

GTW ASSOCIATES



**Potential for International Co-operation and Reduction of Trade Barriers
arising from Technical Requirements and Conformity Assessment procedures
in the Telecommunications Sector**

**Interim Report prepared under
Contract ECH/TLR JA00006078
for**



**George T. Willingmyre, P.E.
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**GTW Associates
1012 Parrs Ridge Drive
Spencerville, MD 20868
phone 301-421-4138
facsimile 301-421-0977
gtw@gtwassociates.com
<http://www.gtwassociates.com>**

Background and Introduction

GTW Associates prepared this report Potential for International Co-operation and Reduction of Trade Barriers arising from Technical Requirements and Conformity Assessment procedures in the Telecommunications Sector for the secretariat of the working party of the OECD Trade Committee.

OECD requested GTW to prepare a chapter or part of the report on potential for international co-operation and reduction of trade barriers arising from technical requirements and conformity assessment procedures in technical regulations on the telecommunications terminal equipment.

The report strives to identify key characteristics subject to current or potential regulatory oversight and report on the nature of regulatory oversight for these characteristics in major segments of the global market place (USA, EU, Japan, Brazil and Australia).

The characteristics are chosen from the following: 1)Quality of service and procurement (TS 9000) 2) Interoperability 3) Protection of Public networks including security/privacy/encryption considerations 4) Radio interference and EMC 5) Health effects 6) Safety including liability 7) environment 8) accessibility.

The overall goal is to consider how the harmonization of technical regulation is pursued and what to the extent it is possible for possible different objectives of regulation.

Further, OECD requested GTW to collect factual materials and undertake analysis on the following two aspects.

The costs and benefits of the harmonization of technical regulation

Preconditions for such harmonization and what are the best practices to underpin such harmonization

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phone 301-421-4138
facsimile 301-421-0977
gtw@gtwassociates.com
<http://www.gtwassociates.com>

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I Scope of Product Coverage

The project scope defines the product coverage as:

The study covers telecommunication terminal equipment and address issues on technical requirements and conformity assessment procedures in technical regulation. As the coverage of telecommunication terminal equipment differs across regulations of different countries, we define telecommunication terminal equipment as defined by the WTO Information Technology Agreement. It defines Telecommunication Equipment as the range of products including. Telephone Sets, Facsimile machines, Telephone answering devices, Switching equipment, Multiplexes, Cellular phones, Cellular transmission systems, Voice messaging equipment, Satellite network equipment, Bridges and Routers.

The US International Trade Commission prepared *Publication 3031 April 1997 US International Trade Commission Advice Concerning an Information Technology Agreement and Modification of Duties on Distilled Spirits Chapter 4 Telecommunications* which provides very helpful elaboration of the nature and types of telecommunications products covered by the ITA and the nature of the global market for this equipment.

The Information Technology Agreement (ITA) includes most equipment typically associated with the telecommunications sector, such as telephone sets, fax machines, switching equipment, answering machines, pagers, cellular phones, and fiber optic transmission systems, as well as the vast majority of parts for these products. Uninsulated optical fiber cable and communications satellites are excluded from the agreement and, accordingly, from this discussion of the telecommunications industry. The exact list of products covered by the ITA may be found in Attachment A, Section 1 of the formal Ministerial Declaration at http://www.wto.org/wto/english/tratop_e/inftec_e/itadec_e.htm.

Table 4-1 shows the six sectors which comprise the telecommunications equipment industry as defined for purposes of this report and the proportion of the US market circa 1997 for each sector.

The global market for telecommunications is driven by a combination of forces in both developed and developing nations. The privatization of telecommunications carriers and the deregulation of telecommunications markets has spurred competition in many countries and increased the demand for the telecommunications equipment. Recent entrants in the telecommunications services market need equipment to build new telecommunications infrastructures, whereas established telecommunications providers now facing competition are having to update old infrastructure. Rapidly developing technology has also fueled demand by regularly introducing new products and services and lowering the cost of old products and services. Table 4-2 portrays the relative distribution of global producers.

The project scope above properly notes:

As the coverage of telecommunication terminal equipment differs across regulations of different countries,

During the course of this project the different technical regulations that apply to a "narrow" definition of "telecommunications terminal equipment" compared to a more broad definition that includes telephone sets, fax machines, switching equipment, answering machines, pagers, cellular phones, and fiber optic transmission systems presented major challenges. One example is the different expectations for "intentional radiators" such as cell phones compared to "unintentional" radiators such as telephone sets.

These differences notwithstanding, all of the industry sources contacted by GTW endorsed the broad scope of telecommunications equipment covered by the ITA agreement. This strong support is very likely related to the on going ITA Committee work programme Initiated November 13, 2000 on non-tariff measures http://www.wto.org/wto/english/news_e/pres00_e/pr198_e.htm

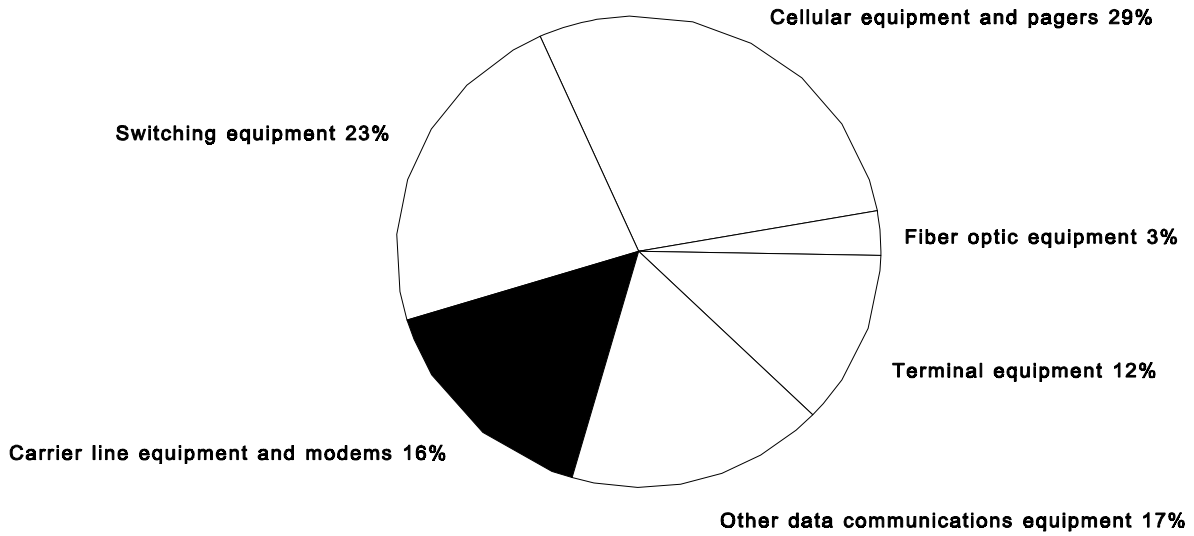
Participants to the WTO Agreement that eliminated tariffs on information technology products (ITA) are now turning their attention to non-tariff barriers in this dynamic trade sector. The Committee of Participants on the Expansion of Trade in Information Technology Products (ITA Committee) approved, on 13 November 2000, a one-year work programme on non-tariff measures on ITA products consisting of three phases. During the first phase, the Committee will compile, by March 2001, an inventory of non-tariff measures which have been identified by participants as impediments to trade in ITA products.

One comment from the Information Technology Industry Council (ITIC) in the United States suggested in fact an expansion of the scope to include all products covered by the ITA and makes a persuasive argument that the expansion would not significantly complicate the effort and would extend the potential benefits of the effort to a significantly broader industrial sector.

*From: "Godfrey, John" <
To: "Willingmyre, George" <gtw@gtwassociates.com>
Cc: "Maxwell, Bill" <
Sent: Monday, November 27, 2000 3:57 PM
Subject: RE: project*

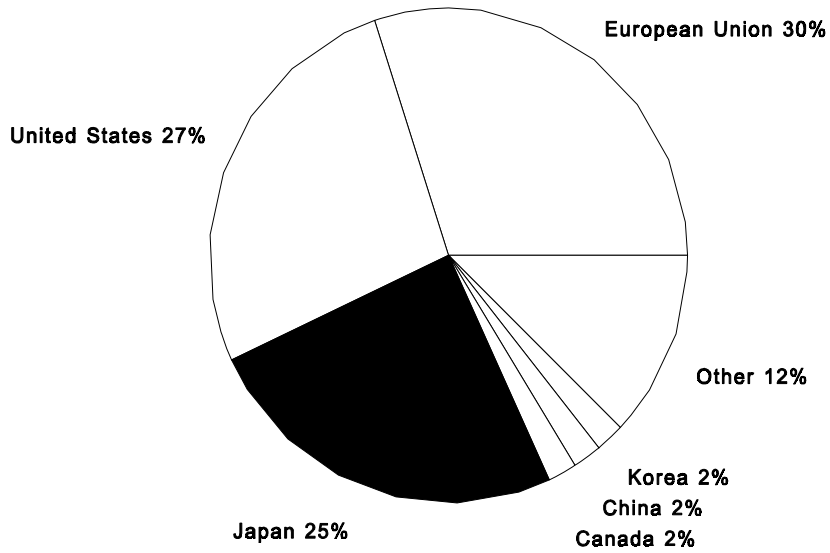
My input on defining the scope of products covered is to broaden it from telecom to "information and communications technologies (ICT)", as the Europeans refer to what we would call IT&telecom. The safety and electromagnetic interference standards that cover telecom equipment (IEC 60950 and CISPR 22, respectively) also cover IT equipment. So, it would be easy for a study of telecom equipment's electrical safety and EMI regulations to be extended to electrical safety and EMI regulations on IT equipment--in most countries, the regulations cover both telecom and IT. And it would be more interesting to a broader section of ITI members if the scope were broader than just telecom equipment. To get an easy definition

of IT equipment, you could consider using the WTO IT Agreement's product scope. As I have mentioned to you, that product scope is broad, encompassing software, for example. But this won't pose a problem in the electrical safety and EMI regulations analyses, since products such as software don't have electricity or EMI in them, and will naturally be left out of the analysis.



Source: Compiled from official statistics of the U.S. Department of Commerce.

Table 4-1 from *Publication 3031 April 1997 US International Trade Commission Advice Concerning an Information Technology Agreement and Modification of Duties on Distilled Spirits Chapter 4 Telecommunications*



Source: Elsevier, *Telecommunications: A Profile of the Worldwide Telecommunications Industry*, 1997, and USITC staff estimates.

Table 4-2 from *Publication 3031 April 1997 US International Trade Commission Advice Concerning an Information Technology Agreement and Modification of Duties on Distilled Spirits Chapter 4 Telecommunications*

II Technical Regulations Inventory

The project had the objective of obtaining summary, but detailed information about technical regulatory and standards practices and conformity assessment practices in several countries in representative areas of the world.

It was hoped to collect information in a structured manner about potential regulatory topics such as) Quality of service and procurement ; 2) Interoperability; 3) Protection of Public Networks including security/privacy/encryption considerations; 4) Radio Interference, EMC; 5) Health Effects (EMF); 6) Safety including liability; 7) Environment; 8) Accessibility.

For each of these it was hoped to define:

Regulatory Status...N/A private market place, national law, regulation
Marketplace/Regulatory use of standards, existence of relevant International standards activity
Nature of regulatory oversight...none, govt, certification, third party certification; SDoC, etc
Use or existence of International CA schemes...
Current/past efforts/results at global harmonization ...MRAs

GTW found such a structured inventory was impossible to complete in a rigorous fashion within the scope and timing of the project. The project undertaking succeeded however in identifying helpful and relevant existing resources and studies completed in the APEC region and by industry in Europe that treat these matters. This chapter presents summaries of an APEC MRA Implementation project undertaken by the Australian Telecommunications Industry Association (ATIA) Communications Industry Association of Japan (CIAJ) and Telecommunications Industry Association (TIA). Further information of the APEC implementation project is available at <http://www2.apii.or.kr/telwg/mraTG/mratf03.html>. A European perspective about regulatory objectives from the point of view of a coalition of industry trade associations is also presented. Information about technical requirements in the US addressing for accessibility considerations and standards proposals in EU complete the chapter. Country –specific summaries for Australia and Japan are found at Appendix 1 and 2. These are based on the APEC MRA Implementation project. A summary for the United States is found at Appendix 3 based on the APEC MRA Implementation project and GTW Associates previous work for the European

Commission on a Guide to the US/EU MRA. A summary for Brazil remains in process at the date of submission of this report February 1, 2000

Excerpts from APEC MRA Implementation project undertaken by Australian Telecommunications Industry Association (ATIA) Communications Industry Association of Japan (CIAJ) and Telecommunications Industry Association (TIA) USA further information at <http://www2.apii.or.kr/telwg/mraTG/mratf03.html>

Regulatory Bodies

Within the APEC region, telecommunications equipment is regulated by government authorities. The only exception to this is New Zealand. However, in 7 of the economies that responded to the survey, part or all of the administrative arrangements associated with these regulations are delegated to other organisations, both government and non-government.

The arrangements that are delegated involve testing of equipment, however they may also include the development of standards, certification of equipment, accreditation arrangements, or the regulation of an entire class of equipment.

Scope of Technical Regulations and Administrative Arrangements

Generally within APEC economies, there are technical regulations in place for equipment that is connected to the PTN, as well as equipment that uses the radiofrequency spectrum. In addition, there are EMC requirements in some economies for products other than communications equipment that unintentionally emit radiofrequency energy.

All economies that returned surveys have technical requirements for use of the radiofrequency spectrum, including New Zealand. The other technical requirements that exist within these economies, in order from the most common to least common are:

- 1. electromagnetic interference (EMI),*
- 2. electrical safety,*
- 3. network integrity,*
- 4. interoperability,*
- 5. emergency access,*
- 6. immunity,*
- 7. radiofrequency health exposure,*
- 8. mandatory quality assurance,*
- 9. prevention of nuisance to other users, and*
- 10. demarcation of responsibility between telecommunications circuit facilities and terminal facilities.*

Eleven of the economies that returned surveys indicated that they have a prescribed list of products or a definition of equipment covered by the technical regulations.

Regulatory Procedures

The most common forms of prescribed procedures for the supply, connection and operation of telecommunications equipment are type approval by the regulator, type tests and use of the Declaration of Conformity. It should be noted that most economies use more than one of the total range of procedures, providing alternatives for equipment suppliers, or having different procedures for different classes of equipment. Product licensing in many economies refers to the licensing of equipment that uses the radiofrequency spectrum.

All economies require some form of testing to be carried out, and all but one economy requires applications to be submitted to the regulator, along with regulatory fees. An economy's administrative arrangements may not require an equipment supplier to carry out these procedures in every instance, for example in some economies, a sample of the product only needs to be submitted if a test report has not already been obtained.

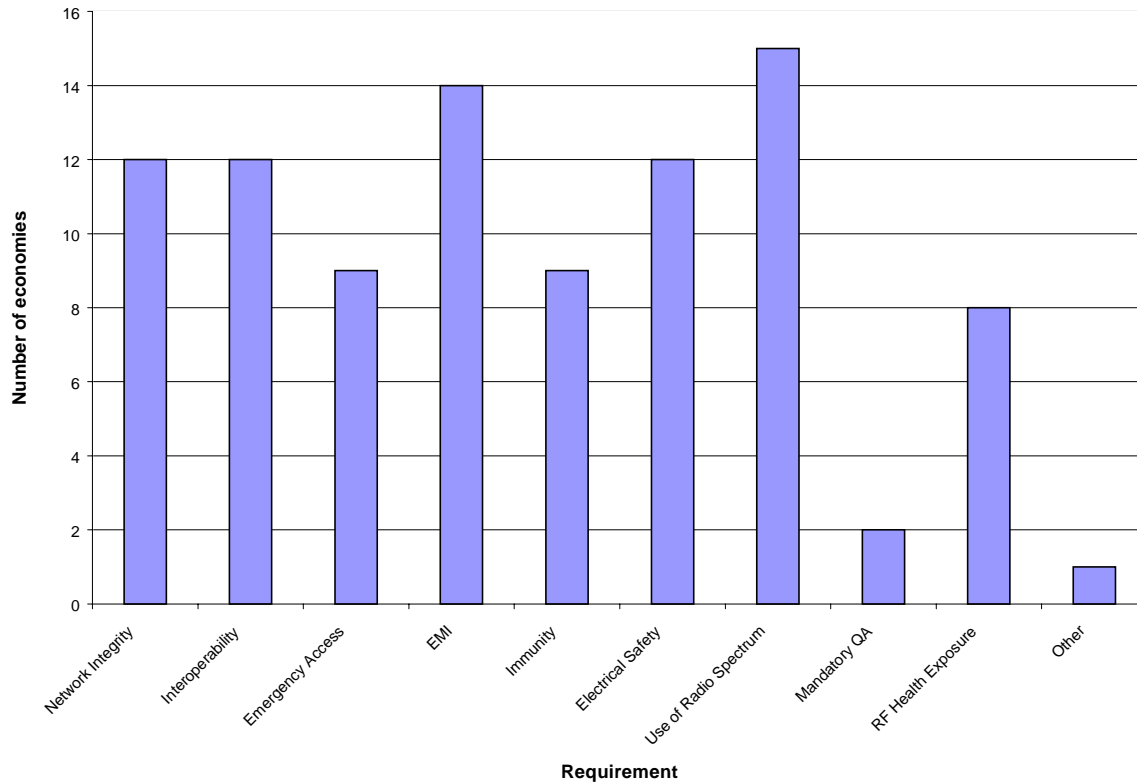
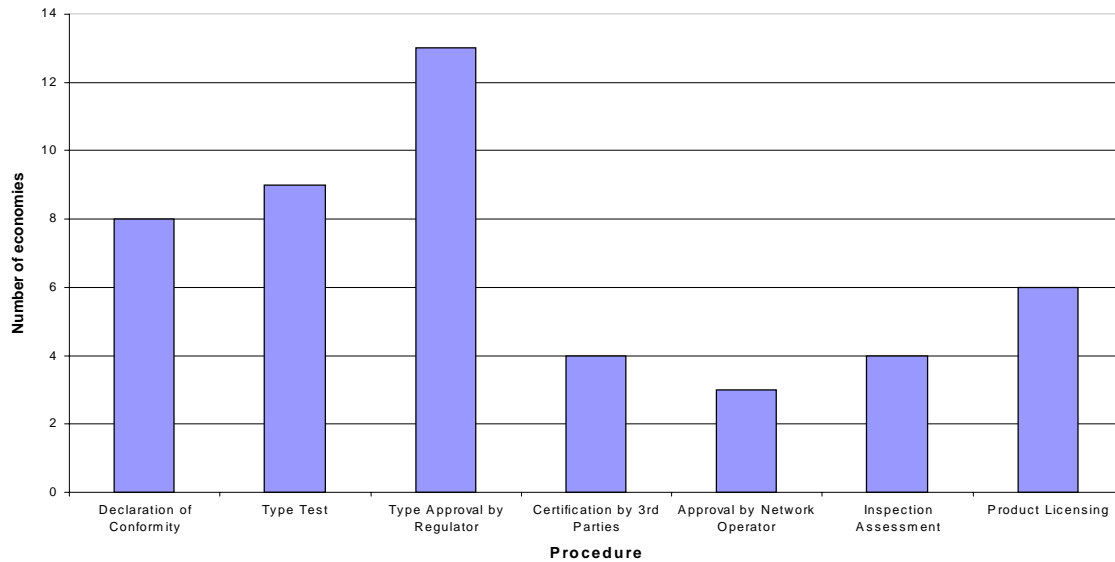


Table 1 - Technical requirements within APEC economies

From observations of APEC MRA Implementation project undertaken by Australian Telecommunications Industry Association (ATIA) Communications Industry Association of Japan (CIAJ) and Telecommunications Industry Association (TIA) USA further information at <http://www2.apii.or.kr/telwg/mraTG/mratf03.html>

Table 2 - Regulatory procedures within APEC economies

Telecommunications Industry Association (ATIA) Communications Industry Association of Japan (CIAJ) and Telecommunications Industry Association (TIA) USA further information at <http://www2.apii.or.kr/telwg/mraTG/mratf03.html>



Excerpt from Global Product Conformity Assessment System Proposal June 2000 endorsed by multiple trade associations

Addressing Horizontal regulatory matters including those within the scope of this project

The convergence which is now taking place between different sectors, specifically between telecommunications, media and information technology as discussed in the EU Commission Green Paper on Convergence will make it increasingly difficult to make a regulatory separation of different sectors. Since convergence will benefit the users of products and services, authorities should support this development by adapting (and wherever possible reducing) its regulation in a timely manner. The best way of doing this is to resort to horizontal regulation, and more reliance on competition rules to ensure a level playing field.

Also, products are becoming multifunctional, and consequently they may be subject to a number of (at present) sectoral directives. Meeting the legal requirements related to one sector may result in non-compliance with legal requirements of another sector. The best way to ensure that combined products can enjoy easy market access is to use horizontal legislation. Sectoral legislation should be avoided wherever possible.

Issue	Comments
Safety, including electrical safety	<i>Safety has traditionally been subject to horizontal regulation, with appropriate technical standards and guidelines defining the criteria for compliance.</i>
Radio and EMC	<i>Spectrum management issues and the co-existence of products in the electromagnetic environment are horizontal issues. Due to the intrinsic similarity between radio and EMC, these should be covered by one regulatory framework.</i>
Liability	<i>Consumer protection and liability for defective products is a horizontal issue. There is no rationale to assign different regulatory regimes for different technical sectors.</i>
Privacy	<i>Directive 95/46/EC on the processing of personal data provides a horizontal umbrella for privacy. This is enhanced by directive 97/66/EC on the processing of personal data and protection of privacy in the telecommunications sector. These directives fully cover protection of privacy.</i>
People with special needs	<i>Measures taken in sectoral directives are only targeted towards a limited number of sectoral products. Where legislation is deemed necessary, a high level of well-being and employment for people with disabilities is better achieved through horizontal</i>

	<i>measures.</i>
<i>Environmental issues</i>	<p><i>Horizontal legislation (where legislation is needed) is preferred because of factors like:</i></p> <ul style="list-style-type: none"> - <i>combined products</i> - <i>convergence between sectors</i> - <i>material content</i>

Accessibility Considerations for Telecommunications products in the US and EU

Accessibility requirements text found in Section 255(e) Telecommunications Act of 1996 states that the Architectural and Transportation Barriers Compliance Board (Access Board) shall develop guidelines for accessibility of telecommunications equipment and customer premises equipment in conjunction with the Commission.

To implement its obligations pursuant to section 255(e), the Access Board convened the Telecommunications Access Advisory Committee (TAAC) to develop recommended equipment accessibility guidelines for consideration by the Access Board. The TAAC included representatives from equipment manufacturers, software firms, telecommunications providers, organizations representing persons with disabilities, and other persons interested in telecommunications accessibility.

The guidelines developed consist of: (1) general accessibility requirements; (2) specific guidance on the ways in which the functions necessary to operate a product should be made accessible if readily achievable; and (3) standards for compatibility with peripheral devices and specialized CPE.

FCC issued Report and Order 99-181 on September 29, 1999 In the Matter of Implementation of Sections 255 and 251(a)(2) of the Communications Act of 1934, as Enacted by the Telecommunications Act of 1996 Access to Telecommunications Service, Telecommunications Equipment and Customer Premises Equipment by Persons with Disabilities

The Report and Order :

- (1) *require manufacturers and service providers to develop a process to evaluate the accessibility, usability, and compatibility of covered services and equipment*
- (2) *require manufacturers and service providers to ensure that information and documentation provided to customers is accessible to customers with disabilities, if readily achievable*

(3) require manufacturers or service providers to review the accessibility of a product or service, and incorporate accessibility features, where readily achievable, at every natural opportunity

(4) require the universal deployment of accessibility features that can be incorporated into product design when readily achievable; where those features cannot be universally deployed, but are readily achievable to incorporate into some products and services, manufacturers and service providers have the flexibility to distribute those features across their products or services as long as they do all that is readily achievable

(5) where meeting accessibility requirements are not readily achievable, require manufacturers and service providers to ensure compatibility with existing peripheral devices or specialized Customer Premises Equipment (CPE) commonly used by individuals with disabilities to achieve access, if readily achievable

(6) prohibit a telecommunications carrier from installing network features, functions, or capabilities that do not comply with the accessibility requirements of the rules.

Definitions within the rule include:

(a) The term accessible shall mean that:

(1) Input, control, and mechanical functions shall be locatable, identifiable, and operable in accordance with each of the following, assessed independently:

(i) Operable without vision. Provide at least one mode that does not require user vision.

(ii) Operable with low vision and limited or no hearing. Provide at least one mode that permits operation by users with visual acuity between 20/70 and 20/200, without relying on audio output.

(iii) Operable with little or no color perception. Provide at least one mode that does not require user color perception.

(iv) Operable without hearing. Provide at least one mode that does not require user auditory perception.

(v) Operable with limited manual dexterity. Provide at least one mode that does not require user fine motor control or simultaneous actions.

(vi) Operable with limited reach and strength. Provide at least one mode that is operable with user limited reach and strength.

(vii) Operable with a Prosthetic Device. Controls shall be operable without requiring body contact or close body proximity.

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(viii) Operable without time-dependent controls. Provide at least one mode that does not require a response time or allows response time to be by-passed or adjusted by the user over a wide range.

(ix) Operable without speech. Provide at least one mode that does not require user speech.

(x) Operable with limited cognitive skills. Provide at least one mode that minimizes the cognitive, memory, language, and learning skills required of the user.

(2) All information necessary to operate and use the product, including but not limited to, text, static or dynamic images, icons, labels, sounds, or incidental operating cues, comply with each of the following, assessed independently:

(i) Availability of visual information. Provide visual information through at least one mode in auditory form.

(ii) Availability of visual information for low vision users. Provide visual information through at least one mode to users with visual acuity between 20/70 and 20/200 without relying on audio.

(iii) Access to moving text. Provide moving text in at least one static presentation mode at the option of the user.

(iv) Availability of auditory information. Provide auditory information through at least one mode in visual form and, where appropriate, in tactile form.

(v) Availability of auditory information for people who are hard of hearing. Provide audio or acoustic information, including any auditory feedback tones that are important for the use of the product, through at least one mode in enhanced auditory fashion (i.e., increased amplification, increased signal-to-noise ratio, or combination).

(vi) Prevention of visually-induced seizures. Visual displays and indicators shall minimize visual flicker that might induce seizures in people with photosensitive epilepsy.

(vii) Availability of audio cutoff. Where a product delivers audio output through an external speaker, provide an industry standard connector for headphones or personal listening devices (e.g., phone-like handset or earcup) which cuts off the speaker(s) when used.

(viii) Non-interference with hearing technologies. Reduce interference to hearing technologies (including hearing aids, cochlear implants, and assistive listening devices) to the lowest possible level that allows a user to utilize the product.

(ix) Hearing aid coupling. Where a product delivers output by an audio transducer which is normally held up to the ear, provide a means for effective wireless coupling to hearing aids.

(b) The term compatibility shall mean compatible with peripheral devices and specialized customer premises equipment commonly used by individuals with disabilities to achieve accessibility to telecommunications services, and in compliance with the following provisions, as applicable:

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(1) *External electronic access to all information and control mechanisms. Information needed for the operation of products (including output, alerts, icons, on-line help, and documentation) shall be available in a standard electronic text format on a cross-industry standard port and all input to and control of a product shall allow for real time operation by electronic text input into a cross-industry standard external port and in cross-industry standard format. The cross-industry standard port shall not require manipulation of a connector by the user.*

(2) *Connection point for external audio processing devices. Products providing auditory output shall provide the auditory signal at a standard signal level through an industry standard connector.*

(3) *TTY connectability. Products which provide a function allowing voice communication and which do not themselves provide a TTY functionality shall provide a standard non-acoustic connection point for TTYS. It shall also be possible for the user to easily turn any microphone on and off to allow the user to intermix speech with TTY use.*

(4) *TTY signal compatibility. Products, including those providing voice communication functionality, shall support use of all cross-manufacturer non-proprietary standard signals used by TTYS.*

In 2000 the Information Communications Technologies Standards Board (ICTSB) within the European standards infrastructure had the opportunity to contemplate ICTSB19(00)04: Report of Design for all project Team. Find below from among the large number of recommendations excerpts listing those standards-related proposals applicable to telecommunications products.

	Work Items	Deliverable (action required)
2.1	2.1 REQUIRED STANDARDS ON INTERFACES FOR ADAPTATION EQUIPMENT:	
2.1.1	Develop recommendations on adaptability of phone user interfaces to people with different needs.	Technical Report
2.1.2	Standardise interface to external input devices (e.g. larger keyboard).	Standard
2.1.3	Standardise interface to external display systems (e.g. TV, large display).	Standard
2.1.4	Standardise interface to earphones and external sound amplification systems.	Standard
2.1.5	Develop standards for induction coupling in (all) (public) (fixed network and cellular) phones.	Standard
2.1.6	Develop standards on hearing aid coupling (inductive loops, possibility to plug in hearing aids).	Standard
2.1.7	Develop standards for the wireless connection of audio to hearing aids (e.g. ANSI C63.19).	Standard
2.2	2.2 REQUIRED RECOMMENDATIONS FOR	

	Work Items	Deliverable (action required)
	MULTI-MODAL USER INTERFACES:	
2.2.1	Develop recommendations for multi-modal dialogue prompting.	Technical report
2.2.2	Develop recommendations for multi-modal presentation of information (e.g. on cost structure and billing).	Technical report
2.2.3	Develop recommendations for multi-modal help.	Technical report
2.2.4	Develop recommendations on “blind” activation and navigation.	Technical report
2.2.5	Review user interface recommendations attending to typefaces, legibility, sizes, colours and graphical representations.	Technical report
2.2.6	Develop recommendations for converting display information into voice output.	Technical report
2.2.7	Develop recommendations for additional auditory signals in dialogues.	Technical report
2.2.8	Develop recommendations on feedback typology: how to activate the different outputs (speech, visual...), message typologies, tactile feedback.	Technical report
2.2.9	Develop recommendations on how to make equipment usable for one-handed and single-handed users.	Technical report
2.2.10	Develop recommendations on the implementation of shift or function keys (in terms of offering alternatives for the one-handed user).	Technical report
2.3	2.3 REQUIRED RECOMMENDATIONS ON LOWERING COGNITIVE DEMANDS:	
2.3.1	Standardise minimum timeout in dialogue input prompts.	Standard
2.3.2	Develop recommendations on characteristics of novice and expert menus and help systems.	Standard
2.3.4	Standardise feedback typology (e.g. visual, auditory).	Standard
2.3.5	Standardise interaction elements (shape, colours, feedback, dimensions...) for physical and screen controls and indications.	Standard
2.4	2.4 SAFETY AND SECURITY:	
2.4.1	Standardise accessibility of emergency calls (as in GSM).	Standard
2.4.2	Develop recommendations for prompting in potentially damaging dialogues.	Standard
2.4.3	Standardise the interface for biometric	Standard

	Work Items	Deliverable (action required)
	identification.	
2.4.4	Develop technical (non-human factors) standard on security aspects.	Standard
2.5	2.5 STANDARDS FOR TEXT TELEPHONY:	
2.5.1	Standardise a European communication protocol for text telephones (European or global standard)	Standard
2.5.2	Develop a standard for National text-telephone relay services. (National standardisation bodies)	Standard
2.5.3	Develop a standard interface for ISDN User to user signalling.	Standard
2.6	2.6 STANDARDISED SYMBOLS:	
2.6.1	Standardise symbols for different kinds of telecommunications terminals and services; symbols for user interface elements; symbols for on-off, mains, receiver, etc.	Standard
2.7	2.7 OTHER RECOMMENDATIONS:	
2.7.1	Develop recommendations for specialist directory enquiries and service help facilities for people with special needs.	
2.7.2	Develop standards for camera characteristics in public videophones.	Standard
2.7.3	Develop a standard for adjustable display angles (tilted displays).	Standard

III Costs of Regulations and Savings from Reform Measures

There are scant solid economic data on the detailed costs of meeting various global technical requirements and assessments of conformity. Reliable data on savings arising from reform in technical regulations and standards conformity assessment is even harder to substantiate. To the extent it exists at all, OECD has performed many of the published studies in this field.

This Chapter presents the findings of a literature search on the topic.

The European Commission recently sought proposals to create a methodology for evaluation of the economic impacts of Mutual Recognition Agreements. Perhaps such a methodology will produce meaningful data in the future

Published in the Supplement of the Official Journal (OJ - S - 154) on 12.08.2000 B-Brussels: Contract related to for a Study on the Economic Impact of Mutual Recognition Agreements on Conformity Assessment.

Description: the European Commission (DG Trade) is planning to conclude a contract aimed to carry out a study for a methodology for the evaluation of the economic impact of Mutual Recognition Agreements (MRAs) on conformity assessment and associated issues, that have been concluded between the Commission on behalf of the European Union, and other countries, and to carry out such an evaluation. The objectives of the study are :

- *The development of a methodology, possibly including an econometric model, capable of determining the economic impact of MRAs on trade in the sectors that they cover,- and*
- *A quantitative examination of the economic impact of the only two MRAs currently regarded as being in full operation, ie., those between the EU and Australia and between the EU and New Zealand.*

One of the most often quoted studies of costs attributable to standards -related barriers to trade was presented in Staff Research Study 23 Office of Industries U.S. International Trade Commission GLOBAL ASSESSMENT OF STANDARDS BARRIERS TO TRADE IN THE INFORMATION TECHNOLOGY INDUSTRY November 1998 Publication 3141

Costs of IT Standards-Related Barriers to Trade

Empirical economic analysis of the effects of standards-related barriers to trade is limited and methodology to measure the effects is largely underdeveloped. Costs associated with standards- related barriers are difficult to quantify, particularly costs of lost revenues due to time-to market delays. Further, it can be difficult to determine which standards related measures are efficient and justified as opposed to those which are unnecessary and excessive. However, other analysts assert that it is less a

methodological problem than a data problem. They state that methods now exist to quantify the effects of standards-related barriers to trade but substantial efforts are required to acquire the requisite data and determine its proper aggregations to complete the quantitative analysis. Nonetheless, some estimates indicate that the overall impact of standards-related measures on trade is substantial According to Department of Commerce estimates, \$66 billion of the \$110 billion in U.S. exports to Europe in 1993 were subject to EU-required product certification; \$10 billion, primarily IT products, were subject to third-party certification. A European Commission study in 1992 showed that streamlining the system of telecommunications terminal type approval in the EU could save approximately \$600 million in testing and type approval costs and \$1.2 billion in terms of accelerated market entry and production gains. /T/ has estimated that duplication of mandatory U.S. and European Union testing and certification for computers, telecommunications equipment, and other IT products costs U.S. companies and consumers more than \$1.3 billion annually. Further, there are indications that global welfare costs of duplicative standards-related barriers to trade could be many times larger than the direct costs of such measures. ITI has estimated further that duplicative testing and certification requirements for telecommunications equipment and other IT products in the APEC region cost U.S. manufacturers and consumers \$1.8 billion per year Finally, a comprehensive examination of various OECD countries' telecommunications terminal type approval requirements estimated that the costs of meeting the various requirements account for slightly over 2 percent of the price of exported products. The OECD has recommended that more thorough analysis of the economic effects of standards-related barriers to trade be undertaken, including in the IT industry. Some experts note that methodologies for measuring standards-related barriers to trade need to be further examined and that more data must be collected.

At the time of June 19, 1996 (Volume 61, Number 119) Federal Register announcement of reform in Streamlining the Equipment Authorization Procedures for Digital Devices allowing the method of Declaration of Conformity to part 15 requirements, the FEDERAL COMMUNICATIONS COMMISSION cited \$250 Million annual savings to industry.

SUMMARY.- These rules deregulate the equipment authorization requirements for personal computers and personal computer peripherals

by relaxing the equipment authorization procedures to provide a new self authorization process based on a manufacturer's or supplier's declaration of compliance. These changes were made to reduce the regulatory burden on computer manufacturers and assemblers. This action will save industry approximately \$250 million annually, permit products to reach the marketplace more quickly and stimulate competition in the computer industry.

In FCC's most recent highly relevant REPORT AND ORDER FCC 00-400 In the Matter of 2000 Biennial Regulatory Review of Part 68 of the Commission's Rules and Regulations Adopted: November 9, 2000 Released: December 21, 2000 and published in US Federal Register January 18, 2001, FCC estimated "millions of dollars per year industry-wide" savings.

We conclude that privatization of the terminal equipment approval process will continue to provide the same degree of protection to the PSTN as the current Commission Part 68 registration and approval process, while significantly increasing the efficiency of the approval process. We agree with the majority of commenter, including equipment manufacturers, testing laboratories, carriers, and other providers of telecommunications, that the Commission should privatize the equipment approval process for several reasons.

First, privatization will reduce product approval times and enable manufacturers to bring their products to market at an accelerated pace. Thomson estimates that in this era of intense terminal equipment competition, the cost to consumers and manufacturers of the Commission's current registration process can amount to millions of dollars per year industry-wide. (reference to foot note 136 here) We agree with Thomson and other commenters that relieving the industry and consumers of any unnecessary delay will further enhance the competitive robustness of the terminal equipment market.

Second, we are persuaded by Nortel and ITI that the competitive nature of terminal equipment market, which demands quality products, gives rise to strong economic incentives for manufacturers to ensure compliance with relevant technical criteria, thereby protecting the network from harm. As evidence of these incentives, Nortel and ITI point out that there is an absence of noncompliance with the Commission's requirements. Finally, we are persuaded that the new privatized equipment approval process will bring newer technologies to end user customers more expeditiously than the current Commission approval process..... The record overwhelmingly demonstrates that, based upon the maturity and competitiveness of the terminal equipment manufacturing market and the telecommunications services industry, it is in the public interest for private industry to self-regulate conformance of terminal equipment to the Administrative Council's technical criteria. Our decision in this Order to privatize the terminal equipment registration process will reduce unnecessary costs and delays currently imposed upon manufacturers and the Commission without measurably increasing the possibility of harm to the network.

Thomson Comments, filed July 2, 1999, at 2, 3. The estimate made as follows: Each of the 3,000 products registered every year under Part 68 experiences, on average, a four-week delay in market introduction. The aggregate costs of these delays, multiplied by the number of registered products, results in total costs approximating \$100 million per year

The Stage 2 Report of the APEC Tel MRA Implementation project had the following to report about costs

In the U.S. ITC Testimony held on April 21, 1998, Mr. Charles Berestecky on behalf of the Telecommunications Industry Association (TIA) of the U.S.A. stated that "industry estimates this duplicative testing and certification adds as much as 15 percent to the cost of such equipment, and adds weeks or months of delay to a product's introduction into a market."

A case study conducted in a Japanese supplier suggests that MRA cost saving could reach about four percent of the total shipping costs.

If all the costs added by duplicative testing and certification were fully eliminated under the future MRA environment, it is estimated that APEC economies' cost savings from the full implementation of the MRA may reach US\$800 million to US\$3,000 million in total per year (i.e., 4 percent to 15 percent of the roughly estimated annual total exports of wireline and wireless equipment covered by the APEC TEL MRA). However, during the phase-in periods of the APEC TEL MRA, the effects of the Arrangement will be rather limited. Additionally, costs associated with equipment redesign to meet regulatory requirements that are often included in these estimates may be reduced but not eliminated.

IV Survey of Recommendations and Positions by informed parties

The goals of this study of promoting international co-operation and reduction of trade barriers arising from technical requirements and conformity assessment procedures in technical regulations on the telecommunications terminal equipment have been pursued by many other government and industry organizations in the recent past. Improving trade by striving to reduce unnecessary differences in technical regulations and in the variety of means of showing conformity to such technical regulations is a goal in which industry, consumers and governments share a common interest. This section surveys relevant work, observations, lessons learned and recommendations from such public and private sector resources in order that OECD may build upon and expand previous undertakings. Citations are original text or excerpts from material contained in the list of references. Section V distils common themes and best practices.

1) From Facilitating Access to Information Technology through Supplier's Declaration of Conformity Information Technology Industry Council (ITI) Presentation to WTO TBT Committee June, 1999

1. Signatories to the Information Technology Agreement of the WTO would reference in national regulations on information technology products, starting with computers and computer peripherals, the following two standards, which have been widely adopted worldwide:

- *International Electrotechnical Commission (IEC) 60950 for safety of IT equipment.*
- *International Special Committee on Radio Interference (CISPR) 22 for electromagnetic emissions from IT equipment.*

2. Governments would accept the validity of product tests to IEC 60950 and IEC CISPR 22 from any lab (regardless of location) that conforms to: International Organization for Standardization (ISO)/IEC Guide 25, "General Requirements for the Competence of Calibration and Testing Laboratories."

3. In demonstrating conformance to requirements for safety and electromagnetic interference, governments would allow suppliers to choose between a supplier's declaration of conformity that conforms to ISO/IEC guide 22, 'General Criteria for Supplier's Declaration of Conformity,' or a third-party certification.

2) From Staff Research Study 23 Office of Industries U.S. International Trade Commission GLOBAL ASSESSMENT OF STANDARDS BARRIERS TO TRADE IN THE INFORMATION TECHNOLOGY INDUSTRY November 1998 Publication 3141

A number of IT industry experts, regulators, and trade officials assert that several lessons were learned from the U.S.-EU MRA. First, the MRA may

have been too broad, covering too many sectors and issues, which made it very time consuming and expensive to complete. Secondly, less regulated IT industry sectors, such as the computer sector, are now subsumed under a comprehensive MRA which presupposes regulatory structures in the United States and the EU. A third problem with the U.S.-EU MRA is its bilateral nature, limiting opportunities for other countries to participate in the agreement. Therefore, while expanding trade opportunities among the United States and EU countries, the MRA may impede trade with non-participants. This does not take into account the global nature of the IT industry whereby different stages of the IT production process occur in different locations worldwide. On the other hand, strong supporters of the U.S.-EU MRA point out that the European Commission has completed similar MRAs with Australia and Canada and plans to negotiate similar MRAs with a number of other trading partners. However, according to some trade experts, excluding Asia from the MRA, or completing a separate MRA with individual countries, will add to the complexity and cost of the production process.

More recently, APEC trade ministers concluded a sectorally based mutual recognition arrangement (MRA) covering testing and certification of telecommunications and other IT equipment attached to networks. Under terms of the APEC MRA, IT manufacturers will be able to have their products tested in the country where they are manufactured, then offer them for sale in any country covered by the MRA without further testing. Products included in the arrangement are all telecommunications and other IT equipment subject to telecommunication regulations, including wireline and wireless, terrestrial, and satellite equipment. This could include computers, telephones, modems, transmitters, and software

The purpose of the MRA is to streamline the conformity assessment procedures for a wide range of telecommunications and other related IT equipment and thereby facilitate trade among the participating parties. Proponents of the APEC Telecom MRA suggest it has benefited significantly from lessons learned from the U.S.-EU negotiations that took almost four years to complete. For example, the APEC MRA was completed on a sectoral rather than on a multisectoral basis. U.S. trade negotiators and regulators found during the U.S.-EU negotiations that the sheer complexity of such a multisectoral agreement involving diverse sectors and issues required extensive technical and regulatory expertise that delayed final agreement considerably. By focusing its efforts on the technical regulation of equipment affecting telecommunications networks in the APEC MRA, regulatory, trade, and IT industry officials in APEC economies were able to more effectively coordinate their activities in an efficient and timely manner.

3) From Recommendations from FCC Report on International Experience June, 1998 Prepared by Working Group representatives from the U.S. Federal Communications Commission available at <http://www.fcc.gov/ib/td/md/nis/welcome.html>

The coordinated endeavors of industry and government have led to improvements in certification processes, a growing reliance on manufacturer testing and Declarations of Conformity, the development of mutual recognition arrangements on testing and certification, and efforts to harmonize technical requirements where feasible.

Improvements to certification processes include: increased access to information needed by applicants to clearly understand technical requirements and procedures; expedited certification procedures that bring technologies quickly to market; reasonable and predictable costs, including testing costs, provided in part by giving manufacturers the ability to conduct their own testing or to choose among several testing laboratories; consistent conformity assessment procedures that allow manufacturers to make reasonably certain business plans; automatic prolongation of certifications except where product changes affect technical compliance; and adoption of practical certification rules that provide incentives for compliance.

Manufacturer test results currently are permitted for conformity assessment purposes in many regions. For example, the U.S. Federal Communications Commission accepts test results from manufacturers' laboratories. Of the more than 500 laboratories from around the world that perform tests on telecommunications products and radio transmitters to determine compliance with U.S. FCC technical standards, approximately one-half are manufacturers' laboratories. The European Union also provides for acceptance of manufacturer test results for certain of its directives, such as the Electromagnetic Compatibility (EMC) Directive. In Japan, compliance with EMC requirements is voluntary and is based entirely upon manufacturer testing.

Manufacturer Declarations of Conformity are currently in use in the United States and the EU. The manufacturer declares conformity of its equipment with obligatory technical requirements. A Declaration of Conformity permit the manufacturer to "approve" its equipment. There is no requirement for a national authority or third-party laboratory to issue a certification.

Mutual recognition arrangements formalize international cooperation on testing and certification of telecommunications equipment. Under an MRA, a laboratory in one country may test the product to the technical requirements that apply in the second country. Or, an MRA that extends to all aspects of conformity assessment allows certification in one country to the policies or procedures of a second country. The EU member states, and Belarus and Russia, currently have formal mechanisms for international cooperation.

Harmonization of technical requirements, on a bilateral or multilateral basis, allows a manufacturer to test to one set of technical requirements for sale and distribution of telecommunications products in more than one destination country.

These cooperative endeavors demonstrate the new international dimension to testing and product approvals for telecommunications equipment. Improved certification procedures, reliance on manufacturer self-testing and Declarations of Conformity, the mutual recognition of test results and product approvals, and the harmonization of technical requirements help to facilitate trade and investment in the economies of the participating countries.

- 4) From observations of APEC MRA Implementation project Stage I and Stage 2 Reports undertaken by Australian Telecommunications Industry Association (ATIA) Communications Industry Association of Japan (CIAJ) and Telecommunications Industry Association (TIA) USA further information at <http://www2.apii.or.kr/telwg/mraTG/mratf03.html>**

Observations from Stage I report

Changes to the regulatory environment

The major, and most obvious, impediment to the implementation of the MRA are the legislative or administrative amendments that many economies need to make in order to recognise overseas testing laboratories. Economies that require extensive changes to legislation or administrative arrangements have set sensible target dates for the implementation of the MRA. The fact that these economies are not yet able to participate need not delay other economies from implementing the MRA. The benefits to be gained by implementing the MRA, both as an importer and exporter, should act as an incentive for economies to make changes where necessary.

The most common amendment that needs to be made is to the designation procedures, with ten economies indicating, so far, that this would be necessary. In some of these economies, this will only effect the implementation of Phase II of the MRA, and only four economies indicated that they would need to change laboratory accreditation rules. However, ten economies have indicated that they would need to change either primary legislation and/or technical regulations. These changes are likely to take some time to implement.

The variety of regulatory procedures

In addition to the legislative and administrative changes that economies must make in order to implement the MRA, to fully realise the MRA's benefits it will also be necessary for there to be greater conformity between economies as to what is meant by Certification and a Declaration of Conformity. While there is a fair degree of similarity within the region, a number of economies have 'extra' requirements, such as mandatory quality assurance, site inspections, requirements for re-testing, or a requirement to submit the Declaration of Conformity to the regulator. To use a well-worn analogy, the

Declaration of Conformity/Certification is the 'tip of the iceberg' in some economies, with a variety of other requirements hidden beneath the surface.

For economies to fully realise the benefits that can be gained from the MRA, it may be necessary for them to consider what is an appropriate degree of regulation, taking into consideration the risk that the regulated equipment poses. Even a brief examination of the regulatory procedures within the APEC region demonstrates that there is a multiplicity of views as to what and how many procedures a piece of equipment, or the equipment supplier, must be subjected to before the equipment is considered safe for use and for connection to the network.

While the MRA does not intend to usurp national authority over equipment requirements, the disparity of requirements may prove to be a barrier to implementation, and if economies wish to take part, there will be a need for compromises to be made. The problems that may result from the range of regulatory procedures utilised throughout the APEC region should be included in the HRD project (see next section) in order to provide regulators with the options that are available for equipment regulation. This information should provide regulators with what they need to ensure that the level of regulation is an appropriate response to the risk posed by equipment.

Observations from Stage 2 Report

The implementation of the MRA presents no insurmountable difficulty for any single economy. It is true that some economies have specific restrictions against recognition of overseas generated conformity assessment data but this is capable of remedy within the timeframe specified by the economies concerned.

However, there are aspects of the MRA implementation that do present quite significant challenges for the APEC organisation and its member economies. To a large extent these complications arise from the difficulties of establishing and maintaining the Arrangement across the APEC economies that are characterised by differences in:

- language and Culture;*
- technical infrastructure;*
- standards; and*
- regulatory systems.*

None of these differences prevent any particular economy from participating in the MRA, but the extent to which these are more or less harmonised between participating economies will affect greatly the ability of APEC economies to maintain a useful and productive arrangement.

The MRA is intended to leave in place the regulatory and standards arrangements of the participating economies. This is a deliberate and intentional strategy. It was also appropriate given the circumstances

of regional diversity under which the MRA work was initiated. However, economies will need to keep an open attitude towards the question of harmonisation as they reach the point of negotiating entry to the MRA

5) From APEC Standards and Conformance Subcommittee Trade Facilitation in Information Technology SCSC Work Program on Trade Facilitation in Information Technology Products 11 October 2000

1. As part of the APEC SCSC Collective Action Plan, APEC members, on a voluntary basis, will positively consider permitting information technology products (specifically, computers and computer peripherals, such as printers, monitors, and storage devices) to be marketed in their economy on the basis of supplier's declaration of conformity, which states that products conform to the economy's technical standards aligned with the safety standard IEC 60950 and the electromagnetic interference (EMI) standard CISPR 22, based on testing in a competent test facility—in short, "One Standard-One Test, Supplier's Declaration of Conformity (1-1SDoC)." Each element of the program is defined in Section 2.

2. The SCSC invites member economies to set, if appropriate, their own timetables for voluntary implementation of each of the six elements of the 1-1SDoC program, presented in the following table:

For those economies that implement "One Standard" : Alignment of the economy's domestic standards for safety and electromagnetic interference of information technology equipment to

IEC 60950 (safety of information technology equipment) and CISPR 22 (electromagnetic emissions from information technology equipment), and acceptance of the aligned standards (or the international standards themselves, if the economy prefers) to meet the economy's regulatory requirements (if any) for computers and computer peripherals.

For those economies that implement "One Test ": Testing will be performed at a test facility, including manufacturer's own facilities and third-party facilities, whose competence and impartiality (as defined in ISO/IEC Guide 25 and/or ISO/IEC 17025) to test to the applicable technical regulations of the importing economy and to assess compliance with applicable mandatory requirements are demonstrated by either accreditation conducted in accordance with ISO/IEC Guide 58 by a member of a peer-to-peer MRA such as the APLAC MRA, and/or participation in the IECEE CB Scheme. If required by law or regulation, the test facility shall be authorized or designated by the importing economy based on the above criteria.

For those economies that implement "Supplier's Declaration of Conformity" : Products may be marketed on the basis of a supplier's declaration of conformity to the economy's technical regulations. The supplier's declaration shall comply with ISO/IEC Guide 22. The supplier shall retain compliance documentation (i.e., description of product, test reports, etc.) providing the

basis for the supplier's declaration and make it readily available to the regulator upon request.

Enforcement of regulatory requirements, as appropriate, will be by means of post-market surveillance.

3. Suggested voluntary time frame for this item in the Collective Action Plan for those economies that choose to work toward implementing 1-1SDoC is 2005 (industrialized economies) / 2008 (developing economies) for electromagnetic interference and safety.

4. Those economies who choose to implement 1-1SdoC are invited to report to SCSC on actions they are taking to achieve the objective on a voluntary basis. Economies may identify specific infrastructure needs and other obstacles they encounter, which may be subjects for technical assistance.

5. In the context of the work of the SCSC, including the Ad Hoc Working Group on Good Regulatory Practice, member economies will review progress on an ongoing basis. The ongoing work may include information sharing and economic and technical cooperation between APEC, regulators, industry (e.g., the Information Technology Industry Council), and Specialist Regional Bodies (SRBs), oriented toward assisting emerging economies with implementation.

This may include, among other activities, sharing information about various legal and regulatory mechanisms for implementing 1-1SDoC; sharing experiences with and results of post-market surveillance; and promoting awareness of available technical resources, such as arrangements for international recognition of competent test facilities.

**6) From TABD WORKING GROUP I: STANDARDS AND REGULATORY POLICY
Improving Regulatory Cooperation thus avoiding Trade Disputes October
2000 Cincinnati**

*Common Regulatory Principles for Information and Communications
Technology Products*

*The TABD recommends that the following practical steps concerning
information and communications technology (ICT) products be implemented
as soon as possible.*

- The FCC should increase reliance on Supplier's Declaration of Conformity for electromagnetic compatibility and telecommunications requirements for ICT products. The FCC should accept Supplier's Declaration of Conformity for all telephone terminal equipment attachment (covered in FCC rules Part 68). The FCC should begin development of rules allowing Supplier's Declaration for radio transmitters (covered in several parts of the FCC rules).*
- OSHA should permit employers to accept, for ICT equipment in the workplace, a Supplier's Declaration of Conformity as sufficient evidence*

of compliance to the applicable safety standard (UL 1950 or IEC 60950) as an alternative to certification by a Nationally Recognized Testing Laboratory (NRTL). Alternatively, OSHA should exempt certain ICT products, based on their safety track record, from 1910 Sub Part S of the OSHA regulations.

- *The U.S. and EU governments should accelerate their move toward internationally recognized consensus standards in all procurement and regulatory activities. In particular:
 - (a) *the EU and Member States should consider permitting international standards to be cited in the Official Journal of the European Communities as providing presumption of conformity with EU Directives;*
 - (b) *the FCC should implement telecommunications terminal equipment (Part 68) regulations based on agreed essential requirements, relying on consensus standards for the technical specifications; and*
 - (c) *OSHA should allow for NRTLs to assess ICT products against the international ICT safety standard, IEC 60950, as an optional alternative to the U.S. ICT safety standard, where this does not compromise safety.**
- *The TABD encourages discussion of Supplier's Declaration of Conformity for safety and electromagnetic compatibility in the ongoing work program under the WTO Information Technology Agreement.*

7) From Resolutions from the Sixth plenary meeting of the Industry Cooperation for Standards and Conformity Assessment June, 2000

ICSCA Resolution 27, Work at UN/ECE WP 6

ICSCA VI welcomes the report on the presentation of the GMS Concept to UN/ECE WP.6 and their work on "AN INTERNATIONAL MODEL FOR IMPLEMENTING GOOD REGULATORY PRACTICE FOR THE PREPARATION, ADOPTION AND APPLICATION OF TECHNICAL REGULATIONS VIA THE USE OF INTERNATIONAL STANDARDS". ICSCA VI supports these developments and encourages an even more intensive co-operation with UN/ECE WP.6. ICSCA VI asks the Co-Chairs to foster and follow the relevant contacts.

8) From UN/ECE proposal AN INTERNATIONAL MODEL FOR IMPLEMENTING GOOD REGULATORY PRACTICE FOR THE PREPARATION, ADOPTION AND APPLICATION OF TECHNICAL REGULATIONS VIA THE USE OF INTERNATIONAL STANDARDS

The “International Model” addresses the steps to be followed when harmonization of technical regulations is favoured by a number of countries. The nature of such harmonization might be limited to the definition of “Common Regulatory Objectives” (CROs). Such objectives will address legitimate concerns of governments relating to public health, safety or the protection of the environment ... The CROs would be transposed into technical regulations at national level by those countries who agreed on them. For demonstration of compliance with CROs a possible means could be recourse to international standards . It is proposed that the CROs could either be linked to existing international standards or that a call could be made for the development of new ones.

A distinction should be made between the specifications applicable to products, as such, and the conformity assessment requirements to be used to ensure that the products placed on the market conform to the characteristics required. The “International Model” covers both these issues. The need for harmonization of TRs might be identified by one of the following “trigger” mechanisms:

- (a) By specialists from a particular sector/industry and raised in national, regional or international fora;*
- (b) In studies specially commissioned by governments, international organizations, business groups, non-governmental organizations (NGOs);*
- (c) Through initiatives by one or more particular countries to harmonize their TRs at an international level;*
- (d) Through “complaint-based” initiatives when a country is responding to complaints from foreign or national business operators concerning its TR regime;*

When it concerns new or revised TRs, the existing notification procedures under the WTO/TBT Agreement requires proposed technical regulations/conformity assessment procedures to be systematically notified. This might be regarded as a “trigger” mechanism to examine the need for a TR. If this need is recognized by other countries they might be willing to state their interest in having that TR internationally harmonized. The CRO should contain requirements related to how conformity with its terms is to be assured and demonstrated. Whenever possible, the preferred means of assuming compliance should be through Supplier’s Declaration of Conformity (SDoC). However, in other cases, particularly when safety and health are important, the countries agreeing on a CRO may find it necessary to make recourse to more stringent conformity assurance procedures. In either case - either where the SDoC is considered sufficient, or where a more stringent procedure is required, the procedures should be specified in the CRO. If a third party assessment is deemed necessary, the CRO should state that compliance be assessed and attested by a “Recognised Conformity Assessment Body” (RCAB).

Products within the scope of a CRO would carry some means (e.g. a SDoC or a certificate of conformity) demonstrating either that the supplier claims the conformity with the CRO or that conformity has been assessed and

attested by a RCAB. In either case documented evidence should be provided with the product. The nature of such evidence should be specified in the CRO. All claims of compliance must include the registration number allocated by the United Nations (UN/ECE Commission) for the applicable CRO.

Countries having agreed on CROs remain responsible for market surveillance on their territory. If a country finds products claiming conformity with a CRO that do not actually conform with its requirements, they may, with the intention to preserve public health and safety or other legitimate objectives, take action to withdraw such a product from their market. However, use of such a "Protection Clause" (PC) should be subject to a condition that the country using it should state, to the United Nations (UN/ECE Commission), specifically what products have been removed from the market and what requirements of the CRO have been claimed to be met but have not been met.

9) From Resolutions from the Sixth plenary meeting of the Industry Cooperation for Standards and Conformity Assessment June, 2000

ICSCA VI Resolution 24, EICTA, Global Conformity Assessment System, in the area of Telecom, IT, and Consumer Electronics

ICSCA VI recommends that governments develop and support a Conformity Assessment Agreement (CAA) for the Electrical, Electronics, Communications and Information Technology Sectors, on the use of Supplier's Declaration of Conformity (SDoC), as further described in the EICTA Green Paper on a "Global Conformity Assessment System for the Future" which is supported by:

<i>EICTA</i>	<i>European Information and Communications Technology Industry Association</i>
<i>EACEM</i>	<i>European Association of Consumer Electronics Manufacturers</i>
<i>ITI</i>	<i>Information Technology Industry Council (USA)</i>
<i>TIA</i>	<i>Telecommunications Industry Association (USA)</i>
<i>ITAC</i>	<i>Information Technology Association of Canada</i>
<i>CIAJ</i>	<i>Communications Industry Association of Japan</i>
<i>AEEMA</i>	<i>Australian Electrical and Electronic Manufacturers' Association</i>
<i>ATIA</i>	<i>Australian Telecommunications Industry Association</i>

10) From Global Product Conformity Assessment System GPCAS Edition 2, – 30 June 2000 EICTA/IPC 00-027r1 10

Annex A Proposal for a Conformity Assessment Agreement for regulatory requirements of the ICT Sector

A.1 Introduction

Following the completion of the WTO Information Technology Agreement (ITA) on the abolition of tariffs on Information Technology products, there now comes the time to look for further reduction of non-tariff barriers related to the trade in goods, specifically regarding Information and Communications Technology (ICT) products.

A number of non-tariff measures exist which should be addressed, as concluded by the TABD Berlin conference 29-30 October 1999, . Global agreement on the use of Supplier's Declaration of Conformity (SDoC) as the general means to show compliance to standards, be they regulatory or voluntary is requested. The TABD documents also call for the use of international (global) standards.

In the course of the negotiations of the MRAs between the US and EU it has become apparent that the regions are using similar but not fully identical regulatory systems and standards. The goal appears to be the same, namely to safeguard public interests. The MRAs themselves do not address simplifications. They will however point to unnecessary costs for suppliers in bringing their products onto the market - costs that eventually will be passed on to the final user. International agreements like the WTO ITA process can be instrumental in bringing down such costs.

Clause A.2 below proposes a Conformity Assessment Agreement (CAA) for the EETIS sector 11 on the general use of SDoC. The CAA needs to include Market Surveillance, because this is a necessary complement to the SDoC. Use of global standards is in most cases subject to the regional and national standardisation bodies accepting such standards for their own needs. The signatories of a "Conformity Assessment Agreement" should be able to influence their respective national standards bodies to adopt international standards wherever possible.

A.2 Definitions of the Conformity Assessment Agreement (CAA) for regulatory Requirements When making the investigation about the possibility of achieving a CAA for regulatory requirements, it is important that all parties involved are in agreement on the definitions of CAA, SDoC and Market Surveillance. In Europe the Council Decision on a Global Approach to Testing and Certification (93/465/EEC) lists a number of ways - modules A to H - to show compliance to New Approach (Council Resolution 85/C136/EEC) directives 12 . In all of these cases the supplier must prepare a written Declaration of Conformity. This means that even for the case where there is a strong mandatory third party intervention, there will also be an SDoC.

One of the modules, module A, does not require any intervention by a third party. The supplier declares under his sole responsibility that the product meets all the essential requirements that apply to it, prepares the Declaration of Conformity and signs it, thus assuming responsibility for the compliance of the product with the given Directive. In the New Approach Directives there is always an a posteriori Market Surveillance mechanism, complementing the a priori conformity assessment procedure.

In the TABD documents the expression "SDoC" has been used in a de facto way as meaning Module A of the Global Approach, i.e., no mandatory intervention by a third party. It is therefore proposed that the definition of the CAA includes this element. Definition of Market Surveillance is based on its use in EU Directives. Further guidance and definitions are given in IEC Guide 22.

Supplier's Declaration of Conformity (SDoC): Procedure by which a supplier gives written assurance that a product, process or service conforms to specified requirements. NOTE: The supplier is the party that supplies the product, process or service and may be the manufacturer, distributor, importer, assembler, service organisation etc.

Market Surveillance: Surveillance by a National Authority that products brought onto the marketplace and/or taken into service comply with relevant regulatory requirements. Where it is found that this is not the case, appropriate measures may be taken (such as withdrawal of the product from the market).

Conformity Assessment Agreement (CAA): An agreement on the use of the following conformity assessment procedure:

1. The Supplier

- a. ensures by way of technical documentation (which may include design calculations, test reports, etc. as appropriate) that the product (or the relevant part thereof) complies with the requirements in one or more legal (or voluntary) measure that are applicable to it, such as a Directive or Rule;*
- b. prepares a written Declaration of Conformity (SDoC);*
- c. takes all measures necessary in order that the manufacturing process ensures compliance of the manufactured product with the technical documentation. There is no mandatory involvement of a third party in these processes.*

2. The National Authority operates a Market Surveillance mechanism.

11) Excerpts From Global Product Conformity Assessment System GPCAS Edition 2, – 30 June 2000 EICTA/IPC 00-027r1 10

3.5 Ways to compliance

One can envisage a number of different approaches to a future global system for product conformity assessment. The different approaches need to be scrutinised regarding their merits and drawbacks.

3.5.1 No sectoral regulation at all

A well functioning horizontal regulation could eliminate the need for sectoral regulation. Such horizontal regulation would ensure public interests and fair competition.

3.5.2 National Type Approval

Type approval is associated with costs and delays in product introduction. The delays are often considerable due to the fact that manufacturers need to assist the type approval body with equipment and expertise in the equipment to be tested, which means that type approval will have to be performed country by country rather than testing in all countries at once. This is particularly the case for SMEs, where there is a limited number of staff with expertise available for these tasks. As a result small markets become unattractive for many suppliers. This will deprive users in these markets of innovative products. The consequences are obvious: large markets will function (longer) but small markets will only see illegal or very old products on their market.

3.5.3 Global Type Approval

A global type approval system needs co-operation between countries. All countries (democratic and non-democratic, developed and less developed) should be members with equal rights and obligations. All countries have to create confidence-building authorities to allow for accreditation and notifications that are accepted globally. At a first glance a system like this could look attractive but in reality it will be too slow in supporting the fast development of innovative products. The cost will be enormous and only a few players will afford its implementation.

3.5.4 Alternative approach - safe installation

An alternative approach to "safety of products" as discussed in the subclauses above is the concept of safe installations (safety at workplace). This can be used at a local level, but can hardly be used for a global product conformity assessment. This is a kind of indirect product safety regulation that require a supporting local authority assessment system. Such a system cannot be expected to be found in many countries.

3.5.5 Supplier's Declaration of Conformity without mandatory third party involvement

A system based on the use of Supplier's Declaration of Conformity (SDoC) relies on the fact that National Authorities define the regulatory framework for safeguarding the public interests. The supplier can then decide how to show compliance to such regulation. However, this has to be done in such a way that all players have full confidence in the complete process. Failure in the introduction of the SDoC system will definitely stop these developments for a very long period. Therefore a well functioning Market Surveillance system is a prerequisite. It is also desirable that a legal system that addresses consumer protection and liability is in place. Ideally these laws should be applied horizontally.

Considering all the pros and cons of the alternative solutions mentioned above it is strongly recommended to agree on the alternative with SDoC without mandatory third party intervention as the future system for showing compliance to regulation.

3.9 Market surveillance

Regardless of conformity assessment system used to show compliance to its regulation, a country has to maintain a market surveillance system due to two reasons:

Illegal and unsafe products should not be allowed to be put on and remain on the market.

Fair market conditions should prevail. Suppliers which follow the rules and bear the administrative costs and delays due to regulations should not be disadvantaged compared to those who do not comply with the rules.

Since market surveillance is needed in all cases regardless of whether there is a third party intervention or not in the conformity assessment process (note that there will always be those who do not follow the rules), there are no or very little extra costs associated with the use of "SDoC without any third party intervention". It is rather a question of making the results from market surveillance publicly available thus raising the awareness of suppliers and users. Market forces when allowed to function properly ensure that users get the best value for money.

12) From TRADE/WP.6/2000/20 Report of January 2001 ECONOMIC COMMISSION FOR EUROPE COMMITTEE FOR TRADE, INDUSTRY AND ENTERPRISE DEVELOPMENT Working Party on Technical Harmonization and Standardization Policies Tenth session, 6-8 November 2000

REPORT OF THE TENTH SESSION HIGHLIGHTS OF THE SESSION

The tenth jubilee session commemorated the thirtieth anniversary of the beginning of UN/ECE activities related to standardization policies and technical harmonization matters. An International Workshop on the Role of International Standards and Technical Regulations in International Trade was organized in conjunction with the session. The Workshop brought together representatives of international and regional standardizing organizations, national standards bodies, national regulatory authorities and business people from UN/ECE member States. Participants called for further dialogue on international regulatory cooperation and on promoting, whenever possible, regulatory convergence. The Working Party considered the work of the ad hoc Team of Specialists on Standardization And Regulatory Techniques ("START" Team) and decided to continue work on the "International Model for Technical Harmonization".

The report of the session as well as major documents will be available at the Working Party's website: <http://www.unece.org/trade/stdpol>

Annex II CONCLUSIONS OF THE WORKSHOP ON THE ROLE OF INTERNATIONAL STANDARDS AND TECHNICAL REGULATIONS IN INTERNATIONAL TRADE

Recognizing,

that differences in standards, technical regulations and conformity assessment procedures constitute one of the major obstacles to international trade at present;

that the legitimate concerns of Governments and regulatory authorities may necessitate technical regulations at different levels for different sectors/product areas;

that existing work on international technical harmonization in international and regional intergovernmental forums has not yet been fully utilized with regard to the elimination of technical barriers to trade and facilitating market access;

that according to industry, successful implementation and application of Government-to-Government Mutual Recognition Agreements (MRAs) has been hampered by a lack of technical harmonization;

Welcomed:

the initiative of the UN/ECE Working Party on Technical Harmonization and Standardization Policies to explore how technical regulations could make wider use of international standards;

the submitted draft "Model" for harmonization of technical regulations via the use of international standards as a good starting point for further dialogue on international regulatory cooperation and on promoting, whenever possible, regulatory convergence;

Calls on UN/ECE Governments and international organizations:

to show their commitment to the facilitation of international trade by wider participation in international regulatory cooperation and international standardization and effective implementation of the results;

to encourage effective coordination and cooperation between Governments and regulatory authorities and economic operators, and different international organizations and intergovernmental forums and to follow up on practical proposals on regulatory cooperation, in particular sectors/product areas;

to involve, where appropriate, private-sector representatives in such activities thus promoting a public-private partnership approach.

13) DeclareNet

DeclareNet is a business-to-government (B2G) e-service for (1) an internet community between government regulators and manufacturers, (2) a product compliance information exchange, and (3) a regulatory technical infrastructure for post-market surveillance. General information is available at www.declarenet.com

DeclareNet customers are regulators and product manufacturers. Our services are global, scalable and modular. Our initial focus is the IT sector, with plans to expand to other industry sectors such as telecommunication products and consumer products. Our vision is an open, global IT market where a country's product regulations are based on the principle of "design once" to international standards, "tested once" in a competent laboratory, and demonstrated conformance by a "supplier's declaration of conformity (SDoC)." This principle is embodied by the IT industry sector's global vision called "One Standard-One Test, Supplier's Declaration of Conformity (1-1SDoC)."

Our mission is to eliminate the need for pre-market testing and certification requirements that add cost and act as barriers to trade. Our strategy is to use DeclareNet as a catalyst for global regulatory reform to 1-1SDoC, by helping manufacturers and regulators bring safe, legal, and compliant IT products to market fast, at an order of magnitude increase in operational efficiency. We do this so that our customers will have more choice and access of new, enabling technology to enrich their lives and their communities in the new economy

In October 2000 this effort gained official standing for the first time by APEC providing a grant to conduct beta-testing of DeclareNet with 10 APEC economies. Next steps call for further engagement with APEC economies, the European Commission, the U.S., and other countries.

14) Excerpts from Press release on MRA Management System (MRAMS) at <http://www.colonypark.com/colonypark/colonypark.nsf/d652f85b40da5d22ca25696e002cef88/fd5cc5daef29e6084a25696e00266aa2?OpenDocument>

See also www.mrams.com

Excerpts Press Release - For Immediate Release - 04 October 2000 APEC uses the internet to break down trade barriers

An Asia-Pacific based info-communications consultancy headquartered in Australia, The Colony Park Group, has signed a landmark agreement with the Asia Pacific Economic Cooperation (APEC). They are providing a communications portal to implement an Arrangement that APEC Telecommunications and Information Industry Ministers declared their endorsement for in 1998 in Singapore.

The APEC Mutual Recognition Arrangement for Conformity Assessment of Telecommunications Equipment (MRA), when fully implemented, will harmonise the testing and approval procedures used in 20 out of 21 APEC economies. This ground-breaking arrangement will remove a significant barrier to what is projected to be a US\$60 billion industry by 2010.

The Mutual Recognition Arrangement Management System (MRAMS) will mark the first time information technology will be used to significantly address the issues implementing an international agreement.

MRAMS is a state-of-the-art hosted application developed using Lotus Notes/Domino and deployed in conjunction with Interliant, Inc., a leading global application service provider. It manages the complex notification procedures that are required between testing labs, industry and governments and provides secure communications, knowledge management, distance learning and document library capabilities.

"The APEC MRA will remove a significant inhibitor to the movement of telecommunication equipment in the APEC region. This equipment will form the backbone of the New Economy and any harmonisation of the conformity testing process can only aid the roots of the New Economy taking hold in the region.

I view MRAMS as the solution that will speed the process of full and easy implementation of the MRA, which because of the complicated cross-reporting requirements, is technically difficult to implement."

"We hope that Industry will get behind the effort made by the APEC Economies to reduce cost- and time-to-market by supporting the deployment of this site by sponsoring it."

MRAMS will operate as a neutrally hosted, not-for-profit system and is being funded through corporate sponsorships.

15) From Australia presentation on Market Surveillance at APEC Standards and Conformance Sub-committee conference on market surveillance September 2000

Summary

- *Market surveillance is a necessary condition to ensure legitimate regulatory outcomes regardless of the type of regulation being applied.*
- *An effective market surveillance system can overcome deficiencies in type test approvals and provide support for regulatory change*
- *Market surveillance is not an added cost to government to compensate for SDOC*
- *Costs should be viewed against the benefits for the whole economy, especially when supporting regulatory initiatives such as suppliers declaration*
- *Some costs can be shifted to guilty parties*
- *Market surveillance must include communication as part of its strategy*
- *Market surveillance must be backed by technical competence*
- *There may be considerable gains from co-operation through electronic technologies.*
- *SDoC is an option to demonstrate compliance.*

16) Excerpts from REPORT AND ORDER FCC 00-400 In the Matter of 2000 Biennial Regulatory Review of Part 68 of the Commission's Rules and Regulations Adopted: November 9, 2000 Released: December 21, 2000

... In this Order, we completely eliminate significant portions of Part 68 of our rules governing the connection of customer premises equipment (terminal equipment) to the public switched telephone network and privatize the standards development and terminal equipment approval processes. By these actions, we minimize or eliminate the role of the government in these processes.

...With regard to equipment approval, we find that manufacturers may show compliance with the technical criteria through one of two means. First, manufacturers may seek approval of terminal equipment's compliance with the relevant technical criteria from private Telecommunications Certification Bodies (TCBs). In the alternative, manufacturers may show compliance through the Supplier's Declaration of Conformity (SDoC) method of equipment approval.

...The streamlined approach outlined in this Order will allow the Commission to replace approximately 130 pages of technical criteria currently in our rules with only a few pages of simple principles that terminal equipment shall not cause any of the prescribed harms to the public switched telephone network, that providers of telecommunications must allow the connection of compliant terminal equipment to their networks, and that the Commission diligently will enforce compliance with these rules.

... The record overwhelmingly demonstrates that, based upon the maturity and competitiveness of the terminal equipment manufacturing market and the telecommunications services industry, it is in the public interest for

private industry to self-regulate conformance of terminal equipment ... Our decision in this Order to privatize the terminal equipment registration process will reduce unnecessary costs and delays currently imposed upon manufacturers and the Commission without measurably increasing the possibility of harm to the network. Thus, upon weighing the substantial benefits of accelerating the terminal equipment approval process against the unlikely possibility of any cost increases associated with harm to the PSTN that may result from a decreased presence of the Commission in the approval process, we conclude that it is no longer in the public interest for the Commission to continue its Part 68 registration functions

...privatization will reduce product approval times and enable manufacturers to bring their products to market at an accelerated pace

...Privatizing the equipment registration process will permit the Commission to focus on enforcement of the industry-established technical criteria for terminal equipment. Furthermore, the Commission shall maintain its role as the forum of last resort for disputes regarding terminal equipment standards and approval procedures.

...In the Notice, we tentatively concluded that a database of all registered terminal equipment should be maintained, regardless of whether the equipment is approved by a TCB or some form of declaration of conformity. We proposed that a private entity assume responsibility for sponsoring and maintaining a database that would replace the Commission's current database of Part 68 registrations. The Commission's database of approximately 30,000 Part 68 registrations contains equipment identification information, applicant identity, and technical information. ... we proposed that entities obtaining equipment approval be required to submit pertinent information regarding their identity and approved equipment to a database administrator. Furthermore, we proposed requiring that the database of approved terminal equipment remain accurate and readily available at a reasonable cost to users.

17) From National Conformity Assessment Schemes Nontariff Trade Barriers in Information Technology November, 1999 Center for Strategic and International Studies, Washington DC. Executive Summary at http://www.csis.org/pubs/ITtrade_wbgexec.html

Developing a Global Approach to Conformity Assessment

Several options for developing a global approach to conformity assessment have been identified during the course of this study. They are

- mutual recognition agreements,*
- unilateral acceptance,*

- *one-stop shopping,*
- *best practices and benchmarking, and*
- *a global framework of principles.*

We believe that the options through which this change may best be implemented are the last two above: best practices and a global framework of principles. These two options should not be seen as mutually exclusive. A global framework of principles could be agreed upon by governments through current Information Technology Agreement (ITA) talks or by modification of the Agreement on Technical Barriers to Trade (TBT). Implementation of those principles could be supported by industry through a best-practices analysis that would provide guidance concerning ways in which conformity requirements can be efficiently met and that would also serve as benchmarks for governments in assessing industry compliance.

To assist regulators in verifying information set forth in conformity declarations, particularly during the conduct of a compliance review, company-maintained databases or Internet Web sites should be encouraged. Third-party certifiers should be required to file test data based on a common format that could support elimination of separate certification. Eventually regulators and custom officials should accept electronic filing of declarations to facilitate market entry and to minimize variations in information disclosures.

18) From a) description of IECEE CB SCHEME THE CONCEPT at www.iecee.org/cbscheme; b) personal communications with IEC secretary General Roni Amit; and c) correspondence related to the "Compulsory Safety Scheme for electrical and electronic Apparatus" in South Africa described further at <http://www.sabs.co.za/138.html>

a) The IECEE CB Scheme is the world's first truly international system for acceptance of test reports dealing with the safety of electrical and electronic products. It is a multilateral agreement among participating countries and certification organizations. A manufacturer utilizing a CB test report issued by one of these organizations can obtain national product certification in all other member countries of the CB Scheme. The Scheme is based on the use of international (IEC) Standards. If some members' national standards are not yet completely harmonized with IEC Standards, national differences are permitted if clearly declared to all other members. The CB Scheme utilizes CB Test Certificates to attest that product samples have successfully passed the appropriate tests and are in compliance with the requirements of the relevant IEC Standard and with the declared national differences of various member countries. The main objective of the Scheme, is to

facilitate trade by promoting harmonization of the national standards with international Standards and cooperation among product certifiers worldwide in order to bring product manufacturers a step closer to the ideal concept of "one product, one test, one mark'.

b) From: "Aharon Amit" <ra@iec.ch>
To: <gtw@gtwassociates.com>
Sent: Monday, January 29, 2001 3:22 AM
Subject: Re: requests

The IECEE CB scheme is looking into offering services in the telecom area , no decision on this issue as of today. The market need was identified , I hope to see some action in the near future, when properly reviewed.

Regards

Ronnie

c) *The Compulsory Safety Scheme for electrical and electronic Apparatus" (Government Gazette) No. 17548, Notice R1792 , dated 1996-11-08. is the conformity assessment system applicable in South Africa. South Africa requires mandatory product testing. Test reports from recognized labs are compulsory. BUT they accept labs:*

- o *participating in the IECEE CB scheme or* being accredited by an EA member (European. Accreditation)*

If the last bullet is "internationalized" to "accredited by an ILAC MLA member", wouldn't that be an even better model than IECEE CB, because it does not add the formal act of certification but relies on the technical fundament of competent testing? And also manufacturers' labs may be accredited

19 Excerpts from IEC New Work ITEM proposal 106/8/NP and Report to the Committee of Action following the first meeting of TC 106, "Methods for the assessment of electric, magnetic and electromagnetic fields associated with human exposure", held in Montréal, Canada, on October 11 and 12, 2000.

....The usage of handheld transmitters, in particular cellular phones, result in one of the most significant electromagnetic exposures of the public in terms of locally induced electrical field strengths. Compliance with international and national recommended safety limits are not intrinsically ensured...

... Several approaches (human modeling, instrumentation and procedures) for compliance testing with SAR limits have been proposed by different organizations such as FCC96-326, ES 590005, ARIB STD T56. Other bodies such as IEEE SCC34, WGMBS of CENELEC TC211, Joints Standards Australia/new Zealand Committee TE/7, Health Canada are currently drafting recommendations. Nevertheless a new IEC work is justified due to the fact that mobile communication is a worldwide market. A methodology enabling the evaluation of wireless communication devices for all markets would be greatly beneficial for the industry as well as for consumers. In addition, this proposal suggests addressing compliance for the entire range of handheld and body-mounted transmitters, whereas the above mentioned recommendations exclusively concentrate on cellular phones when next to the ear.

...The scope of TC 106 covers a very large frequency spectrum (0 Hz to 300 GHz). It is convenient to divide this spectrum in two frequency ranges corresponding to two very different business environments. The low frequency range covers transmission and distribution networks, domestic and industrial equipments, railways, etc. The high frequency range comprises wireless communication devices, broadcast emitters, radars, etc. There is an increasing worldwide concern about the effects of electromagnetic fields (EMF) on the health of exposed persons, either in the general public or workers under occupational conditions. The public is mainly concerned by two technologies: electric power transmission and distribution line and mobile telephone.

...TC 106 will not deal with biological/medical investigation or with the specification of exposure limits. Other organisations like ICNIRP and IEEE have already published exposure limits and will continue to evaluate the scientific literature for this purpose. The work of TC 106 will focus on measurement and calculation methods to assess human exposure to electromagnetic fields.

...The use of mobile telephone and similar wireless technologies is increasing rapidly throughout the world and new products are marketed at a high rate. There is an urgent need for an international standard for the measurement of specific absorption rate (SAR) from mobile telephones and for the characterization of human exposure around wireless base-stations (where much of the public concern is directed). Two countries (USA and GB) are now indicating SAR on the package of mobile telephones.

There are a few similar standards now under development by CENELEC and IEEE but the emphasis of both groups is to develop uniform national standards that will have worldwide acceptance. Members of committees within both organisations are represented on

many of the participating national committees of TC106, which should ensure that forthcoming standards will be in harmony.

20) Excerpts From Remarks by Dale N. Hatfield, Federal Communications Commission at ICSCA V Industry Cooperation on Standards and Conformity Assessment October, 1999 Telecommunications Access: Implementing a Mandate

... I recognize that the field of access engineering is relative new and immature. In the U.S. at least -- and I suspect here in Europe -- there does not exist today a well-defined body of practitioners in the field. New alignments are needed to bring the core disciplines together and to develop their lines of communications and means of cooperation in this area. So far I have spoken almost exclusively about our efforts in the United States to ensure that telecommunications services and equipment are accessible by persons with disabilities. However, I recognize that there are parallel efforts underway here in Europe and in other parts of the world. Earlier this year I recall reading the European Commission Report entitled "Ensuring Access for All." More recently, I had the opportunity to read the EC DG XXIV draft entitled "Mandate to European Standards Bodies for a Guidance Document in the Field of Safety and Usability of Products by People with Special Needs." In these documents I see many of the same issues and concerns regarding accessibility and usability being raised. I see similar principles being set forth in terms in inclusiveness and social integration and the desire to have products and services designed so that they do not discriminate against persons with disabilities. I see similar notions of "universal design" and "design for all." I see the same striving to find optimal solutions that we are going through in the United States.

...This similarity in purpose and desire to find optimal solutions brings me to my final point. As William Kennard, Chairman of the FCC, indicated in a letter to you in advance of your Fourth Annual Meeting, telecommunications technology promises to allow us to communicate anytime, anyplace, and in any mode -- voice, data, image, video, or multimedia. Properly harnessed, this technology creates a potent platform upon which to serve the needs of all of our citizens, including those with disabilities. It creates new and expanded opportunities for accessibility, usability and, hence, inclusiveness. But resources are scarce and, as I indicated earlier, these developments are proceeding on "Internet time." Because of these challenges, no single person, no single company, no single piece of legislation, no single set of implementing regulations, and no single country can do it all alone. We must work cooperatively if our common goal of increased accessibility and usability are to be achieved.

...First, all parties -- all stakeholders -- are clearly served by the international harmonization of these efforts. Consumers and industry alike

would benefit from internationally accepted solutions for the various access barriers. Helping guide the international harmonization of this effort is a ripe area for involvement by an organization such as ICSCA.

...Second, there are many very important standards-making efforts underway in this arena. However, it is my understanding that there exists no single coordination point or international clearinghouse for information on these efforts. Ideally, there would be such a point involving industry, consumers, and assistive technologists and members of other related disciplines. Once again this appears to be a vital task waiting to be addressed.

20) Excerpts from WTO Agreement on Technical Barriers to Trade at http://www.wto.org/english/docs_e/legal_e/final_e.htm

5.1.1 conformity assessment procedures are prepared, adopted and applied so as to grant access for suppliers of like products originating in the territories of other Members under conditions no less favourable than those accorded to suppliers of like products of national origin or originating in any other country, in a comparable situation; access entails suppliers' right to an assessment of conformity under the rules of the procedure, including, when foreseen by this procedure, the possibility to have conformity assessment activities undertaken at the site of facilities and to receive the mark of the system;

5.1.2 conformity assessment procedures are not prepared, adopted or applied with a view to or with the effect of creating unnecessary obstacles to international trade. This means, inter alia, that conformity assessment procedures shall not be more strict or be applied more strictly than is necessary to give the importing Member adequate confidence that products conform with the applicable technical regulations or standards, taking account of the risks non-conformity would create.

V Tentative Findings and Recommendations

Based on review and assessment of the data collected during this project and summarized in the preceding chapters I on Scope of Product Coverage; II on Technical Regulatory Inventory; III on Costs of Regulations & Savings from Reform Measures; and IV Survey of Recommendations and Positions by Informed Parties...

GTW reaches the tentative Findings and Recommendations below:

- 1) **The Telecommunications ITA definitional scope of the effort could be expanded to include Information and Communications Technology products** with small impact on the complexity of the effort and major benefits to industry sectors not presently included but within the scope of the WTO ITA Committee work programme Initiated November 13, 2000 on non-tariff measures
http://www.wto.org/wto/english/news_e/pres00_e/pr198_e.htm
- 2) **Costs of meeting technical regulations and related standards in the global telecommunications market are hard to quantify but are significant. There exists significant potential costs savings to governments; industry and consumers though any number of reform measures** that reduce unnecessary differences in technical regulations in various markets and ease the burdens of multiple tests and certifications even to the same standard in different markets. Economic savings accrue not only from the elimination of duplicative activities, but significantly in reductions in time to market for new products that need not meet different and potentially conflicting standards
- 3) Many government; academic and industry groups have labored on this issue. **There are major common themes among the variety of groups' efforts, results and plans.** There also exist many strong "best practice" examples implementing these themes. At the same time **there are significant opportunities to extend these best practice examples** to issues at hand.
 - a. **Mutual Recognition Agreements where one country agrees to accept the results of another country's conformity assessments to the first country's technical requirements offer one means** of advancing International Co-operation and Reduction of Trade Barriers arising from Technical Requirements and Conformity Assessment procedures in the Telecommunications Sector But MRAs are resource intensive in creation in time and professional effort. In the case of the US/EU MRA applicable to EMC and Telecommunications, some **industry representatives contend the best outcome of the MRA was not the MRA text itself, but the regulatory reform that occurred** for the RTTE in Europe and FCC part 68 requirements in the USA. In the case of the APEC MRA significant Implementation

hurdles remain...e.g. ...*For economies to fully realize the benefits that can be gained from the MRA, it may be necessary for them to consider what is an appropriate degree of regulation, taking into consideration the risk that the regulated equipment poses*

FCC's recent revision of Part 68 requirements offers a **best practice model** in this regard. FCC revised its previous mandatory requirement for a third party certification to provide the **opportunity of market choice between a third party certification and supplier Declaration of Conformity as the supplier may elect**. The action **frees up FCC resources for enforcement efforts** and preserves the important expert role for the testing and certification community when called for.

Another **best practice model is the APEC SCSC Collective Action Plan**, Whereby APEC members acting on a voluntary basis will consider **permitting information technology products** (specifically, computers and computer peripherals, such as printers, monitors, and storage devices) to be marketed in their economy **on the basis of supplier's declaration of conformity**.

Two **final best practice models** for consideration are the **IEC CB scheme which might facilitate the global acceptance of tests and certifications** to telecommunications standards and the **South African regulatory model** where by compliance **certifications are accepted from any laboratory within the IEC CB scheme or accredited by EA** (if such model could be extended to a global counter part of EA such as ILAC).

In all instances, regulatory systems and **reform measures should contemplate the TBT obligations of "national treatment"** not only with respect to the products subject to regulation...but also **with respect to the testing and certification services** that the regulatory system recognized or invokes.

- b. To assist industry; regulators and consumers in verifying information set forth in conformity declarations and certifications **global databases or Internet Web sites should be encouraged**. Initiatives underway that could serve as "**best practice**" models include **DeclareNet; MRAMS; and the FCC data base** of part 68 certified equipment in transition to the private sector.

- c. **Regardless of conformity assessment system used to show compliance to its regulation, a country has to maintain a market surveillance system** to protect against illegal and unsafe products Fair market conditions should prevail. Suppliers which follow the rules and bear the administrative costs and delays due to regulations should not be disadvantaged compared to those who do not comply

with the rules. **Best practice considerations in such market surveillance systems include;**

- *Costs should be viewed against the benefits for the whole economy, especially when supporting regulatory initiatives such as suppliers declaration*
- *Some costs can be shifted to guilty parties*
- *Market surveillance must include communication as part of its strategy*
- *Market surveillance must be backed by technical competence*
- *There may be considerable gains from co-operation through electronic technologies.*

4) **A major distinction** must be made between the **Technical Regulations** and standards applicable to products and **the conformity assessment requirements** to be used to ensure that the products placed on the market conform to the characteristics required. The maturity of the regulatory objective and its implementation in various national regulatory systems dictates in any specific case whether it is the “differences” in the standards or the “duplications” of the conformity assessments that deserves higher priority from the policy perspective.

a. **In the case of “mature” regulatory objectives such as EMC and electrical safety ...there are by and large reasonably well accepted International standards** (see for example list of IEC Telecommunications Standards in references) that can serve as a basis for technical regulations (the exception being the current US/EU controversy over low frequency conducted emissions) ...and there will be therefore greater return for investment in global solutions to the problem of multiple tests and certifications to the same standard in different markets.

Best practice models here include the IEC work of CISPR on electromagnetic compatibility and the **new work underway in IEC TC 106** Methods for the assessment of electric, magnetic and electromagnetic fields associated with human exposure

b. **In the case of “less mature” regulatory objectives** such as accessibility and environment...there do not exist international norms...and **some means and strategic policy attention to the importance of not creating unnecessary requirements in the first place and then not creating unnecessary differences in requirements is demanded.** A prime example of the issue is the treatment of accessibility requirements telecommunications products as epitomized by Dale Hatfield’s statement in 1999... *there are many very important standards-making efforts underway in this arena. However, it is my understanding that there exists no single*

coordination point or international clearinghouse for information on these efforts.

The Conclusions of the UN/ECE WORKSHOP ON THE ROLE OF INTERNATIONAL STANDARDS AND TECHNICAL REGULATIONS IN INTERNATIONAL TRADE in November , 2000 captures **what would be a “best practice” global approach to this problem.**

Calls on UN/ECE Governments and international organizations:

to show their commitment to the facilitation of international trade by wider participation in international regulatory cooperation and international standardization and effective implementation of the results;

to encourage effective coordination and cooperation between Governments and regulatory authorities and economic operators, and different international organizations and intergovernmental forums and to follow up on practical proposals on regulatory cooperation, in particular sectors/product areas;

to involve, where appropriate, private-sector representatives in such activities thus promoting a public-private partnership approach.

5) One initial objective of this project of **completing a “structured” inventory of the variety of potential regulatory objectives and their implementation in various markets** has been only partially achieved by this study. Such a comprehensive survey **remains a worth while task** in defining the dimensions of the current situation since it is the foundation for concluding where priority attention may be best placed for the maximum positive results. This project effort could not have produced the results contained in this report were it not for the considerable support and cooperation GTW received from those parties noted in the Acknowledgments section and in particular the APEC Implementation Project Team

Appendix A

Japan

From APEC MRA Implementation project undertaken by Australian Telecommunications Industry Association (ATIA) Communications Industry Association of Japan (CIAJ) and Telecommunications Industry Association (TIA) USA further information at <http://www2.apii.or.kr/telwg/mraTG/mratf03.html>

Legislation: The Telecommunications Business Law and the Radio Law

Regulator: Ministry of Posts and Telecommunications

Scope of Technical Regulations

Telecommunications equipment in Japan needs type approval, with technical requirements established for network integrity, interoperability, emergency access, electrical safety, prevention of nuisance to other users and the demarcation of responsibility between telecommunications circuit facilities and terminal facilities.

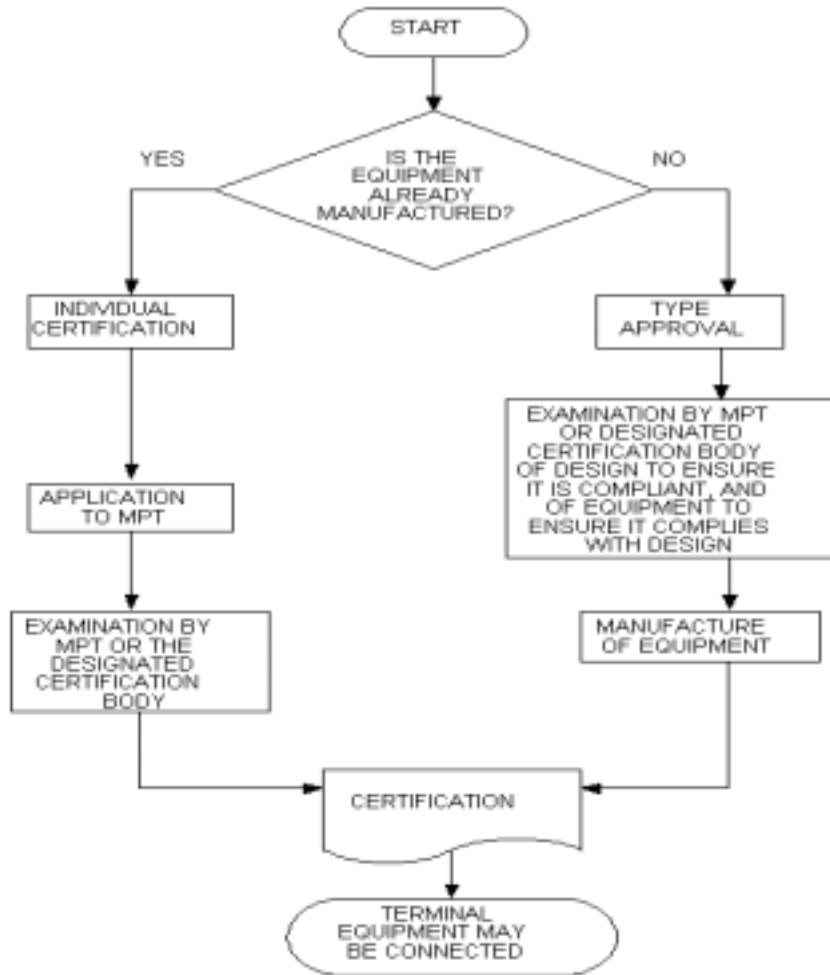
Voluntary standards for EMI are based on CISPR standards. Compliance tests are carried out by the Voluntary Control Council for Interference(VCCI).

Procedures to Demonstrate Equipment Conformity

MPT has designated the Japan Approvals Institute for Telecommunications Equipment (JATE) and the Telecommunications Engineering Center (TELEC) to certify wireline telecommunications equipment and wireless telecommunications equipment, respectively. JATE and TELEC are independent from operators and manufacturers. Type approvals may be made locally and internationally, and only documentation and test reports need be submitted. Applications must be made in Japanese, and application fees ranging from around \$US1000 to \$US5700 for wireline equipment and \$US5,500 to \$US13,000 for wireless equipment must be paid for type certification. However, for new terminal equipment that has no major changes from equipment previously approved by JATE or TELEC, the application fee is reduced.

All approved equipment must be labeled. The labels may either be produced by the manufacturer, or obtained from JATE and TELEC.

Figure 1 - Japan's regulatory procedures



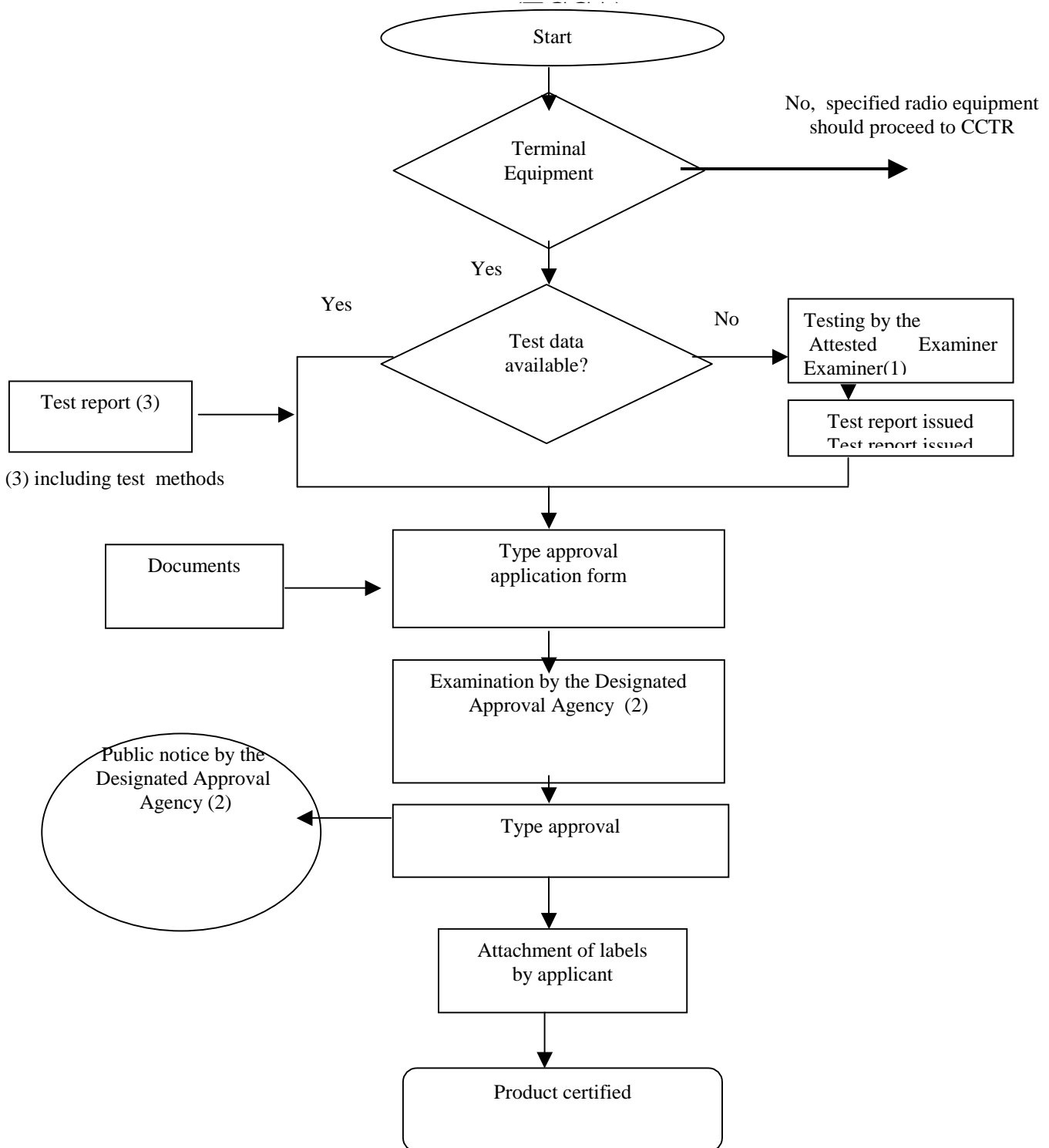
Standards

Standards in Japan are developed by a number of different organisations, and are distributed by these organisations. They are usually available in Japanese only, however some may be translated into English, in part or in full. Voluntary standards for EMI are based on CISPR standards. Compliance tests are carried out by the Voluntary Control Council for Interference (VCCI).

Designation and Accreditation

MPT is the designating body in Japan, and they are able to recognise overseas testing authorities. Japan is a member of APLAC. But does not yet fully participate in the APLAC MOU.

Procedures for Technical Conditions Compliance Approval



Revised Flow Chart For Japan's Regulatory Process

Appendix B

Australia

From APEC MRA Implementation project undertaken by Australian Telecommunications Industry Association (ATIA) Communications Industry Association of Japan (CIAJ) and Telecommunications Industry Association (TIA) USA further information at <http://www2.apii.or.kr/telwg/mraTG/mratf03.html>

Legislation: Telecommunications Act 1997; Radio communications Act 1992; Australian Communications Authority Act 1997; Telecommunications Labeling (Customer Equipment and Customer Cabling) Notice No. 2 of 1997; Radio communications (Electromagnetic Compatibility) Standard 1998; Radio communications (Compliance Labeling – Incidental Emissions) Notice 1998; Radio communications (Compliance Labeling) Notice, and associated Radio communications Standards; Radio communications (Electromagnetic Radiation - Human Exposure) Standard 1999; Radio communications (Compliance Labeling – Cordless and Mobile Phones) Notice 1999

Regulator: Australian Communications Authority (ACA)

Scope of Technical Regulations

In Australia, telecommunications terminal equipment connected to the public telecommunications network, and telecommunications products that use radio communications, are covered by technical regulations. These regulations cover network integrity, interoperability, emergency access, electrical safety under the Telecommunications Act 1997 and use of the radiofrequency spectrum EMI and radiofrequency health exposure under the Radio communications Act. State based electrical safety requirements for connection to the low voltage supply also exist

Procedures to Demonstrate Equipment Conformity

Access to the market is based on equipment suppliers completing a Declaration of Conformity. Suppliers must obtain for most products a test report on their product (for some classes of product this must be from an accredited test house), label the product with a compliance mark and retain documentation for audit.

Accredited test reports are required for customer equipment that is connected to the PTN, mobile and cordless equipment, and radio communications equipment that has safety of life implications.

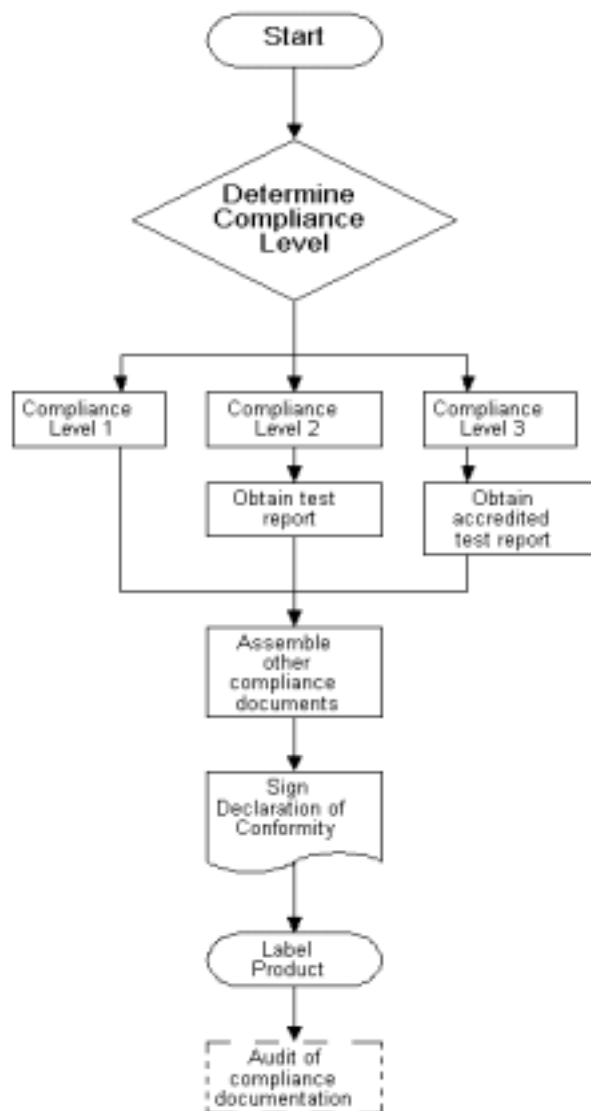


Figure 2 - Australia's regulatory procedures

Standards

Telecommunications standards are prepared by the Standards Association or by the Australian Communications Industry Forum which is accredited by the Standards Australia Accreditation Board. Standards only have force of regulation when they are adopted by the ACA. These standards are largely based on IEC, ITU-T, ISO, FCC and ETSI standards. Standards for EMI and radio communications are based on international (CISPR) standards.

Designation and Accreditation

The ACA recognises the National Association of Testing Authorities (NATA) as the body that assesses the technical competence of testing laboratories. While the ACA remains the designating authority in Australia the appointment of conformity assessment bodies will be on the basis of NATA accreditation. The ACA also recognises overseas testing

laboratories as equivalent to NATA accredited facilities if they are accredited by a body that has a Mutual Recognition Agreement with NATA. Test reports from overseas organisations are not treated differently to those originating within Australia.

NATA is a member of the APLAC MRA.

Implementation of the MRA

Australia has indicated that they are ready to implement the APEC TEL MRA in July 1999.

Appendix C

United States

Legislation: Communications Act of 1934 as amended; Title 47 of United States Code; Title 47 of Code of Federal Regulations (47 CFR); FCC Rules and Regulations

Regulator: Federal Communications Commission (FCC)

The U.S. FCC adopts Rules and Regulations to implement the requirements of the Communications Act, which then are published in the U.S. Code of Federal Regulations. The U.S. FCC's Rules and Regulations are found in Title 47 of the Code of Federal Regulations (C.F.R.). Title 47 is available in 5 volumes covering U.S. FCC Rule Parts 0 to 19, 20 to 39, 40 to 69, 70 to 79, and 80 to end

The U.S. FCC's major requirements for telecommunications products are contained in Title 47 of the U.S. Code of Federal Regulations, in the various Parts as follows:

- Part 2: Subpart J specifies certification procedures; Subpart I specifies marketing rules; Subpart K specifies import rules.
- Part 15: Specifies technical standards and certification requirements for unlicensed low power transmitters and for control of radio interference from electronic equipment.
- Part 18: Specifies technical standards and certification requirements for industrial, scientific, and medical (ISM) equipment.
- Part 68: Specifies the technical standards necessary to assure that equipment attached to the public switched network will not cause harm to it.

Other rule parts contain the standards and certification requirements for equipment used in various radio services. For example, Part 22 contains the standards for equipment used in the cellular radio service; Part 24, for equipment used in personal communications services; Part 73, for equipment used for broadcasting.

If equipment has been "registered" with the U.S. FCC as required, a network operator is obliged to permit it to be attached to the network. This is an important purpose of certification. That is, certification gives manufacturers and consumers assurance that they can connect their terminal equipment to the network. To establish such a right of connection, applicants must demonstrate that no harm to the network occurs as a result of attachment of their equipment to the network. Certification assures that applicants can reasonably use terminal equipment in ways that are privately beneficial without public detriment.

Scope of Technical Regulations

The United States regulates all radio communications transmitters, scanning receivers and telephone terminal equipment. Included in the regulations covering this equipment are technical requirements for network integrity, EMI, electrical safety, use of the radiofrequency spectrum and radiofrequency health exposure.

The organization that establishes these requirements is U.S. Federal Communications Commission (U.S. FCC), the federal regulator for telecommunications, broadcasting, and use of the radio spectrum. Certification is a process to attest that a product is in conformance with an obligatory requirement of the U.S. FCC as determined through use of a specific test method.

FCC requirements are intended for the following purposes:

- To protect against harm to the public switched telephone network
- To ensure that equipment does not cause radio frequency interference
- To ensure the safe use of telecommunications equipment
- Where appropriate, to provide persons with disabilities access to communications services.

FCC does not generally require that equipment be compatible with particular performance (for example, reliability or quality) standards.

Wireline equipment that attaches to the public switched telephone network must be "registered" under Part 68 of the U.S. FCC's Rules to protect against harms to the network. This generally includes the following types of equipment: telephone handsets; PBX systems; cordless telephones; facsimile machines; and modems.

Radio transmitters generally must be authorized by the U.S. FCC.

Equipment requiring "type acceptance" generally includes higher power radio transmitters such as: cellular radio transmitters; land, aeronautical and maritime mobile transmitters; AM, FM and TV broadcast transmitters; and, private operational fixed microwave transmitters.

Low power transmitters (i.e., less than 100 mW) include the following: cordless telephones; spread spectrum transmitters; baby monitors; radio control toys and walkie-talkies; home security alarm systems; anti-shoplifting systems, etc.

Certain products must be show compliance with Part 15 and 18 standards that limit radio emissions in order to control interference: radio receivers (local oscillator emissions); radio frequency lighting devices for home use; home ultrasonic jewelry cleaners, etc.

Procedures to Demonstrate Equipment Conformity

Demonstration of conformity to FCC requirements is based on one of four alternatives that are specified in each particular regulation

Declaration of Conformity (DoC) is the self-approval procedure applicable to the Part 15 and Part 18 equipment which has a relatively low risk of causing interference. It requires the manufacturer or importer to test the equipment to determine compliance with the FCC standards. A label is required to be placed on the equipment and specific wording is required in instruction manuals that accompany the products. Declaration of Conformity is defined in Part 2 of the Commission's rules. DoC is an equipment approval procedure under which the party responsible for the equipment's compliance with specific technical parameters, the manufacturer, importer, or assembler, causes measurements to be made of equipment performance to determine compliance with the standards. The party performing such measurements must be accredited for doing so. The DoC procedure does not require the Commission to designate which testing facilities are appropriate. DoC provides added safeguards (over verification) that are necessary to ensure compliance for certain products that have a greater potential for causing interference or where issues about proper measurement method may arise.

Verification is a procedure whereby the manufacturer or importer certifies equipment through a testing facility that measures equipment performance with regard to specific technical parameters. Verification, in the context of Part 15 equipment, permits approval from any laboratory. Unlike DoC, verification does not require accreditation of the testing facility or a formalized declaration of compliance by the responsible party. In contrast to SDoC, under verification, the supplier would not be required to attach a formal statement identifying the party responsible for ensuring that the equipment complies with the appropriate technical standards.

Supplier's Declaration of Conformity is a hybrid of the DoC and verification procedures currently in Part 2 of the Commission's rules. SDoC does not require testing of the equipment by an accredited laboratory. The SDoC process does, however, require responsible parties to test for and declare conformity of their own equipment with required technical criteria, or at their option, have it tested by an independent laboratory. Although the procedures are similar, SDoC differs from verification because under SDoC, equipment is accompanied by a formal SDoC statement identifying the party responsible for the product's compliance with appropriate technical standards to ensure accountability.

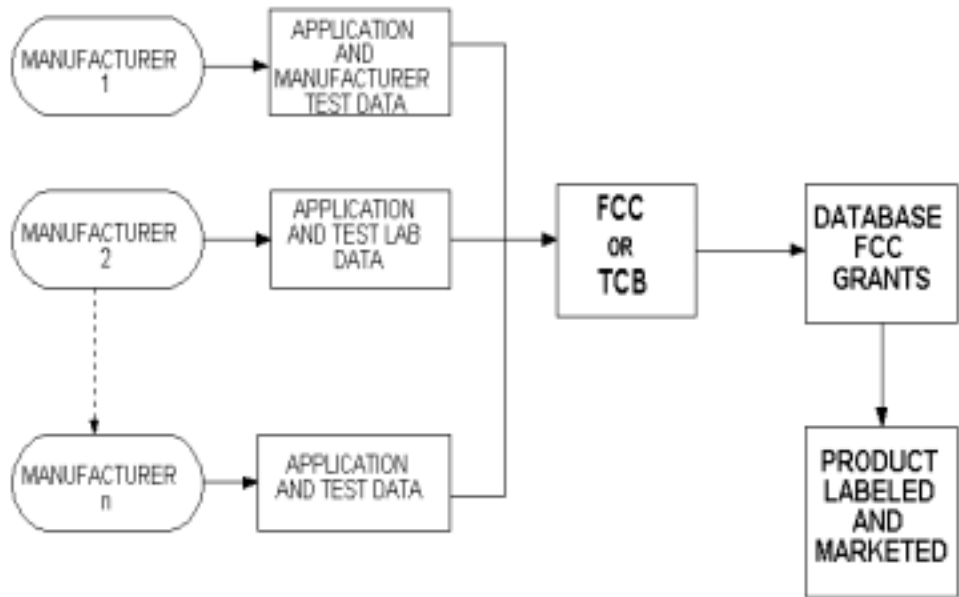
Certification is a process requiring an applicant to show that the device for which it assumes responsibility complies with specifications. Upon a finding that the applicant has met this requirement, which involves a review of test data, a Telecommunications Certification body (TCB) issues a certification number, thereby permitting sale and connection of the device.

The process for TCB certification of products includes the following steps

- a) Certification must be based on the submittal to the TCB of an application that contains all the information required under the Commission's rules.
- b) TCBs will be required to issue a written grant of certification.
- c) The grantee of certification will remain the party responsible to the Commission for compliance of the product.
- d) The type testing as defined in Guide 65 should normally be done on only one unmodified sample of the equipment for which approval is sought.
- e) There is no restriction on the fees that TCBs may charge for certification.
- f) TCBs may either perform the required compliance testing themselves, or may accept and review the test data from manufacturers or other laboratories. TCBs may also subcontract with others to perform the testing. However, the TCB remains responsible for ensuring that the tests were performed as required and in this regard TCBs are expected to perform periodic audits to ensure that the data they may receive from others is indeed reliable.
- g) Equipment certified by a TCB must meet all the Commission's labeling requirements, including the use of an FCC Identifier.
- h) TCBs must submit an electronic copy of each granted application to the Commission using the new electronic filing system for equipment authorization applications.
- i) TCBs may approve requests for permissive changes to certified equipment, irrespective of who originally certified the equipment.
- j) TCBs must periodically perform audits of equipment on the market that they have certified to ensure continued compliance.

For certification, equipment suppliers must apply to either the FCC or a Telecommunications Certification Body (TCB). The application must be accompanied by an application fee, a test report, a technical description of the product, a user or installation manual and photographs of the product. For the Declaration of Conformity, an equipment supplier must obtain an accredited test report, determine compliance with the applicable standard, then declare compliance of the product.

Figure 3 - The United State's regulatory procedures



In the United States, type approved equipment must be labelled with a type approval number. Labels are reproduced by the supplier based on a standard design. A statement must also be included in the user manual. Declared equipment must also be labelled, indicating that the equipment is either tested to comply with applicable standards, or assembled from tested components.

Standards

Preparation of standards has been the responsibility of the FCC. These standards are published as part of the regulations, and are available from the FCC website, or the US Government Printing Office. They are available in English. Recently the FCC transferred responsibility for most of the Part 68 standards to the private sector.

Obligatory standards, specified in the U.S. FCC's Rules, are developed through an open and participatory process. The U.S. FCC first proposes the standards it intends to adopt, including the reasons for adoption of the standards. The proposal is published and all interested parties have an opportunity to file written comments. Parties may visit with appropriate U.S. FCC officials to explain their positions more thoroughly. Based on the comments, the U.S. FCC may decide to modify the proposal when it adopts the final rules. Once the rules are adopted and published, parties have an opportunity to file a request for reconsideration of the new rules and there is again the opportunity to support or oppose such requests. Depending on the merits of the arguments, the U.S. FCC may modify the rules further.

The U.S. FCC generally specifies only the minimal technical standards necessary to protect against harm to the public switched telephone network or to minimize the risk of radio interference. This is to allow equipment manufacturers the greatest flexibility possible in designing their products with the least governmental intervention. Wherever possible, the U.S. FCC relies on voluntary standards organizations composed of industry experts to resolve complex technical matters to assure interoperability and interconnectivity. Standards for air interfaces and network protocols, for example, are generally left to the private sector. Such voluntary standards are developed by groups such as the Telecommunications Industry Association, Committee T1 and the American National Standards Institute. The charters of these groups require that standards be developed in an open manner and that standards be based on consensus.

Requirements for Imported Telecommunications Products

In general, imported telecommunications equipment must comply with all applicable U.S. FCC rules prior to importation. The import requirements for radio devices are specified in the U.S. FCC's Rules, Part 2, Subpart K of the U.S. Code of Federal Regulations. In addition, Section 1380 of the Telecommunications Trade Act of 1988, which is administered by the U.S. Customs Service, contains a general requirement that any product (including radio devices and communications equipment attached to the public switched network) subject to "registration" or approval by the U.S. Federal Communications Commission may only be imported if the product conforms with all U.S. FCC rules and is accompanied by the proper FCC form, which must be presented to the customs official at the time of entry.

There are a number of situations where equipment may be imported before it has been authorized: import in limited quantities (that is, fewer than 200 units for radio devices or not more than 35 units for equipment that will be attached to the public switched network) for testing for compliance with the U.S. FCC's Rules; import in limited quantities for display at an industry trade show; equipment imported solely for export; import for exclusive use by the U.S. government; import of three or fewer unintentional radiators for personal use (that is, radio receivers, CD players and personal computers); and devices imported for repair. Extremely low power devices, such as cameras, musical greeting cards, quartz watches and clocks, and hand-held calculators and electronic games, are also excluded from the import restrictions. In addition, subassemblies and electrical parts, such as circuit boards, integrated circuits, capacitors, and resistors, are not subject to restrictions on importation.

After the equipment has been approved, it may be freely imported. The U.S. Customs Service's paperwork for entry of goods into the United States must be accompanied by a completed FCC Form 740. The importer must mark the box next to the appropriate compliance statement on the form. For example, the importer would check the box next to the statement that the equipment has been authorized as required. Or, if the equipment has not been certified but is being imported for display at a trade show, the importer would check the box next to the statement that the equipment is being imported for display at a trade show.

The U.S. FCC's Rules prohibit the advertising or sale of telecommunications devices before they have received certification. The marketing rules for radio devices are contained in Part 2, Subpart I of Title 47 of the U.S. Code of Federal Regulations.

Appeal Process

If an application is denied, the applicant may file a petition for reconsideration. Such petitions are normally addressed by the Chief of the relevant department of the U.S. FCC (i.e., Chief of the Office of Engineering and Technology or Chief of the Common Carrier Bureau). Alternatively, the applicant may file a request for review by the Chairman and Commissioners of the U.S. FCC.

Delays in processing applications generally are due to the failure of the applicant to file the required information and usually can be resolved informally without the need for a formal appeal.

After equipment is authorized, only certain modifications can be made to the equipment without seeking a modification to the existing authorization

For wireline equipment to be attached to the public switched network, modification filings must be made to report changes to "registered" equipment when such changes affect the Part 68-related characteristics of that equipment (that is, those operating characteristics that are affected by the U.S. FCC's Rules; for example, leakage current limitation or hazardous voltages).

For all other equipment, Part 2 of the U.S. FCC's Rules generally provides for two categories of changes after equipment has been approved. Class I changes that do not degrade the technical characteristics may be made without any further reporting to the U.S. FCC. Generally Class I changes include cosmetic changes and minor changes in electrical circuitry. Class II changes are those that degrade the technical characteristics reported to the U.S. FCC, however, the equipment remains compliant with the standards. Class II changes must be reported to and approved by the U.S. FCC. Such modifications are usually processed quickly (i.e., 2 weeks). A significant change to key electrical circuits, such as the oscillator in a receiver or output stages for a transmitter, will generally require submittal of a complete new application. When in doubt as to which category applies to a specific situation, the manufacturer should contact the appropriate U.S. FCC department for advice.

What are the main kinds of telecommunications equipment not subject to certification?

In general, equipment that attaches to the network and wireless equipment must be authorized either by the U.S. FCC or the manufacturer as specified in the rules.

However, certain equipment is exempt from the radio noise standards in Parts 15 and 18 of the U.S. FCC's Rules. Equipment that is exempt includes: appliances; test equipment; equipment used by utilities; professional medical equipment; extremely low power devices such as electronic wrist watches; transportation vehicles; and, magnetic resonance imaging systems. Further detail on the scope of the exemptions is contained in Parts 15 and 18.

For radio devices, the U.S. FCC oversees equipment used by the public, by private companies including railway and power companies, and by local and regional governments. On the other hand, radio devices purchased or used by the United States Government, and not connecting to the public switched network, are under the jurisdiction of the National Telecommunications and Information Administration within the U.S. Department of Commerce. This would include radio devices used by defense services, federal law enforcement agencies, and other federal agencies such as the Internal Revenue Service and the Department of the Interior.

FCC certification is not required for telephone network equipment, such as central office switches. The standards for switches, and for other in-network components such as the air interface between wireless and wireline facilities, are developed on a voluntary basis by industry participants.

Accessibility Requirements for Telecommunications products in the US

Accessibility requirements text found in Section 255(e) Telecommunications Act of 1996 states that the Architectural and Transportation Barriers Compliance Board (Access Board) shall develop guidelines for accessibility of telecommunications equipment and customer premises equipment in conjunction with the Commission.

To implement its obligations pursuant to section 255(e), the Access Board convened the Telecommunications Access Advisory Committee (TAAC) to develop recommended equipment accessibility guidelines for consideration by the Access Board. The TAAC included representatives from equipment manufacturers, software firms, telecommunications providers, organizations representing persons with disabilities, and other persons interested in telecommunications accessibility.

The guidelines developed consist of: (1) general accessibility requirements; (2) specific guidance on the ways in which the functions necessary to operate a product should be made accessible if readily achievable; and (3) standards for compatibility with peripheral devices and specialized CPE.

FCC issued Report and Order 99-181 on September 29, 1999 In the Matter of Implementation of Sections 255 and 251(a)(2) of the Communications Act of 1934, as Enacted by the Telecommunications Act of 1996 Access to Telecommunications Service, Telecommunications Equipment and Customer Premises Equipment by Persons with Disabilities

The Report and Order :

(1) requires manufacturers and service providers to develop a process to evaluate the accessibility, usability, and compatibility of covered services and equipment

(2) requires manufacturers and service providers to ensure that information and documentation provided to customers is accessible to customers with disabilities, if readily achievable

(3) requires manufacturers or service providers to review the accessibility of a product or service, and incorporate accessibility features, where readily achievable, at every natural opportunity

(4) requires the universal deployment of accessibility features that can be incorporated into product design when readily achievable; where those features cannot be universally deployed, but are readily achievable to incorporate into some products and services, manufacturers and service providers have the flexibility to distribute those features across their products or services as long as they do all that is readily achievable

(5) where meeting accessibility requirements are not readily achievable, requires manufacturers and service providers to ensure compatibility with existing peripheral devices or specialized Customer Premises Equipment (CPE) commonly used by individuals with disabilities to achieve access, if readily achievable

(6) prohibits a telecommunications carrier from installing network features, functions, or capabilities that do not comply with the accessibility requirements of the rules.

Other Requirements

Certain radio transmitters must meet requirements to ensure against hazards from RF exposure. For example, equipment used in personal communications services and equipment operating above 40 GHz must meet an American National Standard for RF exposure before it may be authorized.

Telephone handsets, in addition to meeting requirements to protect against harm to the network, must meet requirements that ensure compatibility with hearing aids.

Requirements for demonstrating Electrical safety for equipment, including telecommunications equipment, used by the general public is not regulated at the federal level. However, most local community electrical codes require that equipment that operates from the electrical mains be approved by private sector laboratories.

The Occupational Safety and Health Administration, a federal government agency within the U.S. Department of Labor, specifies requirements with regard to electrical safety (i.e., electric shock and fire hazards) for equipment, including telecommunications equipment, used in the workplace.

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Serguei Kouzmine

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