipment covered by R&TTE Directive

Global Internet usage has increased drastically over the last few years. In Europe the Internet has become an important source of information for many people. About 50%² of the EU population is connected to the Internet. Recognising the potential for getting access to a big market, companies of all sizes and even one man businesses and individuals have now discovered the Internet as a place to buy and sell goods.

It has been noticed that a growing number of people consider trade over the Internet as an opportunity to enhance their income by buying (small sized) electronic equipment and radio equipment at low prices and selling them at high profits via the Internet to small shops and on local markets. On several occasions authorities have had to investigate interferences which were caused by radio devices which appeared on the market in this way.

A brief Internet research showed a lot of equipment about which there was doubt whether it complied with EU regulations or not. A number of retailers were visited, and a lot of this equipment was found to be non-compliant or operating at wrong frequencies, without relevant info on the use within the EU being provided. In almost all cases these goods were bought via the Internet.

Internet trading becomes more popular as payment over the Internet and international transport gets easier and cheaper. The selling of non-compliant equipment over the Internet becomes a real problem for radio regulatory authorities in Europe. It is suggested that searching the Internet could be a good tool to filter out (many of) the offers of non-compliant radio equipment on the Internet and to provide the CEPT partners with information about these. Administrations may then decide on possible sanctions.

Potential buyers of communications equipment may find a lot of information on the Internet. A great number of advertisers display their product details on a web site. The offer of mass consumer products is large. As in the real world, vendors usually present products without information on regulatory restrictions. Especially for radio transmitters, the compliance with the requirements of the R&TTE Directive is seldom highlighted, and it is often not clear where the product can be legally used. This is especially true for cheap consumer products. Some consumers will contact the authorities in order to get this information, but most consumers are not aware of or even not interested in the potential restrictions on the use of radio transmitters in which they are interested.

2.2 Internet promotion

Authorities within a country can approach the responsible persons and take appropriate action if the Internet site is hosted in the country or the supplier of the goods is resident there. Notably the UK authorities have dealt with several incidents of promotion of illegal equipment via the Internet, followed by legal action against the offender. However, if the site is hosted outside the country the authorities can only approach those who have supplied the information, but not take any legal measures against them. This calls for European or even international co-operation.

2.3 Internet sales

The technology for secure payments now enables individuals to order via the Internet with acceptable confidence. The success of Internet sites such as eBay indicates that selling and buying products via the Internet is a serious option. For mass consumer radio products the Internet is a particular useful tool for selling and buying small items that can be shipped without extraordinary additional costs. Potential buyers are even more attracted by products which are not or not yet introduced on their local market.

2.4 Desktop market surveillance and identification of non-compliant products

The efficiency of desktop market surveillance can be improved by identifying potential non-compliant products promoted in magazines and brochures. This approach is particularly relevant for mass consumer goods that cannot be sold without being advertised locally. In case of more specialized radio products it will be more difficult and more time-consuming to perform such surveys. The search for information on paper is often limited to a certain geographical area. For mass consumer products this geographical area is usually a region, a country or even the whole of Europe.

The search for products promoted and sold over the Internet is of even greater interest since the Internet allows for cheap advertising and reaches a very large audience. Such promotion can be placed on a website hosted outside the area of

² <http://www.internetworldstats.com/stats4.htm>

European legislation with the consequence that it is difficult to take measures if necessary. Nevertheless, some successful actions have been reported.

The search for promotion of products that do not comply with the regulatory framework can be carried out using Internet based search engines. Annex 1 lists a few of these and also some meta search engines that combine the results of a number of searches.

Notably most countries Portugal, the Czech Republic, Estonia, Slovakia, the Netherlands, the UK, Switzerland, Belgium and Germany in CEPT have performed started to incorporate desktop market surveillance as part of the national authority's tasks.

A limited survey on current practices has been carried out. The most important findings were:

- Searches are performed using Internet search engines and the eBay website (an on-line marketplace) or using information obtained via complaints and checking suspicious websites. The keywords used for searching are device names or generic application designations;
- The information resulting from Internet searches are stored in different formats. Text, spreadsheet or database formats are mentioned. The data is sometimes considered confidential, some administrations have no problem to share the data with other administrations, e.g. in the same way that data is shared on the CIRCA website if administrative actions are taken against companies (R&TTE ADCO).
- Normally, a national administration would take action against offenders (provided the relevant site is hosted in the country). Often this results in the promotion of non-compliant products being taken off the website. It has been noted that the biggest problem is to judge from a description on a website whether equipment is compliant with the R&TTE requirements or not.
- A problem occurs when the site is not hosted in the country in question or in another EU country. It is difficult to trace the persons responsible for the website and even more difficult to impose sanctions.
- It has been demonstrated that authorities may educate consumers, who visit certain on-line market places, in co-operation with the owner of the site
- Sometimes the person or company (inside the EU) who sells the product act only as an intermediary. He collects orders from buyers; redirects the order to the manufacturer or vendor (outside the EU) who ships the product directly to the end buyer. The end buyer has the impression that he is buying products already placed on the European market and as a consequence he supposes that the product is in compliance with the EU regulations.

3. Administrative co-operation principles

3.1 Legal problems

The R&TTE directive imposes compliance with its requirements the moment a product is placed on the market. In the past products were placed on the market by the manufacturers selling these products in shops or through dealers. In most cases individuals did not directly buy their products from outside the EU. If they do, they also bear some responsibility. It seems that European and national legislation is not always adapted to deal with this. It may be necessary to adapt the national law to make desktop market surveillance possible and effective.

3.2 WG RA PT RA1

Within CEPT, PT RA1 has been the project team for enforcement, including market surveillance. RA1 promotes a common approach to market surveillance and aims to provide feedback to other CEPT groups regarding the market situation in Europe. This feedback focuses on the level of compliance of equipment, including user requirements for various radio services. Use of illegal equipment is also brought to the attention of relevant CEPT groups as is the level of enforcement that the authorities expect to achieve in such cases.

The enforcement activities within CEPT were investigated by PT RA1 and laid down in ECC Report 15. Registration of data related to enforcement activities is usually provided on a national basis. This registration could be extended to and shared on a European scale.

The R&TTE Directive has recently been evaluated and the results have been published in the first progress report on Directive 1999/5/EC (the R&TTE Directive) from the Commission to the Council and the European Parliament. It concluded that a more effective exchange of information between market surveillance authorities should be possible:

“The results of a survey supporting work on an RAI report on enforcement aspects of market surveillance show a wide variety of surveillance practices between the Member States. Some administrations only act on the basis of a complaint; others have structured programmes for random and routine surveillance activities. The extent of these activities would typically be limited by available budget. Effective co-operation between the various authorities to ensure an effective and uniform surveillance in the EU has not fully developed. Electronic means to exchange information has been put into place, but seem insufficiently effective³”.

3.3 The Directive 1999/5/EC (R&TTE Directive)

With the coming into force of the R&TTE Directive in the EU, Member States were invited to co-operate and to exchange information. Whereas item 30 of the Directive stipulates this as follows:

“Whereas notified bodies and surveillance authorities should exchange information on radio equipment and telecommunications terminal equipment with a view to efficient surveillance of the market; whereas such cooperation should make the utmost use of electronic means; whereas, in particular, such cooperation should enable national authorities to be informed about radio equipment placed on their market operating in frequency bands not harmonized in the Community; Whereas notified bodies and surveillance authorities should exchange information on radio equipment and telecommunications terminal equipment with a view to efficient surveillance of the market; whereas such cooperation should make the utmost use of electronic means; whereas, in particular, such cooperation should enable national authorities to be informed about radio equipment placed on their market operating in frequency bands not harmonized in the Community”

The evaluation of the R&TTE Directive covers market surveillance matters in section 14:

“The expected increase in notifications of non-compliant equipment following the reduction of pre-market controls on radio equipment has as yet not materialized. This may partly be due to the fact that most Member States are still in the process of developing market surveillance strategies. A high level of administrative non-compliance is being observed, without this leading to an increase of interference.

Many national actions are not becoming visible at EU level or to other Member States. This raises concern on the effectiveness of the current system of market surveillance, whereas it furthermore demonstrates that the formal procedures for handling safeguards are overly complex and time consuming. This calls for a review of the provisions on the handling of noncompliant equipment”.

3.4 TCAM

The R&TTE Directive called for a committee to be set up, the Telecommunication Conformity Assessment and Market Surveillance Committee (TCAM), that will assist the EC in matters related to the Directive. It is composed of representatives of the Member States and chaired by a representative of the Commission. In TCAM, Member States share their views on how the Directive should be interpreted and provide feedback on the situation in the market. TCAM has achieved pragmatic resolution of divergent interpretations of the basic text, but the Directive lacks provisions, enabling to render such interpretations legally binding.

3.5 ADCO/R&TTE

The need for co-operation between administrations to exchange best practices on handling non-compliant products is particularly important. The Group of Administrative Co-operation under the R&TTE Directive (ADCO/RTTE) was established under TCAM and deals with market surveillance issues. In 2003, a pan-European surveillance campaign focussing on compliance with the administrative provisions of the R&TTE Directive was conducted. Administrative compliance of a large number of products has been investigated. The results have been recorded in a standard template and submitted to the ADCO Internet site. ERO analyzed these data after completion of the campaign. The results of the campaign were presented to TCAM, and also the industry was informed about the findings.

3.6 Information exchange

Both ECC report 15 and the R&TTE Directive suggest international co-operation in the field of market surveillance in order to achieve efficient operations. Desktop market surveillance on the Internet implies research on a global scale.

³ first progress report Directive 1999/5/EC (the R&TTE Directive)

Therefore, the source of information is the same for every party, and the risk of duplication of work between national market surveillance authorities does exist, if information is not shared.

3.6.1 Nationwide

After an initial search for promotion of possible non-compliant radio products, a more detailed investigation may follow. The dealer of such products could be contacted or a product may be purchased in order to perform a technical examination. These proceedings should be documented. In many countries, a record is kept of all information on radio products that have been found non-compliant with the R&TTE Directive, including non-compliance with national radio interface specifications, in order to be able to co-ordinate the activities of local or regional offices.

3.6.2 Europe-wide

The results of a more detailed investigation into suspicious radio products should be shared by administrations. This has been recognised by TCAM, and an electronic storage space at the CIRCA⁴ server has been created to accommodate this information. However, up to now it has not yet developed into a useful tool since few contributions have been filed yet.

In order to effectively enable the sharing of market surveillance information, a system should fulfil the following requirements:

1. Avoid the need for language translation;
2. Be designed in such a way that only technical details would need to be submitted to the database;
3. Accept information in a simple format that would enable easy transfer of information from national databases into the system;
4. Be acceptable for most countries as a national tool, thus eliminating the need for a separate national database in the long run;
5. Enable the search for a number of carefully chosen key elements.

Some European countries have taken the initiative to set up a web site for publication and sharing of market surveillance information, the ICSMS⁵ (Information and Communication System for Market Surveillance, <http://www.icsms.org>) Using this system, set up for several areas of market surveillance, it is possible to make wide-scale market interventions wherever products of a dubious nature are concerned, and it is now finally possible for all ICSMS members to access all test results and all relevant product data in a matter of seconds. Consequently, unsafe and non-compliant products can be removed from the market immediately.

4. Conclusions

1. Desktop SMarket Surveillance is a useful tool to complement traditional market surveillance
2. Desktop market surveillance can result in efficient use of the available resources in an administration's market surveillance department. Such a development will stimulate compliance of radio products with regulations since enforcement activities can be intensified;
3. Administrative co-operation can further increase the efficiency of market surveillance activities. This implies the exchange of information combined with a workspace for international co-operation;
4. Electronic means of administrative co-operation have not been used extensively yet. This could be due to the extra effort required to provide the information.
5. Utilising electronic means of information exchange should be studied further in order to streamline the process and remove barriers for information exchange. In particular, the basic structure of a search facility should be identified in terms of standardization of keywords.
6. The legal conditions for using the information gathered and stored in the process of all types of market surveillance should therefore be studied, especially with respect to the exchange of information.

⁴ Communication & Information Resource Centre Administrator, a European Commission initiative

⁵ The market surveillance authorities of the following states are using ICSMS: Austria, Belgium, Estonia, Germany, Luxembourg, Malta, Slovenia, Sweden, Switzerland, The Netherlands and United Kingdom.

References

*ECC report (nr.15) on Enforcement
EU Directive 1995/05/EC*

Internet search machines

<http://www.yahoo.com/>
<http://highway61.com/>
<http://altavista.digital.com/>
<http://www.excite.com/>
<http://www.lycos.com/>
<http://www.ask.com/>
<http://www.zapmeta.com/>
<http://www.google.com/>
<http://www.gigablast.com/>
<http://www.a9.com/>
<http://www.alltheweb.com/>
<http://www.teoma.com/>
<http://www.hotbot.com/>

Some meta search engines

<http://www.searchengineguide.com/searchengines.html>
<http://www.myriadsearch.com/>
<http://www.metacrawler.com/>
<http://www.ixquick.com/>
<http://www.mamma.com/>
<http://www.surfwax.com/>
<http://vivisimo.com/>