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**STANDARDS-RELATED BARRIERS AND TRADE LIBERALISATION: TELECOMMUNICATIONS
SECTOR STUDY - INTERIM REPORT**

This interim paper has been prepared by the OECD Secretariat for discussion in the Trade Committee Working Party, as part of that body's ongoing work on standards-related trade barriers. It is released as a general distribution document under the responsibility of the Secretary-General, with the aim of bringing information on this subject to the attention of a wider audience and receiving comments and further information from interested parties, which could be taken into account in the further development of this paper. Any parties wishing to make comments are requested to send them in English or French to the address indicated below by June 30, 2001.

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EXECUTIVE SUMMARY

This sector specific study examines the potential costs/benefits of international harmonisation as a means of addressing standards-related trade barriers in the area of telecommunications terminal equipment. As an interim survey of the sector, this paper includes the following major items:

- **An introduction to the sector:** sectoral coverage of the study, trade trends against the background of the WTO ITA and recent changes in the regulatory environment are briefly reviewed.
- **An inventory of objectives:** possible objectives for technical regulation in this sector (quality, interoperability, provision of public goods, health, safety, environment, etc.) are listed to help understand differences in national regulation and options for overcoming problems.
- **Standards:** country practises on use of standards in technical regulation are surveyed and the costs/benefits of international harmonisation are explored with some fact-finding according to the identified regulatory objectives.
- **Conformity assessment:** country practises on conformity assessment procedures are surveyed. The various types of procedures are identified to analyse the effective tools in conformity assessment schemes (e.g. SDOC, Third Party Certification, accreditation, market surveillance and product liability schemes).

This analysis identifies three particular areas that appear to be candidates for international harmonisation: Electrical Safety, EMC and Avoidance of Radio Interference. It has found that the OECD Members covered in this study tend to use international standards in their technical regulations on **Electrical Safety and EMC; regarding Avoidance of Radio Interference**, many challenges remain in achieving international harmonisation although it is desirable to develop standards that are **technology-neutral**. With respect to the other identified regulatory objectives (**Health, Environment, Protection of public networks, Interoperability, Quality and others**), questions arise concerning the costs and benefits of international harmonisation as a means for addressing trade problems associated with standards.

The OECD Secretariat would welcome comments on this question as well as any other aspects of the paper that would be useful for enriching and deepening the analysis.

**STANDARDS-RELATED BARRIERS AND TRADE LIBERALISATION:
TELECOMMUNICATIONS SECTOR STUDY - INTERIM REPORT**

1. This document follows up an analytical review of international standardisation [TD/TC/WP(98)36/FINAL] and a study of some selected cases [TD/TC/WP(99)47/FINAL] developed by the Working Party over the last two years. This specific study particularly examines the potential costs/benefits of an approach based on international harmonisation to reduce standards-related trade barriers, focusing on telecommunications terminal equipment and including the following items:

- An introduction describing coverage of products and recent discussions on standards-related trade barriers in the sector(**Section I**);
- An inventory of possible regulatory objectives (**Section II**);
- Consideration of the role of standardisation of technical regulation in this sector and possibilities/scope for International Harmonisation (**Section III**);
- An examination of conformity assessment procedures in this sector (**Section IV**); and
- A brief summary of the analysis and request for further information and comments (**Section V**).

I. INTRODUCTION

Coverage of products

2. The study will cover telecommunications terminal equipment (TTE) and address issues of standards and conformity assessment procedures in technical regulations. The TTE covers equipment to be connected to public switched telephone networks (PSTN), but the system of connection may be wire, radio and optical or other electromagnetic means. While the term ‘Telecommunication Terminal Equipment (TTE)’ does not always include radio equipment, the study includes in its scope both radio and fixed line equipment and covers a range of products such as telephone sets, facsimile machines, switching equipment, cellular phones, cellular transmission systems and satellite network equipment.

3. It should be also noted that the PSTN does not only provide voice telephony service but also enables a wide range of digital data transmissions through the Internet and other digital networks. These characteristics of TTE, in addition to general requirements such as safety, health and environment, would raise particular regulatory needs to protect public telecommunication networks and avoid radio interference.

Relevant trade trends

4. Information technology has been making an important contribution to globalisation and economic growth.¹ An increasing element in this has been trade in office and telecom equipment, whose share in world merchandise exports has been steadily creeping upwards during the 1990s.²

5. This growth in trade as well as in global telecom networks has been accompanied by trade liberalisation. The Information Technology Agreement (ITA) was signed to address barriers to trade in IT products during the WTO Ministerial meeting in Singapore in December 1996; from the beginning it had 38 participants representing 93% of world trade in information technology products³. The agreement required signatories to eliminate tariffs on IT products by January 1, 2000, which was to save an estimated \$50 billion-\$100 billion annually by eliminating tariffs.⁴ This cost reduction would presumably bring benefits to IT industry as well as consumers and other industries using information technology and telecommunications services. As tariff barriers have been reduced through these initiatives and leading edge technologies have become central to economic growth, the reduced cost of telecommunications terminal equipment has been helping all signatories to reap the benefits of information technology. The empirical analysis shows that reduced customs duties on information technology products, with the liberalisation of telecoms services, have some correlation to the increase in the number of Internet users, and possibly facilitate E-commerce.⁵

Costs of Standard-Related Barriers

6. However, standards-related barriers have remained as impediments to trade and the global IT industry often cites the significant cost of these trade barriers, discriminatory standards and duplicative testing requirements. The WTO ITA also states that participants should meet periodically under the auspices of the Council on Trade in Goods to consult on these barriers to trade in information technology products. The cost of complying with standards and conformity assessment procedures arises from collecting information on different regulatory requirements, product redesign to conform to those requirements, fees for laboratory and certification bodies, and delays in market introduction due to registration and other conformity assessment processes.

7. Industries are particularly concerned about delays in market introduction as the speed of innovation in IT products and shortening product cycles are being accelerated. Currently, as the life cycle of the typical IT product has already been shortened to between 12 and 18 months, even a one month delay in putting a new product on the market has a significant impact. Furthermore, there are indications that delays have more serious implications for economic welfare as the use of information technology through IT products continues to be a key engine for economic growth.

¹ See DSTI/IND/STP/ICCP (2000) 1 /FINAL for the role of information technology in growth. Production is now spread out among different regions: US 27%, Japan 26%, Asia-Pacific 20%, Europe 19%. See "Global Assessment of Standards barriers to Trade in the Information Technology Industry," US ITC, 1998.

² The share of office and telecoms equipment in world merchandise exports has increased from 9% in 1990 to 13% in 1998. See Patrick Low, "International Trade in information Products," WTO Information Technology Symposium, 16 July 1999, Geneva.

³ It covers 53 members and States or separate custom territories in the process of acceding to the WTO.

⁴ See "Trade in Information Technology Products and the WTO Agreements," International Trade Centre, 1999.

⁵ See Pradip Bhatnagar, "Telecom Reforms in Developing Countries and the Outlook for Electronic Commerce," Journal of International Economic Law, 1999.

8. Against this background, barriers related to standards and conformity assessment are being focussed on in the discussion under the WTO Committee of Participants on the Expansion of Trade in Information Products, where a rich exchange of countries' experiences is being conducted.

Box 1. Importance of product lifespan

The rapid progress of technology in the terminal telecommunications equipment sector means that even a short delay can significantly cut into the potential shelf-life of a product.

– The US Industry estimates that each of the 3000 products registered every year under US FCC Part 68 experiences, on average, a four week delay in market introduction. The aggregate costs of delays, multiplied by the number of registered products, results in total costs approximating \$100 million per year. In addition, where domestic manufacturers do not have this time delay they potentially gain a competitive advantage by getting their products onto the market earlier.

– One Japanese manufacturer considered that, although the additional monetary costs of testing equipment for export were important, much more significant was the time delay from meeting the requirement of conformity assessment approvals. They estimated that product re-design took, on average, one month, plus generally about three months for the product to gain approval. In the context of a facsimile machine having a marketing life of about 18-24 months (i.e. the time before technology has developed to produce a new product), the assessment then eats into 15 per cent of sales time. They were especially concerned by this delay; they claimed that they lost out to domestic manufacturers in the importing country in terms of market share.

– One German company did not perceive any major problems with mandatory requirements for overseas markets, but found that the time taken to perform conformity assessments reduced the potential product life of their products, which could be as short as 18 months.

Source: 2000 Biennial Regulatory Review of Part 68 of the Commission's Rules and Regulations, FCC 00-400, USFCC. An Assessment of the Costs for International Trade in Meeting Regulatory Requirements, TD/TC/WP (99) 8/FINAL, OECD

II. REGULATORY OBJECTIVES

9. To analyse standards-related barriers to TTE, it is useful to list the possible regulatory objectives for technical regulation in order to consider which ones might constitute legitimate objectives for mandatory standards and conformity assessment procedures. The inventory of objectives will also be helpful for analysing different standards-related barriers in a coherent way that avoids confusion over different regulations with different objectives. Since in practice various factors may influence the determination of regulatory objectives in particular situations, it is important to be clear about the objectives in order to understand the possibilities for overcoming problems arising from differences in regulations.

Possible objectives

Quality:

10. The quality of telecommunications terminal equipment enhances consumer satisfaction and could be considered as a regulatory objective, especially when quality assurance by industry is not reliable or immature, as often in developing countries. Quality ranges from clarity of voice telephony, speed of data transmission and other user-friendly features.

Interoperability:

11. As interoperability has been one of the key objectives for standardisation in general, it is also critical for TTE telecommunications terminal equipment and could form one of the regulatory objectives. Interoperability is the ability of a TTE product to correctly function and operate with the network. For effective interoperability both the physical interface and the signalling system used by the TTE product must be compatible with the public network to which it is connected.

12. Enhancing the interoperability would allow the owner of the equipment to benefit from a larger geographical coverage and from access to more telecommunications service providers. If technical regulation ensures interoperability for a certain type of networks, it will provide greater certainty about the utility of equipment, thus benefiting consumers.

13. However, a question could arise over how to define the scope and whether it should be national, regional or global. Technical regulation could aim to achieve interoperability for all networks around the globe, or the goal could be pan-regional interoperability, which is not yet the case for all regional integration programmes.

Protection of public networks:

14. As TTE interacts with public networks and is connected to them, technical regulation should avoid any harmful effects to public infrastructures that might affect other users. The protection of public networks from harm caused by connected terminal equipment has a direct bearing on the 'Quality of Service', which is a key issue of concern for all regulatory authorities.

Avoidance of Radio interference:

15. The spectrum to be allocated for radio communication is a scarce public resource managed by regulators. TTE should be constructed so that it effectively uses the spectrum and avoids any harmful interference. This means that TTE should operate so that the characteristics of the radio waves transmitted from it shall be within the design parameters in terms of operating frequency, bandwidth, modulation, etc. However, a question could arise over how far radio interference requirements can be independent and neutral technologically with respect to spectrum allocation and technologies used for interoperability.

Safety:

16. There are two main safety concerns for TTE.

- **EMC:** Electromagnetic emissions from terminal equipment may cause interference with other electrical or electronic equipment and resulting malfunctions would risk safety in the operating environment of other equipment.
- **Electrical Safety:** most of TTE are electrical goods and should also assure that the equipment does not harm users of equipment.

Health: Exposure to RF electromagnetic fields

17. Heightened awareness of the expanding use of radio frequency (RF) has led to speculation that "electromagnetic pollution" is causing significant risks to human health. Regulations need to address two different situations in this field.⁶

- **Occupational situations** in which persons are exposed as a consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure.
- **Localised absorption** (specific absorption rate (SAR)) that applies to certain portable transmitting devices such as hand-held cellular telephones.

18. In the former case higher exposure limits can be allowed, but only applicable for persons who are exposed as a consequence of their employment (e.g., engineers, technicians and other workers). In the latter case, the aim is to protect users of handheld or other radio TTE from potential harm from intentional radiation. This particularly applies to mobile telephones, which are held in close proximity to the head and public concerns now arise over the potential harmful effects of mobile phones to human brains. It is noteworthy that occupational limits depend on the working environment conditions such as the average period of exposure and the strength of emissions, while in the case of localised absorption rates, such environment/surrounding conditions are relatively more predictable enabling the regulation to focus more on the requirements related to the product. This study will focus on localised absorption since a product requirement is considered to be more relevant for trade policy discussion.

Environment:

19. Public concerns over the environment are increasingly encouraging initiatives by governments to promote the preservation of natural resources, the reduction of energy consumption, restricted use of certain hazardous substances and the reduction of wastes from industrial products. Regulation for these objectives would cover telecommunications terminal equipment in some cases.

Other regulatory concerns:

20. Other possible regulatory objectives are personal data and privacy of the user, avoidance of fraud, access to emergency, and facilitation of use by users with a disability.

21. While these different objectives (quality, interoperability, provision of public goods, radio spectrum management, health, safety, environment, etc) would all aim to enhance social welfare, the economic costs and trade-restrictive effects of regulatory measures are influenced in different ways depending on social concerns and regulatory environments. For example, for some of these objectives, voluntary schemes or self-regulation might work more efficiently than for others. More generally the question arises what are the legitimate regulatory objectives for technical regulation, whether standards and conformity assessment procedure are required and whether international harmonisation of technical regulations would be possible or not.

⁶ In more strict terms, there is another situation in which the general public may be exposed or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or can not exercise control over their exposure. See "Questions and Answers about Biological Effects and Potential hazards of Radio-frequency Electromagnetic Fields," OET Bulletin 56, US FCC, August 1999.

III. ROLE OF STANDARDISATION AND POSSIBILITIES FOR INTERNATIONAL HARMONISATION

Changes in regulatory environment

22. Technical regulation on TTE was introduced when monopoly operators provided fixed line telecommunications services.⁷ The monopolistic operators set the standards for terminal equipment and also engaged in conformity assessment, for example, testing equipment in their own laboratories. As governments introduced competition and allowed multiple operators to provide telecommunications services, neutral regulatory authorities replaced monopolistic operators and were given responsibility over technical regulation. Regulatory control was transferred from monopolistic operators to more independent and neutral government agencies.

- **Australia:** Telecom Australia, the monopolistic operator for wire-line telecommunication service, established all standards and enforcing compliance before the Australian Telecommunication Authority, an independent regulator, began to assume responsibility over technical regulation in 1991. '
- **Hong Kong, China:** Hong Kong Telephone Company Limited, the monopolistic operator for wire-line telecommunications service, issued certification for terminal equipment before the Hong Kong Telecommunication Authority started its standards and evaluation scheme in 1995.
- **Switzerland:** Technical regulation was controlled by the Swiss Postal, Telecommunications and Telegraph Administration, the monopolistic state telecommunication service provider, before the Federal Office of Communications Postal took charge of technical regulation in 1992.

23. After these efforts at deregulation and the introduction of independent regulators in the 1990s, there was a growing awareness that the existing technical infrastructure was approaching a new phase through:

- rapid technological development and shortened product cycles for telecommunications terminal equipment;
- further de-regulation of telecommunications services under the WTO Agreement on Basic Telecommunications Services;
- blurring boundaries between services and technologies (between telecommunications, radio-communication, broadcasting, etc); and
- relatively limited government resources for management of technical issues.

24. In fact, as a consequence of de-regulation efforts in the 1990s, basic voice telephony services and digital data transmission services are now available from an array of suppliers in a myriad of styles. They could be provided not only through the PSTN, but also through radio communications (terrestrial and satellite) and cable TV networks. In parallel, increasing numbers of new types of TTE, including advanced telephones, hybrid of mobile phones and computer and modems for cable box have become available and

⁷ The following analysis draws on the national experience paper submitted to the WTO Committee of Participants on the Expansion of Trade in Information Technology Products. See G/IT/10(Swiss), G/IT/11(Hong Kong China) and G/IT/12(Australia).

certain types of new technology equipment (xDSL, TV Set Top boxes, Broadband Modems), which connects to the PSTN, may not require type approval of the network interface. Thus government regulators are now faced with a great challenge, how to cope with these rapid innovation in telecommunication services and terminal equipment, given their limited resources for management of technical issues.

Standards as technical elaboration of regulation

25. As a consequence of these changes, regulatory authorities have been increasingly co-operating with standards bodies in seeking technical solutions for regulation.

EU:

26. Technical regulation on TTE is structured under EU Directive 1999/5/EC (EU R&TTE).⁸ The EU directive sets essential requirements and the European standards bodies elaborate harmonised standards for such essential requirements.⁹ The harmonised standard provides a presumption of conformity with the essential requirements if its reference is published by the Commission. However, the directive does not have any procedure under which public authorities approve the contents of harmonised standards. On the other hand, the directive contains a clause according to which a harmonised standard can be challenged and be withdrawn if the published standards are found not to comply with essential requirements.

27. EU R&TTE distinguishes *mandatory* essential requirements from *optional* essential requirements. While Article 3.1 addresses health and safety as mandatory essential requirements, Article 3.3 treats avoidance of harmful effects to networks and interoperability as optional essential requirements and hence the European Commission does not yet intend to publish standards for Article 3.3.¹⁰ The Commission mandated standards for Article 3.2 addressing radio interference although it has not yet harmonised spectrum management for 3-G mobile phones in the European single market. The ETSI (European Telecommunications Standards Institute) is now developing harmonised standards for Article 3.2.

28. It should be also noted that EMC and electrical safety of telecommunications terminal equipment are covered by other horizontal technical regulations, such as the Low Voltage Directive and the EMC directive. The RTTE directive makes reference to these two directives to state that they apply to TTE horizontally as they apply to other equipment.

US:

29. The FCC recently adopted a similar streamlined approach for regulation on avoidance of harmful effects to public networks (PART 68) and decided to replace detailed technical criteria with simple

⁸ See Directive 1999/5/EC on radio equipment and telecommunication terminal equipment and the mutual recognition of their conformity.

⁹ The General Guidelines for co-operation between the European standards organisations and the Commission signed on 13 November 1984. It contains a series of principles and commitments concerning standardisation such as the participation of all interested parties (manufactures, consumer associations and trade unions), the role of public authorities, the quality of standards and a uniform application of standards throughout the community.

¹⁰ See "Clarification of transitional arrangements concerning harmonised standards of the current type approval regime," the European Commission, <http://europa.eu.int/comm/enterprise/rtte/clarif.htm>

principles. Only the rules' broad principles are maintained, including a proscription against causing harm to the public switched telephone network by the direct connection of terminal equipment.

30. A single committee, the Administrative Council, shall adopt, compile and publish specific technical criteria for these broad principles on TTE. Any ANSI-accredited standards organisation may submit technical criteria and the Council will certify that the submitted criteria are not duplicative and/or in conflict with any other technical criteria. Once the Administrative Council publishes such criteria, the Commission shall presume the criteria to be valid for the prevention of the harms to the public switched telephone network, subject to *ex-post* review by the FCC.

31. It should be noted that certified criteria are not published by the Commission and it would be possible for the Council to make more than one standard available as a means of compliance with the Commission's rules. The Commission also considers that conformity with the technical criteria in effect establishes a rebuttable presumption that the equipment complies with the FCC's rules. While industry will be making a private interpretation of a Commission rule, the FCC considers that any final interpretation with respect to compliance would remain with the Commission through *ex-post* review and enforcement procedures.

32. On the other hand, US regulators set their own technical requirements or incorporate voluntary standards into their own regulatory requirements by reference to other objectives (e.g. electrical safety, EMC, radio interference and human exposure to RF energy), but the FCC does not enforce any particular standards for interoperability.¹¹

Various approaches for using standards

33. For protection of public networks and interoperability, regulatory authorities both in the EU and in the US are considering the acceptance of multiple voluntary standards prevailing at the market. The reasons behind these moves are enhanced competition among telecommunication operators and the emergence of various networks supported by different technologies. There is also inability of regulatory authorities to set detailed technical requirements to keep up with the pace of faster innovation, shortening product cycles and increasing number of different types of terminal equipment. For this purpose, various approaches for using voluntary standards as a basis for regulations are identified:

- Regulators set technical requirements or make reference to standards, that is, standards are approved *ex-ante* by the regulators [US (electrical safety, EMC, radio interference and RF exposure)];
- Regulators set general requirements and designate a single council for the review and adoption of technical criteria by any accredited standards organisation (multiple voluntary standards); these standards are reviewed *ex-post* by the regulator [US(protection of public network)];
- Regulators set general requirements, they mandate a single SDO to undertake standards activities as technical elaboration of the general requirements, they review *ex post* these standards and they publish them as a privileged route for complying with the general requirements. [EU (electrical safety, EMC and radio interference)];
- Regulators only set general requirements and have no mandate to develop standards as technical elaboration of the general requirements [EU (protection of public network and interoperability)];

¹¹ For example, multiple technologies for cellular and PCs systems in the United States have fostered the national deployment of four competing terrestrial networks or network alliances. See the United States comments regarding the Green Paper on Radio Spectrum Policy presented by the European Commission.

- No regulatory requirement [US(interoperability)].

International harmonisation-possibilities and preconditions

34. According to the inventory of objectives, this section examines the need for mandatory regulation, possibilities for international harmonisation, the role to be played by international standards and some alternatives to harmonisation.

Quality:

35. As quality performance would usually be achieved through voluntary schemes, regulators may not have much interest in international harmonisation. Consumers will pay more for better quality equipment or additional features, while manufacturers' competition in the market will be preserved. However, there may be different regulations in developing countries.

Interoperability:

36. While there are no major issues of interoperability for fixed TTE, this area is rather controversial for radio equipment as interoperability could also be supported through different arrangements. It could be achieved by harmonisation of spectrum allocation with the common use of a single interface standard or, alternatively, by terminals handling multiple modes of operation and some interfaces on the side of networks. However, a question remains what is the best policy mix between the two approaches.

37. It could be also debatable how much regulatory control is necessary for interoperability. In case a consumer buys TTE, which does not inter-work with the intended network, one can always ask for a refund or another model under trade law. It would not create serious risks related to safety, health or environment and could be considered as one aspect of 'Quality' of the product.

38. Thus the network operator could be responsible by publishing sufficient interface specifications to allow a manufacturer to design a TTE.¹² Once these specifications are made transparent, regulation could leave this to the industry, which has the expertise and resources for better solutions. This approach also may encourage competition and innovation. Uncertainties always exist about which technologies would emerge through competition as the prevailing technology in the future market and regulatory control of specific interface technology might lock in technological innovation.¹³

- **EU:** Interoperability was an essential requirement in the previous directive, but there is no requirement to demonstrate inter-working with the network under the new EU R&TTE. In addition, while it endeavours to co-ordinate spectrum management and requires at least one telecom operator per Member State to provide pan-European roaming compatible with a single ETSI-backed UTRA standard, the European Commission now also ensures openness to other 3-G technologies.

¹² However, 'Quality of Equipment' should be distinguished from 'Quality of Service,' which will be an objective of the regulators.

¹³ Once interoperability becomes out of regulatory control and left to private co-ordination scheme, it will be dealt by general competition policy authority whether some private practise or standard settings impede competition as well as trade.

- **US:** Multiple technologies have fostered the national deployment of four competing networks [TDMA, GSM, CDMA and Analogue] and interoperability is achieved through terminals handling multiple modes of operation and roaming facilities for 2-G mobile phones. The US government does not intend to require any specific standards on interoperability for 3-G mobile phones either.
- **Canada:** Interoperability is not considered as a regulatory objective and the government does not require any specific standards on interoperability as in the United States.
- **Japan:** Standards on interoperability are developed as voluntary standards by private bodies and are not incorporated in technical regulation¹⁴.
- **New Zealand:** There is no specific sectoral regulation on interoperability; the emphasis is on reliance on competition law.

Protection of public networks:

39. As competition is now emerging even in local markets with new companies often using their own networks, in whole and in part, to serve local customers, further elaboration of technical requirements by non-government standard setting bodies takes place in the US and European Union. However, in other OECD members, the protection of public networks is still supported by technical requirements of government authorities.

40. While regulatory authorities generally acknowledge that the risk is low, there are still some disagreements on the significance of the risk involved in eliminating all regulation for the protection of public switched telecom networks. Some experts may claim regulation is not necessary thanks to the self-protection of modern systems, while others argue that risks of damages to the networks are increasing and there are still needs for regulation. In addition, regulatory requirements aimed at protecting public networks vary slightly among countries and some overlap exists.

- **EU:** By virtue of Article 3.3 of EU R&TTE, the Commission may decide that TTE shall be so constructed that it does not harm the network or its functioning nor misuse network resources, thereby causing an unacceptable degradation of services. The European Commission does not intend to publish standards for this requirement.
- **US:** The FCC considers that it should still continue to maintain government regulation to prevent harms to the network. However, they recently adopted more streamlined regulatory approach to replace detailed technical criteria with four broad proscriptions against harms to the PSTN and ask non-government bodies to do technical elaboration of the broad requirements:
 - Electrical hazards to telephone company personnel;
 - Damage to telephone company equipment;
 - Malfunction of telephone company billing equipment; and

¹⁴ See “Denki Tsushinkiki no Kijyun Ninsho Seido ni Kansuru Kenkyukai (Report of the Study Group on Standard and Conformance Scheme of Telecommunication Terminal Equipment), ” Ministry of Post and Telecommunication, Government of Japan, July 2000.

- Degradation of service to persons other than the users of the subject terminal equipment, their calling or called parties.
- **Japan:** Regulation imposes requirements for avoidance of harmful effects to the network, including :
 - Avoidance of damage to telecommunication circuit facilities;
 - Prevention of nuisance to other users; and
 - Demarcation of responsibility between telecommunications infrastructures facilities and terminal facilities.

41. Differences over their approaches arise from different evaluation of the risks of harmful effects. Types of harmful effects are recognised in slightly different way across countries, while requirements such as avoidance of damage to the network infrastructures and degradation of service are shared. Therefore, any international harmonisation would be also contingent on the extent to which consensus on risk evaluation and types of harmful effects emerge internationally.

Avoidance of harmful interference in radio communication systems:

42. The ITU has been working on international harmonisation of spectrum allocation to establish International Mobile Telecommunications-2000 (IMT-2000), third generation mobile systems. It will provide access, by means of one or more radio links, to a wide range of telecommunications services supported by the fixed telecommunication networks (e.g. PSTN/ISDN/IP), and to other services which are specific to mobile users. In the context of the project, the EU identified the 2500-2690 MHz band as the main candidate band for the 160 MHz for IMT 2000 on a world-wide basis and the US also identified three frequency bands 698-960 MHz, 1710-1885 MHz and 2500-2690MHz for IMT-2000. Consequently, they intend to share 2500-2690 MHz for 3-G mobile phones¹⁵.

43. IMT-2000 also covers international harmonisation of mobile technologies. While several terrestrial radio technology proposals (W-CDMA, CDMA-2000 etc.) plus satellite ones were received by the ITU, further harmonisation is ongoing to maximise commonality among them. A modular approach adopted under IMT-2000 aims to accommodate different mobile technologies under its harmonisation¹⁶.

44. While such efforts are underway internationally, it would still be a challenging task to harmonise standards on radio-interference internationally. The European Commission forwarded a mandate of standard development to ETSI. According to the spirit of EU R&TTE, the goal should be to achieve the minimum number of harmonised standards, having the widest possible product application and which are as technologically neutral as possible.

45. If such generic standards could be technologically neutral, it would expand the scope of international harmonisation by accommodating different technologies used in different parts of the world so that international standards could then focus only on the widely shared regulatory objective of radio

¹⁵ See “2000 Mid Year Report,” Transatlantic Business Dialogue, May 23,2000.

¹⁶ See “What is IMT-2000?,” ITU, http://www.itu.int/imt/what_is/imt/index.html.

interference. It would also greatly enhance market relevancy of standards since those standards should then be more immune to technological innovation and obsolescence¹⁷.

Safety: EMC and Electrical Safety

46. Safety requirements for TTE are relatively well harmonised. The IEC has well-established standards for electrical safety (IEC 950) and EMC (CISPR 22) for broad range of electrical appliances and products. Many OECD Member countries appear to have adopted these IEC standards already as a basis of technical regulation, although it is difficult to measure precisely what additions or deviations at national level actually exist in each case.

- **EU:** The EU R&TTE states that EU Directive 73/23/EEC applies to some TTE. It addresses electrical safety as one of its essential requirements. EU Directive 89/336/EEC is also applied to some TTE, addressing electromagnetic emissions and immunity against such emissions. Standards published by the European Commission as a privileged route for compliance with the directive are harmonised to IEC 950 and CISPR 22 respectively.
- **Canada:** Canada has mandatory regulations for electrical safety and EMC and these mandatory standards are harmonised to IEC 950 and CISPR 22 respectively.
- **US:** The requirements for electrical safety are based on ANSI(American National Standards Institute) standards, harmonised to IEC 950. The requirements relating to electromagnetic interference are contained in the US FCC rules. Suppliers also have the option of using CISPR 22, provided that more recent equipment meets some additional technical requirements (e.g. U.S. voltage).
- **Australia:** Technical regulation on electrical safety is supervised at the local state level, but is also co-ordinated by a national committee. The Australian/New Zealand standard A-NZS 3260 is equivalent to IEC 950. TTE must satisfy Australian/New Zealand standard 3548, which is harmonised with CISPR 22.
- **New Zealand:** Technical regulations for electrical safety and EMC are aligned with the Australia/New Zealand standard A-NZS 3260 and Australian/New Zealand standard 3548 respectively. These standards are harmonised with IEC 950 and CISPR 22.
- **Japan:** Technical regulation on electrical safety does not cover TTE. There is only a voluntary scheme for EMC.
- **Korea:** Korea has mandatory regulation for electrical safety and EMC, which is harmonised to IEC 950 and CISPR 22.

47. Standards on safety are easier to harmonise since the regulatory environment is assumed to be more similar across countries. It is easy to imagine that what is considered safe in one country should also be considered safe in another, while there might still be disagreements on the necessary precautions in risk

¹⁷ ETSI is now developing standards on radio interference scoped by frequency and/or equipment type. It shows that international harmonisation still depends partly on how much these two factors are harmonised internationally for examples , under the IMT-2000 program. ETSI adopts the same approach for radio product EMC and they are replacing previous EMC standards by a new, single, multi-part standard, which consists of common test methods and EMC parameters for groups of products.

management. In addition, other parameters such as electricity voltage would also necessitate some deviations from international standards.

48. It is also noteworthy that IEC950 and CISPR 22 are basically generic standards that are horizontally applicable across products. They specifically address regulatory concerns and do not include any other elements such as interoperability of parts. This helps keep standards from becoming obsolete since they are relatively stable and robust against any technological innovation.

Health: local absorption of RF emission (SAR)

49. While some biological effects may exist due to the absorption of RF emissions, scientific research has not yet determined whether such effects might indicate a human health hazard. However, the high public awareness of such risks has already led regulatory authorities to adopt necessary measures ranging from voluntary measures to technical regulations.

- **EU:** The EU Council recommendation on the limitation of exposure to RF is based on the guidelines from the International Commission on Non-Ionising radiation Protection (ICNIRP), an expert group connected to the WHO. The CENELEC (European Committee for Electromechanical Standardisation) is also developing a European standard for measuring SAR values of mobile phones.
- **US:** The FCC mandatory regulations on SAR, adopted in 1997, are based on the standards and recommendations of the ANSI/IEEE (The Institute of Electrical and Electronics Engineers, Inc) and NCRP (US National Council on Radiation Protection and Measurements). The limits are science-based, but not identical to those of ICNIRP.

50. While the EU member states are recommended to adopt the EU council recommendation based on the ICNIRP guidelines, they remain voluntary guidelines and some countries have not yet incorporated them into statute (e.g. U.K.). On the other hand, the ANSI/IEEE standard has been used in the FCC mandatory regulation and also in other countries. The ICNIRP guidelines are similar to the 1992 ANSI/IEEE guidelines and the NCRP recommendations, and the CENELEC and the IEEE are relatively well co-ordinated on this issue. They basically share general concept on risks and test methods, but differ slightly in exposure levels. Discussion at the World Health Organisation (WHO) has not yet advanced enough to produce established international standards.

51. As discussed for safety, it could be argued that what is considered non-harmful to human health in one country would not be considered harmful in another and hence concepts of health risks are easier to share since the regulatory environment is assumed to be more similar across countries. However, as human biological effects are scientifically more complex to analyse than safety, it would be more difficult to assess and manage biological risks. It is thus more probable for regulatory authorities to adopt the necessary precautionary measures in different ways. In this context, earlier international co-ordination and transparent exchange of information on scientific research, general concepts and test methods would be beneficial to reduce unnecessary diversity (e.g. co-ordination between the CENELEC and the IEEE).

Environment:

52. Environmental measures appear to be proliferating and may cover some TTE. While there is widespread support for environmental sustainability, there are significant divergences in specific environmental concerns, objectives and measures. The variety of public concerns is reflected in regulatory objectives such as avoidance of hazardous substances, preservation of natural resources, climate control

and effective waste management. Diverse regulatory measures are being taken to pursue these objectives, including technical regulation on products such as restriction on the use of certain materials and environmental labelling/marketing requirements, some of which are voluntary. They tend to differ in detailed technical requirements and enforcement schemes.

53. The complexity of technical regulation in the field is the result of a few factors. First, the concept of environment is rather broad and encompasses many sub-categories of objectives (avoidance of hazardous substances, energy efficiency, climate control and effective waste management) and these objectives sometimes overlap with each other. For example, standards for recycling-friendly products would aim at several objectives: waste management, preservation of natural resources, climate control, avoidance of hazardous substances. Secondly, for each subcategory of objective, specific target levels of achievement could vary depending on the countries' public concerns and democratic goals. For example, while one country may target a 20% reduction in electricity consumption, it would be also legitimate for another country to target a 30% cut, which seems to suggest that the safety risk could be assessed in a relatively more objective way than the target of energy efficiency. Thirdly, as in the case of health assessments, assessment of effects on the environment is more complex and produces different results to a greater extent than for safety. These complexities raise the need to develop different regulatory techniques, which might focus on harmonisation of environment impact assessment methodologies or other more procedural requirements for the design of products rather than on harmonisation of specific targets and levels.

Equivalency of standards

54. In cases in which international harmonisation has not yet been achieved, some countries choose to align their national standards with foreign standards when they find them equivalent and acceptable. While the degree of alignment would be different and could range from direct reference to foreign standards to using them as a basis for domestic technical regulation, this practice would to some extent facilitate trade where there are no well-established international standards available.

55. As standards used in Europe and the US are influential in the TTE sector, some countries naturally refer to the US or EU standards in their regulations. This equivalency approach would help reduce technical barriers for exporters in those countries. If two countries bilaterally and mutually align their standards, as in the US and Canada, these practices could be beneficial for the suppliers in both countries.¹⁸ In other cases, it should be noted that the suppliers in home markets would not have the same benefits since they still must comply with different foreign standards for export (See Table 1).

¹⁸ The regulations of Canada and US are similar but not identical. At present a harmonisation program is in progress but not complete. Until this process is completed, manufacturers and importers must submit for both approvals independently. The finalisation of the harmonisation agreement will not eliminate the requirement for certification.

Table 1. Alignment with foreign standards

Country	Protection of Public Network	Radio Interference
Hong Kong	ETSI,USFCC	ETSI, USFCC
Israel	USFCC, ETSI	ETSI
Canada	USFCC	USFCC
USA	Industry Canada Specifications and standards	Industry Canada Specifications and standards
El Salvador	USFCC, ETSI	USFCC, ETSI
Costa Rica	USFCC	USFCC

IV. CONFORMITY ASSESSMENT

56. The trade restrictiveness of standards-related barriers is affected not only by technical regulations and standards, but also by the nature of conformity assessment procedures. The conformity assessment procedure of TTE has been the type-approval system, and it can be basically summarised as follows:

- The applicant submits a formal application for type-approval to the regulatory authority. The regulatory authority would arrange for the product to be assessed against relevant technical standards.
- The regulatory authority would review the test result and, if satisfied, grant an approval. In essence, the granting of type-approval means that a manufacturer is granted permission to place products of that type on the market in the country in which the approval is granted, provided that the manufactured products are of identical specification to the sample.
- In order to ensure that the manufactured products are of the same specification as that of the tested sample, certain countries incorporate the manufacturer's quality control system in the type-approval process or a process of random product checks or both.

57. It is often claimed that the type approval system has a number of disadvantages. The principal ones can be summarised as follows:

- The same piece of TTE may be tested and certified once for each country in which it will be sold, necessitating much repetition.
- The process can be expensive and time consuming. The cost of approval fees is usually reflected in the product price and the delay caused by the approval process may result in customers not receiving innovative products in a timely manner and at affordable prices.
- Given that the national regulatory authority grants the approval, it can be argued that the regulatory authority might incur some form of liability in the event that the product is later found to be non-compliant. However, in principle the regulatory authorities take no responsibility for liability and no cases have yet been reported whereby the regulatory authority has been taken to court due to incorrectly certified products¹⁹.

¹⁹ On the other hand, private certification bodies carry liability insurance and the EU R&TTE states that the notified body must take out liability insurance unless its liability is assumed by the Member States.

58. Responding to these arguments, the regulatory authorities in OECD Member countries are already accepting test reports from designated (or accredited) laboratories or certification bodies, a process which would prove faster than the testing conducted directly by regulatory authorities themselves. In a further effort to move towards de-regulation, they are also allowing designated certification bodies to grant approval without the involvement of regulatory authorities, or are adopting the suppliers' declaration of conformity (SDOC) in their conformity assessment scheme.

- **European Union:**

Electrical safety- The EU Directive 73/23/EEC referenced in the EU R&TTE sets up a procedure by which the suppliers ensure and declare conformity. Before a product is placed on the market the manufacturer puts together the technical documentation which makes it possible to assess whether the electrical equipment complies with the requirements of the Directive²⁰. The CE marking is affixed to the equipment by the suppliers (as with all EU directives).

EMC-The EU Directive 89/336/EEC in the EU R&TTE sets up a procedure by which suppliers can declare conformity to the directive without type approval or other third party certification, should they decide to comply with the published harmonised standards. In other cases, they should declare conformity with a technical file bringing the evidence of product safety, which must include a certificate or report by a third party recognised as competent by the Commission.

Radio-interference-If suppliers decide to comply with the published harmonised standards, they can declare conformity to the directive independently, without mandatory third party certification. In other cases, they should declare conformity to a technical file bringing the evidence of product safety, which must include a certificate or report by a third party recognised as competent by the Commission.

- **Canada:**

Electrical safety-Regulatory authorities require that recognised certification bodies must certify equipment. Regulatory authorities in most cases recognise certification bodies accredited by the Standards Council of Canada.

EMC- Products can be placed on the market under the supplier's declaration of conformity. Regulation requires that a copy of the test report be maintained on file by the supplier, but there are no restrictions on laboratories as long as the specified test methodology is followed. It is the responsibility of the manufacturer to ensure the validity of the tests. The notice indicating compliance must be in the form of a label that is affixed to the equipment.

Protection of public network- Certification is performed by Industry Canada, but laboratories including manufacturer's labs approved by Industry Canada can carry out testing.

Radio interference-Industry Canada performs certification, but laboratories recognised by Industry Canada can also carry out testing, and those reports can be submitted to the regulatory authority.

²⁰ Annex IV of the "Low Voltage" Directive states that the manufacturer must take all measures necessary in order that the manufacturing process ensures compliance of the products with the technical documentation and the requirements of the Directive. See Guidelines on the application of Directive 73/23/EEC, the European Commission, http://europa.eu.int/comm/enterprise/electr_equipment/lv/guides/chap5.htm

- **US:**

Electrical safety-The Occupational Safety and Health Administration (OSHA) requires that an employer provide certain equipment for its employees that is tested and certified by laboratories recognised by OSHA.

EMC- Suppliers can declare conformity by having equipment performance measured to determine compliance with the standards. For high-risk products, the party performing such measurements should be accredited by the National Institute of Standards Technology (NIST) or the American Association for Laboratory Accreditation (A2LA).

Radio interference- Demonstration of conformity is made through certification by the FCC or by a certification body designated by the FCC.

Protection of public network- The FCC recently concluded that suppliers can declare conformity and the declaration should include a conformity statement and referenced standards, but does not require a test report by an accredited laboratory. They also require the supplier to send a copy of the statement to the Administrative Council to ensure that consumers and telecommunications service providers can obtain a copy of the statement.

- **Australia:**

Protection of public network, EMC, radio-interference, electrical safety-TTE has three levels of compliance, based on the risk of interference that may be expected from the product. For low-risk products, self-declaration of conformity is allowed. For medium risk products the supplier must have obtained enough technical documentation to show compliance, such as a test report, written statement by a certification body, an overseas type approval, or electrical safety certificates from an Electrical Safety Authority. High Level Risk products must in addition to the above obtain the test reports from the testing authorities recognised by the ACA.²¹ For all risk levels, the suppliers must affix the compliance mark (A-Tick mark) together with supplier identification on their products. Registration with the ACA is necessary for the right to use the A-Tick mark.

- **New Zealand:**

EMC-A declaration of conformity must be submitted to the regulatory authority based on test reports and preference is given to the use of an accredited laboratory. Alternatively suppliers can register with regulatory authorities for labelling²².

Electrical safety-Recently adopted legislation will implement a new regulatory regime under which suppliers can put a product, other than declared ones, on the market with no requirement for prior approval by the regulatory authorities or accredited agencies.²³

²¹ See "Telecommunications Regulatory Arrangements," Australian Communications Authority, December 1999.

²² See "DP10: A Trans-Tasman Compliance Framework for Electromagnetic Compatibility (EMC)," Ministry of Commerce, NZ.

²³ See "Safety obligations: Electrical appliances and fittings," Ministry of Commerce, NZ.

- **Japan:**

Electrical safety-Technical regulation on electrical safety does not cover TTE.

Radio-interference-TTE is subject to domestic technical standards and certification of conformity is granted by certification bodies designated by the regulatory authority.²⁴

Protection of public network-TTE is subject to domestic technical standards and certification of conformity is granted by certification bodies designated by the regulatory authority.

- **Korea:**

Protection of public networks, electrical safety, EMC, and radio-interference-The Radio Research Laboratory (RRL) under the supervision of the Ministry of Information and Communication and testing laboratories authorised by RRL perform the testing procedures, which cover protection of public networks, EMC, radio interference and electrical safety. The RRL issues a certificate after reviewing the test report provided by authorised laboratories.

Inventory of country practices

59. While conformity assessment procedures vary among countries, the following common types are identified in country case studies.

- **<SDOC-I >** SDOC without any additional obligation [Australia(low risk),US(EMC-low risk)]²⁵;
- **<SDOC-II>** SDOC with obligation to keep technical documentation [EU (electrical safety, EMC), US (Protection of public network), Australia (medium risk), Canada(EMC), NZ(Electrical Safety-low risk, EMC)];
- **<SDOC-III>** SDOC with obligation to keep technical documentation by laboratories designated by the regulatory authorities(or any laboratories accredited by the accreditation body appointed by the regulatory authorities)²⁶ [Australia(high risk), US(EMC-high risk)];
- **<Third Party Certification I >**Certification by a certification body designated by the regulatory authorities(or any certification body accredited by the accreditation body appointed by the regulatory authorities) without involvement of the regulatory authorities [US(radio interference, electrical safety), Japan(radio interference, protection of public network), Canada(electrical safety), NZ(Electrical Safety-high risk)];
- **<Third Party Certification II>** Certification by the regulatory authorities with the submission of technical documentation by laboratories designated by the regulatory authorities [Canada(radio interference, protection of public network)].

²⁴ In Japan designated certification bodies (JATE, TELEC) accept test reports from inspectors attested by the regulatory authority, which may include a third party or a supplier's laboratory.

²⁵ The supplier includes by definition manufacturers and their authorised representatives such as importers, distributors and sales agents.

²⁶ An inter-laboratory arrangement like IEC-CB scheme could play the role of accreditation in this context.

SDOC, Market surveillance and Product liability

60. Trade policy discussions to date have already recognised that SDOC would be a less onerous approach for the assurance of conformity; however, they also note that it needs an appropriate framework such as market surveillance and product liability laws²⁷. In fact countries adopting SDOC normally also introduce market surveillance and product liability regimes as appropriate safeguards against the non-compliance of dangerous products.

61. SDOC normally requires a formalised statement by the supplier that he complies with technical regulations or standards in order to hold the supplier legally responsible for compliance²⁸. For effective surveillance by regulatory authorities and the provision of information to consumers, it would also usually require some labelling /marking demonstrating compliance, or alternatively the submission or registration of such statements to regulatory authorities or other organisations designated to manage the appropriate database.

62. The country practises show that SDOC does not usually exist without additional obligations being enforced, except in case of very low risk products (Australia-low risk and US-EMC low risk). Suppliers in most cases are legally required or recommended to keep technical documentation to show compliance. In case of market surveillance by the regulatory authorities or a product liability suit, a report drawn up by laboratories designated by regulatory authorities (or accredited laboratories) could often represent an element of proof²⁹.

63. Thus, anticipating these challenges, suppliers may wish to ask in advance for a report to be drawn up by these bodies (even where such a report is not obligatory) and to keep it together with the technical documentation. The availability of such a report would make matters easier in the event of these challenges. This consideration could induce suppliers to adopt “SDOC III” as a voluntary measure even under “SDOC II” regime, unless they are confident in their ability to defend themselves against any charges.

64. While SDOC relies on market surveillance for the effective enforcement of technical regulation, it can be noted that certification by regulatory authorities or designated certification bodies also requires ex post surveillance or auditing. No certification scheme is able to verify all products and such scheme to some extent also rely on suppliers' responsibilities or quality assurances.

SDOC and Third Party Certification

65. As regulatory authorities perceive higher risks, the obligations relating to SDOC normally increase, e.g. from SDOC I to SDOC III, to enhance regulatory confidence. In this regard, the question can be raised particularly as to how much confidence would be lost by de-regulating the regulatory scheme from “Third Party Certification I” to “SDOC III”. In both cases suppliers are unable to put their products on the market unless inspected by designated or accredited third party bodies; however, the regulatory authorities are not directly involved in the process and do not review the technical documentation provided by the suppliers.

²⁷ See 2000.WTO/G/TBT/9, Second Triennial Review of the Operation and Implementation of the Agreement of Technical Barriers to Trade, the WTO TBT Committee.

²⁸ One exception is “verification” used in Part 15 of the US FCC rule (EMC-low risk), which does not require a formalised declaration of compliance by the suppliers.

²⁹ See, for example, V. CONFORMITY ASSESSMENT PROCEDURES UNDER THE "LOW VOLTAGE" DIRECTIVE, Guidelines on the application of Directive 73/23/EEC, the European Commission.

66. On the other hand, it should also be noted that “Third Party Certification I”, which in many cases is adopted for high-risk cases, has some advantage over “Third Party Certification II” or other certification schemes directly operated by regulatory authorities. The latter two approaches would require some government resources and would also delay the process for suppliers. In addition, a particular problem would arise if regulatory authorities engage in a Mutual Recognition Agreement (MRA) with other countries, since this would prevent foreign certification bodies from granting approval in foreign countries. This would be one of the reasons why “Third Party Certification I” has recently been adopted in most countries, rather than “Third Party Certification II”, and the regulatory authorities monitor the technical competence and compliance of certification bodies during the implementation of the MRA.

Mutual Recognition

67. The EU has already concluded four MRA agreements on TTE and is now moving into the implementation phase through the designation of conformity assessment bodies. The APEC MRA on both TTE and Electrical and Electronic Equipment has already been concluded, although it works as a model, not as a legally binding agreement.

68. It should be noted that MRAs are not necessary and do not contribute to the reduction of technical barriers if both parties adopt SDOC. However, as various types of SDOC are used in conformity assessment procedures, MRAs might be helpful in certain cases (e.g. SDOC-III) to assure the portability of obligatory technical files across national borders.

- **EU-US, NZ, Australia, Canada:** The annex of an agreement for telecommunication equipment covers technical regulations on the protection of public telecommunications networks and radio interference. Electrical safety and EMC are within the scope of other annexes, which cover other products horizontally. These agreements ensure that each party accepts the results of conformity assessment procedures performed by the other and that certificates of conformity delivered by the designated conformity assessment bodies of each party are recognised by the authorities of the other party without any further assessment of the products.
- **EU-Central or Eastern European Countries:** The European Commission recently proposed a draft Protocol to the Europe Agreement, establishing an Association with the Czech Republic and Hungary on Conformity Assessment and Acceptance of Industrial Products (PECA) for approval by the European Council. The PECA provides two mechanisms: a) the mutual acceptance of industrial products which fulfil the regulatory requirements of one of the parties and b) the mutual recognition of the results of conformity assessment of industrial products subject to Community law and to the equivalent national law. The protocols include Electrical Safety and Electromagnetic Compatibility, which are relevant to TTE, but do not have a telecommunication equipment annex, which usually covers technical regulations on protection of public telecommunication networks and radio interference. However, most of Central or Eastern European countries are now planning to implement EU R&TTE to align their regulatory system with the European Union, which would further promote use of international standards in technical regulations for electrical safety and EMC. (See Table 2)
- **APEC:** The APEC Mutual Recognition Arrangement for Conformity Assessment of Telecommunications Equipment was concluded in July 1998. It covers electrical safety and EMC requirements on TTE. The agreement is flexible in that it allows signatories to have flexibility on whether regulators use accreditation to designate laboratories or CABs or directly designate those bodies. It also lays out progressive steps, in which signatories start with mutual acceptance and could move to the mutual acceptance of equipment certification by gradually building confidence among CABs in different countries. The APEC countries also started the TEL MRA Implementation Project,

which aims to encourage voluntary actions among APEC economies toward the implementation of the MRA, by identifying in each economy administrative, legal, industrial and commercial barriers.

- **Australia-New Zealand:** The example of co-operation between Australia and New-Zealand is the Trans Tasman Mutual Recognition Arrangement (TTMRA), concluded in 1996. The key principle of this arrangement is that a good which can be legally sold in one country may be legally sold in the other, without having to meet further sales-related regulatory requirements. It established a Trans-Tasman Compliance Framework for EMC and a joint As/NZ standard. This framework adopts SDOC II and the suppliers need to retain technical documentation in one of the countries.

Table 2. EU R&TTE Implementation Status in Central and East European Countries

Country:	Target Date	Planning to Implement R&TTED	Date Achieved	Status
Czech Republic	Jan 2001	Yes		Into force early 2001
Estonia	June 2000	Completed	4 August 2000	
Hungary	8 April 2000	Yes		Temporary importer declaration route applies, but not yet fully implemented.
Latvia	Jan 2003	Yes		
Lithuania		Yes		Will move towards R&TTE once a market surveillance regime is established.
Poland	1 Jan 2001	Yes		New Telecommunications Act (2000) currently being developed. Type Approval regime no longer operational as from 1 st Jan 2001. R&TTE implementation imminent.
Slovenia	Early 2001	Yes		An 'equivalent' of the R&TTE is planned to be in place early in 2001.
Slovakia		Yes		Progress ongoing.

V. SUMMARY AND REQUEST FOR FURTHER INFORMATION AND COMMENTS

69. This interim paper prepared for discussion in the Trade Committee Working Party is released as a general distribution document under the responsibility of the Secretary-General of the OECD, with the aim of bringing information on this subject to the attention of a wider audience and receiving comments from any interested parties. Any parties wishing to make comments are requested to send those in English or French to the following address by 30 June 2001.

70. This analysis has identified three particular areas that appear to be candidates for international harmonisation: Electrical Safety, EMC and Radio Interference. It has found that the OECD Members

covered in this study tend to use international standards in their technical regulations on **Electrical Safety** and **EMC** (see **Table 3**); **regarding Radio Interference**, any challenges remain in achieving international harmonisation although it is desirable to develop standards that are **technology-neutral**. With respect to the other identified regulatory objectives (**Interoperability, Health, Environment, Protection of Public Network, Quality and others**), questions arise concerning the costs and benefits of international harmonisation and whether it would be a preferred option for addressing trade problems associated with standards, vis-à-vis other approaches.

71. The OECD secretariat would welcome comments and additional information to help deepen the above analysis.

Table 3. Harmonisation of Electrical Safety and EMC

Country:	Electrical Safety	EMC
Czech Republic (EU R&TTE in 2001)	National stds (EN609500)	National stds (EN55022)
Korea	National Stds(IEC950)	National stds (CISPR 22)
Poland (EU R&TTE in 2001)	National Stds (EN60950)	National stds (EN 55022)
Slovak Republic (EU R&TTE in 2001)	National Stds (EN60950)	National stds (EN 55022)
Turkey	National Stds (EN60950)	National stds (EN 55022)
Canada	National Stds (IEC950)	National stds (USFCC / CISPR 22)
Hungary (EU R&TTE in 2001)	National Stds (EN60950)	National stds (EN 55022)
Japan (Note2)	National Stds (IEC950)	National stds (CISPR22)
Switzerland	National Stds (EN60950)	National stds (EN 55022)
USA	National stds (IEC950,UL1950)	National stds (CISPR22)
EU(EUR&TTE)	EN60950(IEC950)	EN55022(CISPR22)
Iceland (EUR&TTE)	EN60950(IEC950)	EN55022(CISPR22)
Norway (EUR&TTE)	EN60950(IEC950)	EN55022(CISPR22)
Australia	AS/NZ3260 (IEC950)	AS/NZ3548 (CISPR22)
New Zealand (Note 3)	AS/NZ3260(IEC950)	AS/NZ3548](CISPR22)

Note 1: Many OECD Member countries appear to have adopted IEC standards as the basis for technical regulation, however, it is difficult to measure precisely what additions or deviations at national level actually exist in each case.

Note 2: In Japan regulation on electrical safety does not cover TTE. The voluntary scheme on EMC covers TTE.

Note 3: In New Zealand there is no regulatory authority in telecom sector and Telecom NZ operates “telepermit system” (a type approval).