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GLOBAL CIRCULATION OF IMT-2000 TERMINALS

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REPORT ON GLOBAL CIRCULATION OF IMT-2000 TERMINALS

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EXECUTIVE SUMMARY

This report deals with the issue of global circulation for IMT-2000 terminal equipment. In this context global circulation is taken to mean the right of users to carry IMT-2000 terminals with them anywhere in the world and use the terminals when transmission is authorised.

Administrative arrangements necessary to facilitate the global circulation of IMT-2000 terminals are also considered. In this respect the term IMT-2000 is assumed to include all IMT-2000 family members such as UMTS. In addition, consideration is given to multimode terminals where one of the modes is not an IMT-2000 family member.

It has been said that administrative arrangements for circulation may lead to heavier regulation. This must be carefully avoided when developing arrangements for circulation. The circulation arrangements must be aimed at simplifying existing regulation, not increasing it.

One of the basic requirements of global circulation is that the terminal involved does not give rise to unacceptable interference in any country where it is taken. One possible means of achieving this is that the terminal does not transmit before it has received a signal from a valid network with which it can communicate (receive-before-transmit principle). However the report recognises that there may be other technical means of achieving the basic requirement.

A system for a global marking of IMT-2000 terminals has been considered. The benefit of a marking regime must be balanced against the potential increase in regulatory burden (such as the requirement for multiple markings). For this reason, the subject requires further consideration and further reflection on the working of other regimes.

Some possible mechanisms for global circulation are identified in this report and, in particular, the GMPCS MoU and the GSM MoU arrangements are covered in detail. Some other possible arrangements are also considered. However no single solution has been identified to resolve all the global circulation issues for IMT-2000 terminal equipment. A possible means for moving forward on the issue is identified as the formation of a policy document to be agreed by administrations, which could lead to a phased resolution of the issue. Such a policy document would have to be developed at a global level.

REPORT ON GLOBAL CIRCULATION OF IMT-2000 TERMINALS

1 INTRODUCTION

IMT-2000 is being developed as a third generation global communication system. A key element in the success of this system is the ability for terminal equipment to circulate world-wide without any hindrance or obstacles. In this respect users of the terminals will want to carry them throughout the world and use them wherever it is possible to do so. If they are hampered to do so by regulatory barriers, the successful development of IMT-2000 will be impaired. Global circulation will bring clear advantages for the user in terms of global (or near global) availability of the system. There would also be advantages for operators and manufacturers in terms of the global market generated.

The global circulation of IMT-2000 terminals is also beneficial for national administrations, since it will allow the national economies to reap the full benefits of third generation systems and allow the mobile multimedia sector to become an important part of the national market.

National administrations throughout the world will play a particularly important role in the development of any global circulation arrangements for IMT-2000 terminal equipment. This report although generated in Europe is aimed at national administrations throughout the world and may also be of interest to operators and manufacturers.

A considerable amount of work has been carried out in Europe on circulation of existing terminal equipment. This report builds on this experience and develops requirements for global circulation of IMT-2000 terminal equipment. Although the main issue is that of global circulation, one cannot avoid addressing aspects of conformity assessment. In this context the trend in Europe to move away from a priori type approval regimes towards a regime based on manufacturers declaration is relevant.

This report deals only with global circulation for IMT-2000 terminal equipment. It emphasises the requirement for equipment to avoid the generation of unacceptable interference. Modern radio technologies, whereby the usage of frequencies is being controlled by the network (receive-before-transmit concept) achieve this end.

The term IMT-2000 is used throughout this report and this is intended to include all IMT-2000 family members such as UMTS.

It has been recognised that global circulation is required for terminal equipment such as IMT-2000. Civil authorities all over the world actually does not need to know whether particular IMT-2000 terminals are authorised to circulate globally. Instead, they need to know whether the terminals as a whole are authorised. This becomes especially apparent in the case of a multimode terminal in which IMT-2000 is only one of the modes, where one of the fellow modes may prevent the whole terminal to enjoy global circulation.

The idea of generic global circulation covering all kinds of radio equipment has not been developed in this report, because it was felt that a generic global circulation scheme could not be achieved in the IMT-2000 timeframe. However for modes likely to be part in an IMT-2000 multimode terminal a solution is suggested.

2 GLOBAL CIRCULATION

2.1 Need for global circulation

One of the main principles of IMT-2000 is the availability of universal personal communications services from a mobile terminal, on a global basis. Global mobile service implies that access to the core network may be gained from any point in the world, subject to the provision of coverage from an access network. The benefits of this are quickly diminished if access networks use different technologies and users therefore have to use different terminals depending on the allocation.

The principle that any IMT-2000 terminal shall be capable of accessing the core network from any physical location is central to the IMT-2000 concept. The potential for the use of such technology to provide access is limited by differing regulatory regimes around the world. Two aspects of such regimes which bear on the issue of the circulation of terminal equipment are:

1) the type-approval and marking of terminal equipment, and

2) the licensing of terminal equipment.

With regard to IMT-2000, the circulation is required on a world-wide scale. Remaining barriers need to be removed and a realistic approach to achieving this goal needs to be devised. Many of the existing barriers to the circulation of equipment are historically stemming from risk for by-pass, incompatible approaches to licensing and customs fees. Thus, it is necessary to show that such fears are exaggerated or misplaced and that countries will gain from allowing the circulation of terminals

IMT-2000 terminals are likely to embody a family of “modes”, or different air interfaces, which may not be supported in all countries. Users wishing to carry their terminals outside Europe will wish to be able to do so, even where they cannot use the equipment. The IMT-2000 technology can to a large extent technically ensure that harmful interference is avoided. Therefore there is no technical reason for such equipment not to freely circulate world-wide.

Although there is obviously a clear need to allow the global circulation of IMT-2000 terminal equipment, it is not at all clear, whether such can be arranged through international binding arrangements. Although it remains an objective for global circulation to be arranged with regulatory certainty, it is questionable, whether such can be achieved, other than on a regional basis (e.g. the EEA regime).

Conclusion: To achieve the objective of global circulation of IMT-2000 terminals, the removal of existing barriers is to be pursued. Many of these barriers cannot be justified from a technical perspective (e.g. harmful interference) nor from an economic perspective (no risk of by-pass in the absence of an IMT-2000 network).

2.2 Benefits and constraints of global circulation

2.2.1 Benefits

The primary beneficiary of global circulation is the user. The ability to access the core network, via a single personal terminal from any point in the world, is a major benefit to users who frequently travel outside the coverage of a homogenous network. The benefits of such a facility have been well proven by the GSM experience.

There are further benefits for network operators, who will be able to offer service to a much larger potential base of roaming users. Similarly service providers will be able to offer service to their customers via the core network, even when they are located outside the coverage of their local access network.

There are also benefits to be gained from economy of scale. Although it will be possible to achieve roaming by means of multimode terminals, it will be a considerable disadvantage if all of these modes cannot be used globally. If the number of modes can be maintained at a small number all with global circulation then there will be a considerable advantage for manufacturers in terms of economy of scale and the potential of a global market.

For the national economies global circulation of terminals will have considerable advantages. The wide spread use of third generation mobile systems will provide a powerful stimulus to the national economy.

For the administrations global circulation of terminals will mean that any need to issue personal terminal licences will be removed and considerable manpower resources can be transferred to other regulatory tasks.

2.2.2 Constraints

Technological constraints

A potential constraint in the application of any global circulation arrangement is that some flexibility of a third generation system may have to be sacrificed in order to achieve global acceptance of the circulation of terminals. Typically this could arise from the strict adherence to a receive-before-transmit policy. This could constrain the use of such features as direct mode between terminals or ODMA (Opportunity Driven Multiple Access)[1].

Risk of further regulation

There is also certain anxiety that an attempt to achieve circulation by means of administrative measures may lead to more and heavier regulation, e.g., in the form of complicated procedures or excessive marking. Therefore whatever circulation measures are taken, extreme care shall be taken that the measures are aimed at simplifying the regulation, not increasing it.

Fear for by-pass

Some governments and telecommunications operators are concerned about the potential for bypass of their existing telecommunications infrastructures. It has been argued in the context of global mobile personal communications by satellite (GMPCS) - and the same arguments apply in the case of IMT-2000 - that GMPCS is neither intended to replace existing networks nor is it feasible, at a technical level, for it to do so. GMPCS systems are designed to complement and augment the existing telecommunications infrastructures and tend to be used where there are limited or no other alternatives. While there may be some diversion of revenue from a country's service provider(s) when travellers and local users make calls on a GMPCS system, it is expected that there will be an accompanying rise in the overall volume of calls over a country's network. This is because most calls will originate or terminate on the PSTN. The revenues earned by the PSTN operators, gateway operators and service providers, and those earned by the terminal distributors, will be additional sources of income for the telecommunications service industry. The increase in information flows will also stimulate the economy of the country, which will in turn increase the tax base for the government. Ultimately, most countries should recognise that they can benefit from access to IMT-2000 through improvement in the quality of life of the population, an influx of investment, and participation in the ownership and operations of facilities and services.

Conclusion: The constraints to circulation can and should be overcome. By deregulation, proper system-design and quantification of the economic effects, it should be possible to arrive at a true global circulation of IMT-2000 terminal equipment.

[1] ODMA has been studied by ETSI as a potential overlay to the basic UTRA radio multiple access mechanisms.

2.3 Levels of circulation

The free circulation of radiocommunications goods and services is a prerequisite to realise a dynamic and competitive radiocommunications market. Within CEPT, for example there is a general desire to reduce bureaucracy and the control exercised by authorities in the form of mandatory provisions to a minimum level.

Three different levels of circulation were identified by CEPT:

1. circulation without permission of using the radio equipment,
2. circulation with permission of using the radio equipment,
3. circulation with the permission of placing the radio equipment on the market.

Level 3 implies trade-related issues in some countries, and so is outside the context of this report. Therefore this Report concentrates on levels 1 and 2 circulation.

Furthermore, it has been pointed out that for IMT-2000 the distinction between levels 1 and 2 may not be relevant. IMT-2000 terminals cannot transmit unless a relevant network is present. Therefore, for IMT-2000 terminals observing the receive-before-transmit principle, the decision, as to whether both carrying and use or only use is authorised has been made already when the administration authorised the network. The user of such terminal has no possibility to influence this.

The experience of users has shown that the existing attempts at global circulation arrangements do not work efficiently enough in every country and that barriers may still be set against the circulation of radio equipment. Therefore this report also aims at a situation in which the authorities around the world are convinced that global circulation does not violate in any respect sovereignty of a country.

Situation in Europe

The current regulatory situation in Europe is rather fragmented. For certain classes of equipment binding legal agreements on the mutual recognition of type approvals and the free circulation are in place (e.g. GSM) in the European Economic Area (EEA), comprising the European Union and some other European countries). In non EEA-countries and for other classes national regimes continue to apply. The CEPT has been successful in harmonising partially these national regimes through CEPT Decisions (e.g. GSM, S-PCS and a number of other terminals).

In the EEA a new regime on conformity assessment and free circulation, the Radio equipment and Telecommunications Terminal Equipment or R&TTE Directive is expected to come into force by the year 2000. At a later stage this regime will also become applicable to those European countries which are in the process of joining the European Union. As regards IMT-2000 equipment, this regime will remove all remaining barriers to the free circulation.

A detailed examination of the European situation is given in **Annex 1**.

3 TECHNICAL BASIS FOR CIRCULATION

3.1 Essential requirements in Europe and world-wide

The term 'essential requirements' refers to those characteristics of the product considered necessary to ensure that the legal requirements are met notably that the environment and other products are protected from interference. The essential requirements do not cover quality aspects, which are a matter between the manufacturer, operator and the customer.

'Essential requirements' are converted to detailed technical specifications in the standard describing the equipment. The fulfilment of essential requirements is obligatory whilst the fulfilment of all other parts of the standard is voluntary.

One of the basic requirements is that IMT-2000 terminals shall not cause unacceptable interference in any country where they circulate. One element in satisfying this may be the application of the receive-before-transmit principle (although it may not be applicable to all aspects of IMT-2000). The regional standards organisations must take care that this principle is implemented in an intelligent way, i.e. 'receive - and find a network with which you can communicate - and transmit only after that'. Another element is agreed set of standard for unwanted emissions.

It is also recognised that other means to satisfy the requirement of not generating unacceptable interference may be utilised. The regional standards body ensures that the overall requirement is met.

It is important that essential requirements developed for IMT-2000 terminal equipment on a world-wide basis should be harmonised. This can be achieved via suitable ITU, ISO and other international standards fora. The world-wide requirements may be at a higher umbrella level to ensure protection of other services. More detailed technical requirements may then be developed within the regional standardisation bodies for specific IMT-2000 terminal equipment.

With this approach, the ITU could provide the overall (umbrella) requirements for IMT-2000 terminal equipment and the regional standards bodies provide the detailed requirements to allow specification of a number of IMT-2000 family members.

In its initial deliberations on the technical requirements for global circulation of IMT-2000 terminal equipment the CEPT has considered that there should be a minimum technical requirement which should be met by all terminal equipment. This could be specified by the ITU as an umbrella recommendation with detailed technical specifications produced by regional standards bodies for specific IMT-2000 family members. Typically the high level requirements could cover:

- unwanted emission mask;
- receive-before-transmit operation;
- basic self monitoring functions, when the equipment is out of order.

An initial analysis on these high level requirements suggests that they are not only suitable for IMT-2000 terminals. They are also appropriate for any fellow mode, such as GSM, PHS or D-AMPS. Hence such an approach would cover also multimode terminals including second generation and third generation components, which are likely to represent the majority of terminals in the initial phase of IMT-2000.

Conclusion: The world-wide terminal requirements should provide umbrella requirements covering IMT-2000 and potential fellow modes of multimode terminals to protect other systems and services. The detailed specifications to achieve the umbrella requirements should be developed by regional standard bodies, whilst remaining mutually compatible.

Further study is required to develop a feasible implementation of such a standardisation strategy.

3.2 Methods to avoid unacceptable interference

The receive-before-transmit requirement is one method to avoid terminals causing unacceptable interference. The vast majority of IMT-2000 terminals will use this method. However, some IMT-2000 equipment that is also considered to be terminal equipment will not be able to use this method.

Examples include:

- direct mode terminal which comprises some base station functionality in absence of a network
- cordless telephone components;
- wireless data equipment;
- equipment integrating IMT-2000 functionality with other third generation standards such as wireless LANs (e.g. Hiperlans);
- equipment using IMT-2000 technology incorporating new concepts such as Opportunity Driven Multiple Access (ODMA).

Such equipment could cause unacceptable interference when operating in frequency bands that are not fully harmonised.

Further study on operational methods to avoid unacceptable interference is needed. These methods could be of a technical nature such as a method to authorise use of specific bands, limiting the emitted power to a lower value or restrictions on use or circulation for such incompatible equipment.

Conclusion: Initially it may be necessary to establish categories of IMT-2000 terminal equipment (including multimode terminals), with only equipment fully complying with the receive-before-transmit principle having unrestricted global circulation. However other arrangements may then be developed to cater for equipment that does not comply with this principle.

4 SOLUTIONS FOR GLOBAL CIRCULATION

4.1 Existing and planned arrangements for possible models

Current experience suggests that when looking for possible solutions to the issue of global circulation, two different models may be considered:

- an informal arrangement where global circulation is achieved by tacit acceptance;

- a formal arrangement where global circulation is given a degree of regulatory certainty.

A typical example of an informal arrangement is that of the GSM MoU where near global circulation has been achieved by the efforts of the GSM MoU but without a clear degree of regulatory certainty. In the case of a more formal arrangement the GMPCS MoU is a prime example.

The GSM MoU is an association of operators and administrations, which deals with a whole range of GSM operational issues and not just type approval. The GMPCS MoU however is an association of operators, manufacturers, service providers and administrations, established to harmonise regulation for the global circulation of satellite terminals.

In the case of IMT-2000, it may be necessary to use a combination of both formal and informal arrangements where the system starts on an informal basis but more formal arrangements are put in place as the system develops. This may enable the complex requirements of IMT-2000 to be more appropriately dealt with.

Both types of arrangement are considered in detail in the following sections.

4.1.1 Informal arrangements

The GSM MoU Association has previously been heavily involved in the development of the type approval arrangements and testing facility for GSM-900 terminal equipment. The type approval regime for GSM terminal equipment began life as a European-based solution eventually falling under the TTE Directive (Directive 91/263/EEC). In developing this regime the GSM MoU provided considerable funding to assist with:

- the development of the test cases for the GSM system simulators;
- the funding of a secretariat for a GSM Type Approval Advisory Board;
- the initial procurement of system simulators.

The GSM MoU has been particularly successful in maintaining world wide harmonisation of the conformance testing for type approval of GSM terminal equipment based on the European regime of Common Technical Regulations (CTR) for type approval. One of the contributory factors to this is that the test equipment is expensive and this has resulted in there being only six test houses in the world, all based in Europe. Another GSM test house is about to come on line in China.

The present situation has made it unattractive for GSM type approval testing facilities to be developed in other countries. As a result regulatory authorities outside of Europe have been willing to accept European type approval as the basis for their own approval, sometimes with minor modifications.

At first glance, the current arrangements for GSM appear to offer circulation and mutual recognition of type approval on a near-global basis without any specific regulatory provisions. Although this may be seen as a commercial alternative to the GMPCS MoU approach, the GSM example operates on an informal basis (in most cases), as the result of pressure applied from GSM operators in their own countries to facilitate international roaming.

The GSM approach relies on the willingness of other countries to accept the CTR type approval from Europe and is not enforced by any legal measures. This also means that although, in practice, users can circulate freely with their GSM terminal equipment, they do not have regulatory certainty of circulation in some countries.

There have been other instances where difficulties unrelated to type approval have been experienced by the GSM MoU. This includes, for example, the export licence restrictions placed on some export applications due to the encryption capabilities of GSM.

Conclusion: Informal arrangements like GSM MoU do not alone give regulatory certainty that users can circulate their terminals in different countries. However, in the case of GSM they have provided a workable solution.

4.1.2 Formal arrangements

The ITU Policy Forum recognised that, like ship and aircraft stations, GMPCS terminals would require global circulation and use. The GMPCS MoU was therefore established to address this issue. This can be seen as an example of a more formalised arrangement.

The GMPCS MoU has developed a set of Arrangements and procedures to facilitate the circulation of GMPCS terminals. The Arrangements addressed four main issues:

- Type Approval and Marking. In order to satisfy type approval requirements, without a formal mutual recognition agreement between all signatories, a method of registering type approvals with the ITU was devised. To indicate such registration, a mark (containing the ITU acronym) can be placed on the equipment.
- Licensing. To avoid the onerous task of obtaining a terminal licence for every country visited, the Arrangements urge administrations to issue a class licence to the system operator for all terminals.
- Access to traffic data. Data required by administrations to monitor the levels of traffic over GMPCS systems is specified.
- Customs Arrangements. A recommendation is made to administrations that customs duties on GMPCS terminals should be reduced or removed in line with the Information Technology Agreement and/or treated as personal effects, under the Istanbul Convention on Customs Duties.

The GMPCS MoU has been signed by around 40 countries at present, including the USA, EU, Brazil, China and Japan. In July 1998 the ITU Secretary General has sent a letter to all ITU member states, satellite operators, service providers and manufacturers to sign the MoU and to implement the Arrangements. However, the Arrangements confer no obligation on the signatories to comply. Additionally, the type approval registration process does not satisfy the conformity assessment requirements of the EU legislation.

A detailed description of the GMPCS MoU is given in **Annex 2**.

Within the CEPT, formal arrangements by way of ERC Decisions have been established to enable free circulation of terminals. A description of these arrangements is provided in **Annex 1**.

Other types of formal and informal arrangements are listed in **paragraph 4.3**.

Conclusion: The GMPCS MoU has addressed global circulation for satellite terminals. Although this approach might not be the best solution for IMT-2000, it contains elements that are thought to be useful to achieve a solution for global circulation for IMT-2000 terminal equipment.

4.2 The challenge for the 3rd generation

The third generation equipment will lead to far more complex demands on the regulatory, commercial, and technical requirements if the full range of services, operating environments, roaming and global circulation objectives are to be fulfilled. This section attempts to outline some of the new scenarios that are likely to lead to these complex demands.

4.2.1 Third generation is not de facto

The second generation, typified by GSM, first commenced as a regional standard with a regulatory regime and political objectives already in place, which resulted in the necessary elements for regional circulation. The subsequent spread of GSM beyond Europe was driven by market forces, at which point it began to emerge as a de facto standard. This has had to be matched by a variety of pragmatic arrangements at national levels to ensure sales, use and movement would be unhindered.

Global satellite systems have faced broadly similar problems but developed alternative arrangements for global circulation.

Against this *de facto* background where the circulation elements have had to react to meet market forces, the major drivers for the third generation include a full global roaming capability from the outset, and the desire for establishing globally recognised standards to encourage world-wide competition in supply, marketing and operation. There is -as yet - no corresponding political arrangement in place at a global level under which these technical, regulatory and commercial requirements can be readily identified and resolved.

The GSM situation is likely to remain an anomaly as far as future generations are concerned. Future systems will require the circulation arrangements to be formally recognised, especially given the much wider circulation of equipment (i.e. more countries) than was originally envisaged for GSM.

4.2.2 Third generation systems have many more components

Second generation systems are primarily technology focused and are aimed at specific market segments. For example, different standards are used for cellular and cordless environments within the terrestrial sector, each of, which are associated with either TDD or FDD.

Third generation user terminals will be capable of operating in many different environments, which are today described by the telecommunications terms cellular, cordless, and satellite User terminals may also embody additional functions associated with other third generation components such as wireless local loop, wireless LAN, etc. Therefore any regime to satisfy the global circulation arrangements must be equally applicable to each component: such arrangements cannot just be tailored to one component.

Further demands are added by the need for user terminals to operate transparently in both public and non-public supporting

networks.

It is unlikely that there will be widespread harmonisation of spectrum plans or the assignment of bands to FDD and TDD, to public and non-public, or even to high or low mobility services. There may even be sharing (e.g. indoor/outdoor, or geographical) between terrestrial and satellite services. This lack of harmonisation will make it more difficult to devise meaningful global circulation arrangements based on second generation concepts.

The introduction of so-called cordless terminals and their base stations into a third generation environment may challenge the second generation vision where the base station is essentially a fixed equipment. In the third generation environment, it could be mobile (e.g., vehicle mounted) or perhaps a personal item of equipment associated with a satellite service or notebook communicator. Such configurations may not be able to comply with the receive-before-transmit principle.

4.2.3 IMT-2000 family of systems

Commercial implications have introduced the concept of evolution from second generation systems and services and a natural consequence of this is the IMT-2000 family of access networks and core networks. UMTS, itself comprising a new wideband radio access network and an evolved GSM core network, is recognised within Europe as a member of the IMT-2000 family. It is widely expected that alternative access and core networks will be developed as part of the IMT-2000 family in order to fulfil the requirement for global deployment of IMT-2000 systems and services, with each family member exhibiting a maximum amount of commonality with other members.

Global circulation arrangements pertaining to technical, regulatory and commercial requirements for any combination of family components must be compatible with alternative combinations, especially where there are multimode or software-based solutions to facilitate roaming services, or where one common mode (e.g. satellite) is used to provide globally available services.

4.2.4 Second/Third generation multimode terminals

It is becoming increasingly evident, as plans begin to emerge regarding the introduction of nation-wide third generation services, that national and international roaming between second and third generation systems will be an essential part of making the third generation a marketable service during what is expected to be a lengthy roll-out period. Indeed, the geographical coverage by terrestrial systems may never surpass that of second generation services, which are forecast to continue and to improve in parallel with those of the third generation.

This will lead to development of dual mode terminals which, for global circulation, will have to comply with essential technical, regulatory and commercial requirements applicable to both second and third generations.

The regime under which the global circulation requirements are defined must therefore not be incompatible with the future second generation terrestrial and satellite requirements, which will exist when the third generation is introduced.

4.2.5 Implications arising from mass-market or non-terminal-centric products

Today, user terminals for second generation systems are designed and produced by a relatively small number of specialist suppliers. This situation is beginning to change and not only can the number and geographical spread of suppliers be expected to increase, but the range of products to satisfy a wider range of market segments can be expected to increase as well. This trend will be accelerated by the third generation where in many countries it is expected that this third generation will be the solution to the real mass-market. This proliferation of suppliers, products, and markets will result in greatly increased pressures on those regulatory authorities tasked with implementing, and perhaps policing, circulation requirements.

A second consideration is that at present, it is customary to consider a user terminal as a specific item of hardware, perhaps containing a user identity (e.g. a SIM card). In other words, the traditional vision of the user equipment is entirely terminal-centric.

However, already with the second generation, products such as cellular PCMCIA (Personal Computer Memory Card International Association) cards are now commercially available which permit a standard notebook computer to function as

a complete self-contained cellular terminal. These PCMCIA cards incorporate the GSM RF functions and SIM card reader and should not be confused with a PCMCIA modem, which connects to a cellular phone.

This example indicates how future developments in user terminals, especially those associated with the mass-market and the Information Society, may challenge traditional designs of terminal and demand a fresh approach to regulation and type approval.

Conclusion: Existing mechanisms enabling global circulation for the 2nd generation may not be sufficient to meet third generation markets and services. An innovative approach to regulation for the third generation is required.

5 DIFFERENT MECHANISMS TO FACILITATE GLOBAL CIRCULATION

Enabling the global circulation of UMTS terminals and/or mutual recognition of type approvals for UMTS terminals can be envisaged by means of a number of different mechanisms, as referenced below, not all of which may be suitable, practical or feasible.

5.1 Legal arrangements, e.g. international treaty

It might be possible to establish an international treaty, binding on its signatories, which would prescribe the free border crossing and use of IMT-2000 terminals. Such a treaty would give full regulatory and legal certainty to the circulation of terminals in the countries that have signed the treaty.

An existing legal instrument which could help overcome some of the barriers to free circulation is the Information Technology Agreement (ITA), established under the World Trade Organisation (WTO). Signatories to the ITA, numbering more than 40, agree to reduce customs duties to zero by the year 2000 on a range of information technologies, including telecommunications equipment, the categories for which are listed in schedules attached to the ITA. The ITA would not cover all of the problems likely to be encountered in the free circulation of IMT 2000 terminals. Thus, a more comprehensive treaty would need to be negotiated.

The ultimate goal of such a treaty would be the lowering of regulations to a common light regime. Such a treaty could be negotiated e.g. in the framework of WTO. For EU countries such negotiations would be led by the European Commission. However no interested parties have so far taken any initiative towards the development of such a treaty and it is unlikely that such a framework would be available in the required time scale.

5.2 Global conformity assessment

It has been proposed that the ITU should initiate an international scheme for conformity assessment for telecommunications terminal equipment. This organisation would establish and maintain a marking and circulation arrangement, which would be open for interested administrations to join.

European administrations and the USA have not been enthusiastic about the idea of giving such a regulatory role to the ITU. However, some developing countries have supported the idea. Also a centralised type approval system should be in balance with the system of the manufacturers declaration of conformity to be used in Europe in the future.

Within Europe, conformity assessment will be covered by the RTTE Directive. A similar approach on a global basis would be advantageous.

Conclusion: The prospect of a single global conformity assessment regime appears unrealistic at this time but recognition of national and regional type approvals on a mutual basis is both highly desirable and practically achievable.

5.3 MoU-based mechanism

It has been proposed that the GMPCS MoU be used as a model for IMT-2000.

The MoU is an instrument, which harmonises global conformity regulations. In the MoU mechanism, the ITU takes care of practical duties, but its responsibilities are simple and mechanical. The secretariat handles the administrative arrangements.

The GMPCS MoU does not give type approvals and the MoU mark is not a type approval mark. Neither does it give the right to place the equipment on the market. It merely declares that the terminal carrying the mark has passed certain administrative procedures and has been registered with the ITU database. Each country indicates whether and how equipment may be used via a notification process.

The GMPCS MoU and its arrangements contain some aspects, which are not unanimously accepted in Europe as detailed in **Annex 2**.

The benefits and drawbacks of the GMPCS MoU arrangements are considered to be:

Benefits:

- Broad involvement of administrations including, USA, Europe, Brazil, Japan and China.
- Includes all the elements required for global circulation; type approval (conformity assessment), marking, terminal licensing and customs arrangements.
- GMPCS arrangements are a more formal solution than that currently in place for GSM terminals.
- Widely supported by the satellite industry.

Drawbacks:

- MoU is not legally binding on Administrations - it operates on a voluntary, co-operative principle.
- The type approval registry does not fully align with forthcoming EU conformity assessment process.
- Multi-mode equipment requires assessment of operating modes outside the scope of the MoU.
- The marking arrangements could lead to tighter customs inspections and subsequent problems for equipment which is not marked such as second generation terminals, equipment already in service and even IT equipment.

At this stage, the GMPCS MoU approach can not be recommended for IMT-2000 but some elements of the scheme may be utilised. The drawbacks detailed above should be avoided if elements of the MoU option are utilised for IMT-2000.

5.4 Regional regulations

Some European circulation arrangements have been based on CEPT Recommendations. The difficulty in the Recommendation mechanism is that the Recommendations are not binding and they are not implemented by all countries. Therefore the more recent ERC regulation is developed by way of Decisions. Decisions have the advantage that they are more binding and implementation is better followed up, but the fact remains that they are not implemented by all countries.

An example of an ERC Decision on circulation can be found in **Annex 3**. It is proposed that the Regulatory Working Group of the ERC develop a draft ERC Decision on IMT-2000 terminals along the same lines as the example in **Annex 3**. Draft elements can be found in **Appendix A** of **Annex 1**.

One way forward in arranging global circulation could be that other Regional Telecommunications Organisations, such as CITEL and APT develop regional arrangement as the CEPT has done. In such a way a de facto global circulation could be arranged.

Suitable fora need to be identified for the development of the regional regulations.

5.5 ITU Recommendations

ITU Recommendations could be developed to facilitate the global circulation of IMT-2000 terminals. Such Recommendations normally only cover operational and technical matters. However, if they were to address issues such as the licensing of terminal equipment, the scope of the ITU activity would need to be enhanced.

5.6 No global arrangement scenario

In the absence of a global regime, circulation of IMT-2000 terminals is left entirely to national decisions. There is then a danger that authorities in some countries may require the terminals to be individually licensed.

On a national basis there would be no harmony between countries. Other negative effects are detailed elsewhere in the report.

6 EVALUATION OF THE MECHANISMS AND PROPOSALS

The mechanisms described in the previous chapter can be evaluated against the following criteria:

a) Difficulties:

- Time to agree on the mechanism
- Time to implement it
- Costs involved

b) Quality of the result:

- Acceptability
- Regulatory certainty
- Complexity
- Need for additional mechanisms

It is considered that such an evaluation will not lead to a definitive solution and the following summary suggests a possible way forward.

7 SUMMARY

Different mechanisms have been considered to facilitate the global circulation of IMT-2000 terminal equipment. From an analysis of these possibilities no single solution appears to offer a clear way forward to achieve global circulation. An informal approach may be one way to proceed at the start of service for IMT-2000 but this clearly lacks regulatory certainty although in the GSM case it has, for example, proved to be satisfactory. The GMPCS MoU offers a model for a regime offering some degree of regulatory certainty but there may be problems in attempting to adopt such a solution for the terrestrial component of IMT-2000.

In this context it should be noted that a regime for IMT-2000 global circulation is to be valid for the terrestrial and satellite components. However, the GMPCS MoU is now already valid for the IMT-2000 satellite component until a generic IMT-2000 regime will be in place.

Clearly a considerable amount of work on this issue will be required as IMT-2000 develops and a possible way to move forward is as follows:

- Raise the issue in the WTO and WCO.
- Utilise the contacts between CEPT and other regional organisations.
- Continue to raise the issue of global circulation for IMT-2000 terminals at all relevant conferences and other fora.
- Start with an informal arrangement for IMT-2000 and move towards a more formal approach as the system develops.

Although regulatory certainty for global circulation is desirable, it is not likely to be achieved in the near future. A stepwise approach towards this goal appears to be the most promising. Regional recommendations supported by associations of IMT-2000 system operators and manufacturers may pave the way for global agreements under the auspices of ITU, WTO or WCO, which then could be of a generic nature and not be limited to IMT-2000.

A useful initiative could be a policy document produced by administrations. This could state that the administrations support:

- Removal of customs duties as provided for by the ITA and Istanbul agreement;
- no individual licensing for IMT-2000 terminal equipment;
- ITU Recommendations for all IMT-2000 family members stating that:
  - Terminals must not transmit in non authorised bands (receive- before-transmit is one solution), or when not authorised by a suitable network.
  - Terminals must comply with out of band emission requirements.
- Regional standards bodies will produce appropriate detailed standards.

Conclusion: Administrations should work together to develop a policy document along the lines detailed above, as a first step towards the facilitation of global circulation for IMT-2000 terminal equipment.

Some detailed recommendations have been developed in this report and these are included in summary form in a separate section.

8 CONCLUSIONS

Throughout this report a number of recommendations have been developed. These are grouped here for ease of reference.

Conclusion 1:

To achieve the objective of global circulation of IMT-2000 terminals, the removal of existing barriers is to be pursued. Many of these barriers cannot be justified from a technical perspective (e.g. harmful interference) nor from an economic perspective (no risk of by-pass in the absence of an IMT-2000 network).

Conclusion 2:

The constraints to circulation can and should be overcome. By deregulation, proper system-design and quantification of the economic effects, it should be possible to arrive at a true global circulation of IMT-2000 terminal equipment.

Conclusion 3:

The world-wide terminal requirements should provide umbrella requirements covering IMT-2000 and potential fellow modes of multimode terminals to protect other systems and services. The detailed specifications to achieve the umbrella requirements should be developed by regional standard bodies, whilst remaining mutually compatible.

Conclusion 4:

Initially it may be necessary to establish categories of IMT-2000 terminal equipment (including multimode terminals), with only equipment fully complying with the receive-before-transmit principle having unrestricted global circulation. However other arrangements may then be developed to cater for equipment that does not comply with this principle.

Conclusion 5:

Informal arrangements like GSM MoU do not alone give regulatory certainty that users can circulate their terminals in different countries. However, in the case of GSM they have provided a workable solution.

Conclusion 6:

The GMPCS MoU has addressed global circulation for satellite terminals. Although this approach might not be the best solution for IMT-2000, it contains elements that are thought to be useful to achieve a solution for global circulation for IMT-2000 terminal equipment.

Conclusion 7:

Existing mechanisms enabling global circulation for the 2nd generation may not be sufficient to meet third generation markets and services. An innovative approach to regulation for the third generation is required.

Conclusion 8:

The prospect of a single global conformity assessment regime appears unrealistic at this time but recognition of national and regional type approvals on a mutual basis is both highly desirable and practically achievable.

Conclusion 9:

Administrations should work together to develop a policy document along the lines detailed above, as a first step towards the facilitation of global circulation for IMT-2000 terminal equipment.

ANNEX I

CIRCULATION IN EUROPE

1 Existing and planned EU legislation

The current Community legislation establishing the framework for circulation and the type approval regime in the European Union was set up in the Council Directive 91/263/EEC (Telecommunications Terminal Equipment Directive, TTE) on the approximation of the laws of the Member States concerning telecommunications terminal equipment, including the mutual recognition of their conformity. The TTE Directive was amended by Directive 93/68/EEC establishing further measures for the mutual recognition of the conformity of telecommunications terminal equipment and supplemented by Directive 93/97/EEC in respect of Satellite Earth Station equipment.

Directives 91/263 EEC and 93/97/EEC were subsequently codified into a single text (Directive 98/13/EC).

As the above mentioned Directives did not cover a large number of radio equipment, the Commission presented a proposal for a European Parliament and Council Directive on Connected Telecommunications Equipment (CTE) in June 1997 which will cover radio equipment as well as terminal equipment. This draft Directive has been modified during the discussions that have taken place in the Council of the European Union and it is now called the draft Directive on Radio and Telecommunications Terminal Equipment (RTTE). The aim of this draft Directive is to establish a common regulatory framework for the placing on the market and circulation of radio and telecommunications terminal equipment. It also aims to establish a regulatory framework within the European Community for the putting into service of radio equipment, operating in harmonised frequency bands and telecommunications terminal equipment which attaches to the fixed network.

This new RTTE Directive will replace Directive 98/13/EC after coming into force. A Common Position on the draft RTTE Directive has been reached and the Directive is expected to come into force by January 2000.

2 ERC Decision mechanism

The main instrument by which the ERC harmonises frequencies and radio regulatory issues is the instrument of ERC Decisions. After the Decisions are finally approved (after initial approval and public consultation) they are published within two months with a list of administrations which have committed themselves to implement them. This list of administrations is regularly updated when more administrations join. Administrations that have committed themselves are bound to implement the Decision, although a time frame is generally not laid down. Implementation data are regularly discussed at ERC meetings. Since the ERC was not satisfied with the number of implementing countries, an investigation that should result in enhanced implementation is currently being carried out.

The most important Decision on circulation is ERC/DEC/(95)01, which was followed by a number of additional Decisions, covering additional equipment.

3 Other circulation-related ERC Decisions

The ERC/Decision/(95)01 identifies three levels of circulation of radio equipment in CEPT member countries as follows:

1. circulation without permission of using the radio equipment;
2. circulation with permission of using the radio equipment;
3. circulation with the permission of placing the radio equipment on the market.

The Decision only covers the circulation of GSM and DECT mobile equipment, OmniTRACS terminals for the EutelTRACS system, Inmarsat-C terminals, Inmarsat-M terminals and PR-27 mobile stations on levels 1 and 2.

Lately, the ERC has adopted a Decision allowing the circulation of GSM 1800 (formerly known as DCS 1800) mobile terminals in the same way as ERC/DEC/(95)01 does for the radio equipment categories identified therein.

Four more circulation Decisions, dealing with various kinds of satellite terminals were adopted by the ERC in March 1998.

4 Draft elements of ERC Decision for circulation of UMTS terminals

A draft ERC Decision on the circulation of UMTS terminals within the CEPT has been prepared and is currently under discussion. The draft Decision is to be seen in Appendix A.

ERC TG1 has also prepared the following considerations for an ERC Decision concerning the circulation of UMTS terminals.

4.1 Placing terminals on the market

The placing of terminals on the market within the EEA will be covered by the relevant EU Directives. Placing on the market of EEA is therefore not in the scope of the ERC TG1.

As regards non-EEA members of CEPT, the following possibilities seem to exist:

a) Mutual Recognition Agreement or similar arrangement between the country in question and the EU. This procedure is also outside the scope of the ERC TG1.
b) An ERC Decision could be prepared to facilitate the placing of UMTS terminals on the market of non-EEA CEPT countries. Initiatives for such procedures could be developed based on Decision ERC/DEC/(97)10.

c) Any national procedure.

Conclusion: Unless strong initiatives are brought forward, the ERC/TG1 need not consider the placing of UMTS terminals on the market.

4.2 Carriage of UMTS terminals without using them

The standard and the relevant regulation shall ensure that the UMTS terminal can not transmit unless the service is available and authorised in the country where the terminal is to be carried. If this is not the case, the user cannot use the terminal for communication. Administrations shall not cause obstacles against carrying the UMTS terminals.

Authorisation will also be required before the terminal can connect to a network.

4.3 Carriage and temporary use of UMTS terminals

If the terminal is marked with the CE mark and the relevant terrestrial network is present, the carriage and use of the terminal shall be allowed without restrictions both for EU citizens and for foreign visitors. It is not clear whether this matter is fully covered by the EU legislation.

a) Some experts say that the CE mark gives the right to use the equipment without further formalities.

b) Some others say that the CE mark relates only to placing on the market and does not deal with the use of the equipment, but if some basic conditions are met.

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Proposal: As a minimum, CEPT administrations should allow any CE marked UMTS terminal to be carried and used without any formalities, but if some basic conditions are met.

Regarding the temporary use of radio equipment by foreign visitors from non-EEA countries, administrations have implemented the EU legislation in two different ways,

a) In some countries it is not legal according to the present legislation to use the equipment which is not appropriately marked.

b) In some other countries the CE mark does not relate to the use of the equipment. Foreign visitors would be allowed to use their terminals even if they are not CE marked but if some basic conditions are met.

Proposal: EEA and other CEPT administrations should consider permitting UMTS terminals to be used even when they are not CE marked but if some basic conditions are met.

In the main text of this report one possibility is discussed that consideration could be given to the use of a global mark (e.g. the GMPCS MoU mark). Such a mark based on the self-declaration by the manufacturer could give confidence in the equipment so that administrations might allow the carriage and/or temporary use of the equipment. Placing on the market in Europe depends on the EU conformity assessment and CE mark.

If the relevant terrestrial network is not present, the same uncertainty as described above applies for the satellite component. Is it allowed to be used, even if not CE marked?

CEPT markings according to CEPT ERC Decisions would be acceptable in the CEPT territory, i.e. also in the EEA, when endorsed by the European Commission. However, this marking does not apply to placing on the market but only for free circulation and use (in CEPT terminology).

The GMPCS-MoU refers to other markings for global circulation. The technical basis for such markings and the prevailing conformity assessment was established by ITU-R in form of an ITU-R Recommendation. This is a possible model for IMT-2000 terminals. CEPT/ERC could in its own right accept such a regime for its member states, except for the countries which are also EEA members, in which case the European Commission needs to endorse such an arrangement.

Appendix A

Subject: **Discussion Document: Proposal for a draft ERC Decision on the global circulation of UMTS terminals**

Introduction

There is a growing interest in the introduction of UMTS services within Europe. The CEPT ERC has been in the forefront in addressing the matter with the adoption of the ERC Decision ERC/DEC/(97)07 on the identification of frequency bands for UMTS. Other European fora also continue to play a key part in the discussions. The introduction of UMTS within Europe has been addressed by the UMTS Forum and ETSI SMG who have stated that roll out of the UMTS networks begin by about the year 2002.

The European Commission has also played an active part in promoting UMTS. The responses to the consultation conducted by the European Commission indicated the desire of Member States to authorise UMTS.

A number of CEPT administrations are currently taking steps to authorise UMTS within the time scale identified above. With the leading role played by the ERC, it is proposed that ERC should also adopt further measures to facilitate the introduction of UMTS within the CEPT countries. Whilst discussions are continuing on the other measures, such as the migration of existing services, it is proposed that TG1 considers the attached draft ERC Decision on free circulation of UMTS terminals. This draft Decision is based on similar Decisions adopted by the ERC in regard to free circulation of radio terminals.

This Decision deals only with the circulation of UMTS terminals in the CEPT. The global circulation of IMT-2000 terminals is currently under consideration in other fora.

This Decision has been drafted under the regulatory regime of the following EU Directives:

- Council Directive 91/263/EEC on the approximation of the laws of the Member States concerning telecommunications terminal equipment, including the mutual recognition of their conformity;
- Council Directive 93/97/EEC supplementing Directive 91/263/EEC in respect of satellite earth station equipment;
- Directive 98/13/EC of the European Parliament and of the Council relating to telecommunications terminal equipment and satellite earth station equipment including the mutual recognition of their conformity.

The Telecommunications Council of the European Union has reached political agreement on the development of a directive on radio and telecommunications terminal equipment and the mutual recognition of their conformity. There may be a need to adapt the text of this Decision when this new legislation is implemented.

FREE CIRCULATION, USE AND LICENSING OF UMTS TERMINALS

The European Conference of Postal and Telecommunications Administrations,

considering:

a) that WARC-92 allocated the bands 1885 - 2025 MHz and 2110 - 2200 MHz to the mobile service and intended to be used for FPLMTS (now referred to as IMT-2000);

b) that use of the frequencies within the bands mentioned in Considering a) above has been harmonised within Europe with the CEPT ERC Decision ERC/DEC/(97)07 which designates the frequency bands 1900 - 1980 MHz, 2010 - 2025 MHz and 2110 - 2170 MHz for the UMTS terrestrial component, and 1980 - 2010 MHz and 2170 - 2200 MHz for the UMTS satellite component;

c) that terrestrial UMTS is identified as the third generation of mobile communications and it is likely that all European CEPT countries will adopt UMTS as the next generation of mobile communications following the success of GSM;

d) that it is desirable for administrations to implement a licensing regime, which facilitates the free circulation of UMTS terminals within the CEPT;

e) that the exemption of UMTS terminals from requiring an individual licence provides for the concept of free circulation and use which means the right to carry and use an UMTS terminal without any further authorisation;

f) that within the EEA the conformity assessment of UMTS terminals will be carried out to the relevant harmonised standards, or, pending the adoption thereof, to other standards demonstrating the compliance with essential requirements.

DECIDES

1. that this Decision shall not impede EEA member countries from fulfilling their obligations according to community law;

2. that administrations shall not require individual licences for the use of UMTS terminals;

3. that administrations which have implemented this Decision shall allow the free circulation and use of all UMTS terminals [conforming to the relevant harmonised standards] [and certified for use within CEPT];

4. that this Decision shall enter into force on XX.YY.1998.

5. that CEPT Member Administrations shall communicate the national measures implementing this Decision to the ERC Chairman and the ERO when the Decision is nationally implemented.

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ANNEX II

THE GMPCS MOU

1 Background to the GMPCS MoU

The GMPCS MoU requests signatories to develop arrangements for GMPCS terminals on

- the essential requirements for type approval and the mutual recognition of type approval;
- general licensing and mutual recognition of licences;
- marking of terminals;
- recommendations regarding exemption from customs restrictions and
- access to traffic data.

The GMPCS MoU group has developed a set of arrangements to fulfil the MoU. The full text of the arrangements can be found on the ITU web site at www.itu.ch/gmpcs/gmpcs-mou, but in brief their content is the following:

1.1 Type approval

Type approval should be based on essential requirements, (not necessarily to be understood as being the same as essential requirements within EEA legislation). There are several possibilities (at the discretion of the administration) to demonstrate compliance with the essential requirements. Administrations are encouraged to notify type approvals to ITU.

The arrangements introduce a “GMPCS MoU” marking for terminals type approved and notified to the ITU. Mutual recognition of type approvals is encouraged through Mutual Recognition Agreements or other reciprocal arrangements or by recognition of the GMPCS MoU mark or any other mark.

In the European Union and the EEA only the CE-mark can legally be used to demonstrate type approval. The GMPCS MoU mark is a registry mark indicating that the terminal type has undergone certain procedures and been registered at the ITU database. The GMPCS MoU mark facilitates the global circulation through creating confidence. It is assumed that administrations would allow foreigners to use their terminals temporarily, if the terminals are marked with the GMPCS MoU mark.

The GMPCS-MoU mark is the following text, in English only: the letters “GMPCS-MoU”, followed by the abbreviation “ITU”, followed by the word “Registry”. The format of this registry mark will be decided by the ITU secretary-general in consultation with the representatives of the Signatories.

1.2 Licensing

Administrations are urged not to require individual licences for GMPCS terminals when some basic conditions are met. These conditions relate to frequency use, authorisation of the GMPCS system in question, possibility of the satellite system to control the terminal, fulfilment of essential requirements and protection of other services from interference. Circulation of the terminals (by foreign visitors) should be allowed if compliance with essential requirements is demonstrated by means of the GMPCS MoU mark or another recognised mark.

Even if the conditions above are not met, foreign visitors should be allowed to carry their terminals without using them.

1.3 Access to traffic data

GMPCS system operators should provide administrations with information on traffic originating in or routed to the territory of the administration. The content of the traffic data is agreed between the operator and the administration; however, the data should not include confidential information subject to the national laws of the country in question.

In addition to providing the traffic data, system operators assist administrations in order to identify unauthorised traffic flows.

1.4 Customs arrangements

Administrations will recommend to their national customs authorities to have a relaxed attitude towards customs regulations of GMPCS terminals. The relaxed attitude should include reduced duties for terminals, which are placed on the market and exemption from customs duties for visitor's terminals.

2. Problems and difficulties encountered in the work of GMPCS MoU:

2.1 Global type approval versus EEA type approval

The EEA legislation on testing, certification and conformity assessment has been designed to provide for an efficient internal market within the EEA. It is built on elements such as common European marking (the CE mark), presence of the manufacturer of the equipment in the EEA and recognition of conformity assessment given in another EEA Member State.

It has been suggested that global circulation will only be possible if there is a global type approval regime. Global type approval however seems not possible to achieve if existing national and regional type approval regimes are maintained. For example a GMPCS terminals can only access the EEA market when properly marked with the CE-mark. The CE-mark can only be affixed if the conformity of the GMPCS terminal has been assessed in an EEA country or one where there is an MRA in place.

This is not an ideal situation when we think about global type approval arrangements for UMTS.

For non-European countries the type approval would then take place either on a regional basis or country by country, or through the Mutual Recognition Agreement procedure. The implementation of the RTTE Directive does not change this situation. Negotiation of many MRAs could take a very long time indeed.

2.2 Weakness of type approval procedures

The type approval procedures of GMPCS terminals are rather weak. As global recognition of type approvals was not possible, the type approval and marking arrangement is more or less a list of all possible regimes: the compliance with requirements may be demonstrated by almost any standard at the discretion of the relevant authority. Administrations are recommended to consider, whether manufacturers declaration can be used. Type approvals are encouraged to be notified to the ITU. Type approvals given by other administrations may be accepted.

GMPCS is presently not of vital importance to Europe. Therefore the weakness of GMPCS type approval arrangements is not a major disadvantage for us. However, the situation will probably be totally different with regard to UMTS. Care must be taken so that the European legislation or regulation does not hinder the development of a global one-stop type approval for UMTS/IMT-2000 terminals.

2.3 Use of terminals by foreign visitors

The existing EEA legislation is somewhat unclear about the relationship between use of and type approval of telecommunications equipment. Some experts say that even temporary use of a terminal requires type approval. Some experts say that type approval relates only to placing on the market and not to the use of equipment.

At least one EU country has implemented the EEA legislation nationally in a way, which necessitates type approval before the equipment can be temporarily used. On the other hand, at least one EU country has implemented legislation which under given circumstances allows foreign visitors to use non-approved equipment, if some basic conditions are met.
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So far, this lack of clarity has not caused any difficulty, since in practice there has not been any non-European terminals that operate in Europe. GSM, although it is operated and manufactured also outside Europe, is to a large extent a European system, and the type approval of GSM terminals takes place according to European procedures.

This will not be the case with regard to GMPCS. There may be equipment, which is manufactured e.g. only for the Far East market and it will therefore not be placed on the market in Europe. Are non-European visitors obliged to obtain European type approval and CE-mark for their terminals before they can be used in Europe, or maybe even before they can be brought into Europe?

The problems alluded to above must be solved in a legally sound way before UMTS/IMT-2000 is implemented.

2.4 Availability of traffic data

Availability of traffic data is a particularly sensitive area, especially when addressed at a global level, i.e. with a multitude of countries with very different legislation and very different degrees of liberalised markets.

2.5 Customs issues.

Customs issues are best dealt with through the mechanisms of the World Customs Organisation's Istanbul convention and WTO's Information Technology Agreement.

3. OVERVIEW OF THE GMPCS MOU AND ITS ARRANGEMENTS

According to the GMPCS Arrangements, a GMPCS Terminal Manufacturer may affix the GMPCS MoU mark to a GMPCS Terminal provided that the following conditions are met:

a) At least one Administration and/or Competent Authority having implemented the Arrangements has issued a Type Approval for a class of GMPCS Terminals which includes the unit and has notified this to the ITU
b) The Operator of the GMPCS System with which the subject GMPCS Terminal is to be used has notified the ITU that it has implemented these Arrangements and that it has authorised the subject GMPCS Terminal for connection to its GMPCS System;
c) The GMPCS Terminal Manufacturer has notified the ITU that it has implemented these Arrangements and
d) *The GMPCS Terminal Manufacturer has been informed by the ITU Secretary general that the manufacturer can affix the GMPCS MoU mark.*

The procedures for implementing the GMPCS arrangements were agreed at a meeting at the ITU of the GMPCS MoU group 12-13 March 1998. At this meeting, the wording of the GMPCS MoU ITU Registry mark was agreed. It was also agreed that the ITU should be the depository of the MoU and registry for notifications. Acceptance of the mark and the ITUs role and points about cost recovering were agreed by the ITU Council at its meeting in late May. The ITU Council had already previously agreed that the ITU role must be on the basis of full cost recovery. The GMPCS industry (as of end May) has been working on a formula for sharing the costs of the ITUs role as depository.

ANNEX III

EXAMPLE OF AN ERC DECISION ON FREE CIRCULATION

EUROPEAN RADIOCOMMUNICATIONS COMMITTEE

ERC Decision
of 30 June 1997
on free circulation, use and licensing
of Mobile Earth Stations of Satellite
Personal Communications Services (S-PCS)
operating within the bands
1610-1626.5 MHz, 2483.5-2500 MHz, 1980-2010 MHz and 2170-2200 MHz within the CEPT

(ERC/DEC/(97)05)

EXPLANATORY MEMORANDUM

1. INTRODUCTION

A number of new satellite systems offering services for individual users will be introduced before the year 2001. These new satellite systems are identified as providing Satellite Personal Communications Services (S-PCS), and they will provide global or regional coverage. Other terms such as Global Mobile Personal Communications by Satellite (GMPCS) or Satellite-Personal Communication Networks (S-PCN) have also been used in different fora to describe S-PCS.

In dealing with S-PCS systems administrations may have to address several types of licensing requirements; e.g. for network operators, service providers, gateways, and MESs. This ERC Decision covers free circulation and use, and exemption from the requirement of individual licensing of MESs. The Decision makes necessary references to conformity assessment to the relevant Technical Basis for Regulation (TBR) and appropriate marking regimes. The free circulation and use referred to in this Decision shall mean the right of the user to carry and use S-PCS Mobile Earth Station(s) within the territory of all administrations participating in this Decision, without requiring individual authorisations or licences.

2. BACKGROUND

WARC-92 allocated the bands 1610 - 1626.5 MHz (Earth-to-space), 2483.5 - 2500 MHz (space-to-Earth), 1980 - 2010 MHz (Earth-to-space) and 2170 - 2200 MHz (space-to-Earth) to the mobile satellite service on a primary basis, and the band 1613.8 – 1626.5 (space-to-Earth) on a secondary basis. The designation of the frequencies to individual S-PCS systems in Europe is given in the ERC Decision on the Harmonised Use of Spectrum for Satellite Personal Communication Services (S-PCS) operating within the bands 1610-1626.5 MHz, 2483.5-2500 MHz, 1980-2010 MHz and 2170-2200 MHz (ERC/DEC/(97)03).

The European administrations have been following the principle of issuing individual licences for single radio equipment. However, during the last decade administrations have started to exempt a number of these equipments from requiring an individual licence. The CEPT/ERC Recommendation ERC/REC 01-07 on a harmonised regime for exemption from individual licensing of radio equipment defines the criteria under which radio equipment should be exempt from individual licensing.

3 GENERAL APPROACH FOR FREE CIRCULATION AND USE AND LICENSING

Given that S-PCS systems are intended to offer regional or global services, placing a requirement for individual licences for MESs would be detrimental to the concept of free circulation and use. Therefore, this Decision requires that S-PCS MESs shall be exempted from individual licensing. The implementation of the concept of free circulation and use requires administrations to accept the use of the S-PCS MESs originating from other CEPT countries without requiring any further authorisations or licences.

The free circulation and use of MESs and their exemption from individual licensing is predicated upon:

- the use of harmonised frequency bands by MESs without having the potential to cause harmful interference to other services;
- type approval of MESs to an agreed standard and also an agreed marking regime.

It is expected that conformity assessment of S-PCS mobile earth stations will be carried out to harmonised standards. There may, however, be an interim period when harmonised standards are not available. During this period the conformity assessment may be carried out to other specifications which demonstrate compliance with the essential requirements.

4. REQUIREMENT FOR AN ERC DECISION

The S-PCS systems will provide a global service, which greatly facilitates the mobile communications throughout the world. Therefore there is a need to arrange free circulation and use of S-PCS MESs without requiring individual licences or other radio regulatory formalities. This Decision has been prepared to facilitate these goals.

ERC DECISION
of 30 June 1997

FREE CIRCULATION, USE AND LICENSING OF MOBILE EARTH STATIONS OF SATELLITE PERSONAL COMMUNICATIONS SERVICES (S-PCS) OPERATING WITHIN THE BANDS 1610-1626.5 MHz, 2483.5-2500 MHz, 1980-2010 MHz AND 2170-2200 MHz WITHIN THE CEPT

(ERC/DEC/(97)05)

The European Conference of Postal and Telecommunications Administrations,

considering:

a) that WARC-92 allocated the bands 1610 - 1626.5 MHz (E→Sp), 2483.5 - 2500 MHz (Sp→E), 1980 - 2010 MHz (E→Sp) and 2170 - 2200 MHz (Sp→E) to the mobile satellite service on a primary basis, and the band 1613.8 - 1626.5 MHz (Sp→E) on a secondary basis;

b) that a number of S-PCS systems providing both global and regional coverage are to be brought into operation in the bands mentioned in considering (a) above;

c) that the spectrum for S-PCS systems will be harmonised via the ERC Decision on the Harmonised Use of Spectrum for Satellite Personal Communication Services (S-PCS) operating within the bands 1610-1626.5 MHz, 2483.5-2500 MHz, 1980-2010 MHz and 2170-2200 MHz (ERC/DEC/(97)03);

n) that S-PCS systems will be assessed in accordance with the milestone criteria given in ERC Decision CEPT/ERC/DEC(97)03 in order to remove as far as possible the possibility of the existence of paper satellites;

d) that the bringing into operation of S-PCS systems in the bands mentioned in considering (a) above is subject to satisfactory progress of frequency co-ordination in accordance with the procedures established by the ITU Radio Regulations;

e) that the use of S-PCS MESs could cause interference to other services;

f) that it is desirable for administrations to implement a harmonised licensing regime for S-PCS MESs within the CEPT;

g) that the exemption of MESs from requiring an individual licence provides for the concept of free circulation and use which means the right to carry and use an S-PCS MESs without any further authorisation;

h) that the harmonisation of authorisation conditions and co-ordination of procedures relating to S-PCS are given in the ECTRA Decision on harmonisation of authorisation conditions and co-ordination of procedures in the field of Satellite Personal Communications Services (S-PCS) in Europe; (CEPT/ECTRA/DEC(97)02).

i) that within the EEA the conformity assessment of S-PCS MESs will be carried out to the relevant harmonised standards, or, pending the adoption thereof, to other specifications, which demonstrate compliance with essential requirements.

DECIDES

1. that this Decision shall not impede EEA member countries from fulfilling their obligations according to community law;

2. that administrations shall not require individual licences for the use of MESs of S-PCS systems, provided that:

   - the satellite system ensures that the MESs operate within the frequency bands identified in the ERC Decision ERC/DEC/(97)03;
   - the provision of S-PCS, within which the MES operates, has been authorised in accordance with national regulations and the ECTRA Decision ECTRA/DEC(97)02;
   - harmful interference to the radio astronomy service in the band 1610.6-1613.8 MHz is not caused by the MES;
   - the MES fulfils the requirements of the country where it is used and is marked accordingly;

3. that administrations which have implemented this Decision shall allow the free circulation and use of all MESs (either single mode or multimode) originating from CEPT provided that the MESs fulfils the requirements in decides 2;

4. that free circulation without permission to use for all MESs (either single mode or multimode) originating from CEPT and not fulfilling the requirements in decides 2, will be allowed by each administration when the MES is prohibited from operating by the S-PCS network operator whilst it is located within the territory of the administration;

5. that this Decision shall be reconsidered each time the ERC Decision on the Harmonised Use of Spectrum for Satellite Personal Communication Services (S-PCS) operating within the bands 1610-1626.5 MHz, 2483.5-2500 MHz, 1980-2010 MHz and 2170-2200 MHz (ERC/DEC/(97)03) is revised;

6. that this Decision shall enter into force on 1 October 1997.

7. that CEPT Member Administrations shall communicate the national measures implementing this Decision to the ERC Chairman and the ERO when the Decision is nationally implemented.

European Radiocommunications Committee Decision

CEPT/ERC/DEC/(97)05

on free circulation, use and licensing of mobile earth stations of satellite personal communications services (S-PCS) operating within the bands 1610-1626.5 MHz, 2483.5-2500 MHz, 1980-2010 MHz and 2170-2200 MHz within the CEPT

As of 1 October 1997 the following CEPT Members have committed themselves to apply the terms of this Decision:

Austria
Finland
Germany
Liechtenstein
Lithuania
Netherlands
Norway
Spain
Switzerland
United Kingdom

After 1 October 1997 the following CEPT Members have committed themselves to apply the terms of this Decision:

Croatia
Denmark
Iceland
Ireland
Sweden