ACIF C564:2004

AUSTRALIAN COMMUNICATIONS INDUSTRY FORUM

INDUSTRY CODE

DEPLOYMENT OF MOBILE PHONE NETWORK INFRASTRUCTURE

Industry Code – *Deployment of Mobile Phone Network Infrastructure*

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EXPLANATORY STATEMENT

Introduction

The aim of the Code is to deal with the concerns of the community about the risks of radiofrequency electromagnetic radiation (RF EMR) exposure by allowing the community and councils to have greater participation in decisions made by Carriers. It cannot change the existing regulatory regime at local, State or Federal level, but can only supplement the existing requirements already imposed on Carriers.

The Code supplements the requirements already imposed on Carriers under the existing legislative scheme by requiring them to consult with the local community and to adopt a precautionary approach in planning, installing and operating radiocommunications infrastructure.

The Code does not apply to non-public radio networks. Non-public radio networks are licensed under the *Radiocommunications Act 1992*, which is administered by the Australian Communications Authority (ACA). An example of a non-public radio network would be a council radio network used by council employees to communicate with each other.

Background - Statement of the Issues

Radiocommunications infrastructure is being built at a rapid rate to supply telecommunications services to an increasingly large customer base. Notwithstanding the complex regulatory scheme that applies to many facilities, there has been a considerable community response/reaction to the deployment (planning, installation and operation) of some radiocommunications infrastructure.

A common request of industry is that it should adopt a precautionary and more consultative approach to the deployment of radiocommunications equipment. In relation to both low impact and non low impact facilities, this Code requires a more consultative approach and provides a context for application of a Precautionary Approach in the deployment of radiocommunications infrastructure. The Precautionary Approach is embodied in Australia's Intergovernmental Agreement on the Environment and a number of international documents (See Appendix A – *The Precautionary Principle*).

An underlying principle of this Code is that public health and safety is of paramount importance. In the context of this Code, the precautionary principle therefore means that precautions are taken to minimise exposure to radio emissions by virtue of its possible association with health problems in order to protect people even though radio emissions at low levels have not been proven to cause such problems.

In this Code, the Precautionary Approach is manifested in the obligations it imposes on Carriers. For example, Carriers are required to:

- design and operate radiocommunications infrastructure to minimise RF EMR exposure;
- develop consultation plans about the deployment of infrastructure that is not subject to Development Approval;
- turn off transmitters that are out of service;
- test their decisions about the deployment of infrastructure against a range of important factors; and
- document their decision making processes about the deployment of infrastructure.

Furthermore, this Code imposes obligations on Carriers regarding consultation. For example, the Code embraces the view that Carriers should notify and consult with a broader range of community interests than they might otherwise be obliged to.

Current Regulatory Arrangements

This Code fits within an existing regulatory scheme that comprises:

A. the *Radiocommunications Act 1992*;
B. the *Telecommunications Act 1997*, particularly Schedule 3 of that Act;
C. the *Telecommunications Code of Practice 1997* issued by the Minister which is made under Schedule 3;
D. the *Telecommunications (Low Impact Facilities) Determination 1997*; and
E. laws and regulations at State Territory and Local Government level.

A. Radiocommunications Act

The *Radiocommunications Act* 1992 (Cth) provides for two main mechanisms for the Australian Communications Authority (ACA) to regulate EMR from radiocommunications devices:

(i) under section 162, the ACA may make mandatory standards to protect the health and safety of people who operate, work on, use or are reasonably likely to be affected by the operation of radiocommunications transmitters; and

(ii) under section 107, the ACA is able to determine specific licence conditions with which operators of particular radiocommunications devices must comply.

Using its power to set standards, in March 2003, the ACA introduced the *Radiocommunications (Electromagnetic Radiation – Human Exposure) Standard* 2003 to apply to certain mobile transmitters including cellular mobile phone facilities and two way radios. Amongst other things, this sets mandatory limits on EMR exposure from such equipment.

Using its power to set licence conditions, in March 2003, the ACA introduced the *Radiocommunications Licence Conditions (Apparatus Licence) Determination* 2003. Amongst other things, this determination sets certain mandatory limits on public exposure to EMR from mobile base stations operated under an ACA licence. Carriers operating mobile base stations require a licence from the ACA and must comply with these licence conditions.

The limits for public exposure to EMR adopted by the ACA from March 2003 are based on the *Radiation Protection Standard – Maximum Exposure Levels to Radiofrequency Fields – 3kHz to 300GHz*, published by the Australian Radiation and Nuclear Safety Agency (ARPANSA) in 2000, referred to as the ARPANSA Standard.

B. Telecommunications Act

The *Telecommunications Act 1997* establishes a regime for Carriers' rights and responsibilities when inspecting, maintaining or installing telecommunications facilities.

Schedule 3 provides authority for Carriers to inspect land, maintain facilities or install any declared 'low impact facilities' or temporary defence facilities. In these cases, Carriers have statutory immunity from certain State and Territory law. However, when they undertake these activities, they must comply with certain requirements that are set out in Schedule 3 (see below) of the *Telecommunications Act 1997* and additional legislative requirements that have been imposed by the Minister in the *Telecommunications Code of Practice 1997*. These have effect as Carrier licence conditions.

There is also provision for a Carrier to apply to the ACA for a "facilities installation permit" to carry out installation of facilities where the Carrier does not obtain the approval of the relevant State, Territory or local government body or the owner of the land. However, this process involves onerous obligations and is little used.

In very general terms, Schedule 3 deals with the conditions on which Carriers must exercise their powers of inspection, maintenance and installation. The conditions deal with, for instance:

- restoration of land
- doing as little damage as possible
- the giving of notice to certain interested parties like owners and occupiers
- agreements that may be entered with parties
- best practice
- noise
- compliance with relevant industry standards and codes.

However, Schedule 3 also allows the Minister to set additional conditions in a Code of Practice.

C. Telecommunications Code of Practice 1997

The *Telecommunications Code of Practice 1997* repeats and builds on the obligations that are in Schedule 3. The *Code of Practice* is set out in chapters each of which deals with the obligations on Carriers when undertaking five kinds of activities. Three of those activities are relevant here:

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inspecting land, installing low impact facilities and maintenance of facilities. The additional requirements deal with, for example:

- additional notice requirements including to the Environment Secretary;
- additional noise requirements;
- procedures for dealing with objections; and
- compliance with recognised industry codes and standards.

This last requirement is significant because it makes it compulsory for Carriers to comply with Codes that deal with relevant activities covered by this Code. Since it is a condition of Carriers' licences that they must comply with the *Telecommunications Act 1997* and the Ministerial Code, and the latter requires compliance with certain provisions of this ACIF Code, if Carriers do not comply with those provisions they may be in breach of their licence conditions.

D. The Low Impact Determination

The *Telecommunications (Low-impact Facilities) Determination 1997* as amended (the LIF determination) defines what is meant by "low impact facilities". The policy rationale for treating Low Impact Facilities differently was to achieve a balance between authorising facilities that are essential to maintaining telecommunications networks, and minimising significant planning or environmental issues of concern to the local community.

The determination does not, and cannot, list any aerial cabling or certain (greater than 5 metres) mobile telecommunications towers. This means that the installation of these facilities, which have been among the most controversial forms of infrastructure, are regulated under State and Territory laws unless the Carrier obtains a facilities installation permit.

As mentioned above, although the installation of Low Impact Facilities is exempt from planning laws, Carriers must comply with the relevant requirements in Schedule 3 and the Telecommunications Code of Practice including notification of land owners, occupiers and others.

The Low Impact Determination and the Telecommunications Code of Practice are available at www.dcita.gov.au under Legislation or from Commonwealth Government Bookshops.

E. State and Territory laws

The planning laws and practices in each State, Territory and local government area differ widely and it is beyond the scope of this Code to summarise them. However, State and Territory governments are progressively introducing Codes of Practice and statutory controls dealing with new telecommunications facilities under their jurisdiction. These State and Territory wide controls provide design and siting guidelines, measures to protect local heritage and other controls, against which local Councils can assess Development Applications. Readers are advised to make their own enquiries of the relevant planning authority.

Why Current Regulatory Arrangements are Inadequate

There is a perception in many communities that Carriers do not take a Precautionary Approach when designing, building and operating facilities. Under the existing regulatory regime, there is no clear statement of what a Precautionary Approach involves, nor is there any explicit identification of what precautionary actions should be undertaken.

Some people have expressed dissatisfaction with the existing human exposure levels to radio emissions so adoption of a Precautionary Approach as outlined in this Code is intended to address those concerns.

At the Federal level the law deals to only a limited extent with consultation and at the State and local government level there is a wide diversity of consultation practices.

How the Code Builds on and Enhances the Current Regulatory Requirements

This Code is intended to supplement the present regulatory regime by extending the obligations on Carriers, particularly in relation to the consideration of radiation exposure and community consultation. By stating the application of a precautionary approach, there will be greater transparency and accountability of Carriers' activities. Over time this should develop a greater confidence within the community in assessing the activities and operations of Carriers.

There is a need to standardise the type of information that is to be made available by Carriers, as well as some clarification of the methods by which information can be provided to stakeholders. At present each Carrier develops its own approaches to this issue which has occasionally left the external stakeholders confused in dealing with different presentation methods, and unable to directly compare various types of information.

What the Code will Accomplish

This Code attempts to deal with some of the issues raised in the community's response to the deployment of certain radiocommunications infrastructure by, for example:

- standardising the obligations on Carriers by providing a set of rules so that Carriers are made aware of their increased responsibilities;
- encouraging all participants in the industry to responsibly exercise the powers and immunities described in current telecommunications legislation; and
- requiring Carriers to notify Councils about proposals for installation of all radiocommunications infrastructure prior to construction.

However, it is important to mention that not all of the community's concerns can be legally dealt with in a Code of this sort.

What the Code cannot do

Much of the public response to the draft Code raised issues that can only be dealt with by changing the present legislative scheme, particularly the Low Impact Facilities Determination. It is not within the scope of this Code or within the power of the ACIF committee to change that scheme. Changes to this legislation are the responsibility of the Commonwealth, State and Territory Governments and Parliaments only. This Code can fit within the scheme but not change it.

A further restriction is that, because the Code draws its authority from the *Telecommunications Act*, it can apply only to telecommunications Carriers, carriage service providers and content service providers and certain others. However, as it is only Carriers who undertake the kinds of activities covered by the Code, it has been decided that the Code should apply only to them. This means, of course, that it is not binding on Broadcasters licensed under the *Broadcasting Ac*t or on many other bodies whose facilities are licensed under the *Radiocommunications Act*. For the same reason it cannot be binding on individuals, Councils or third parties who are not Carriers.

It is noted that some community concern exists regarding the impact of radiocommunications infrastructure on surrounding property values. This Code cannot directly deal with this issue but it attempts to address these concerns by:

(i) consideration of community input on visual impact in this Code's consultation processes; and

(ii) the application of the Precautionary Approach.

One of the issues that has attracted considerable community discussion is co-location. Co-location is the practice of siting a number of different telecommunications facilities, often owned by different Carriers, in the one location. It is encouraged by Federal legislation as an efficient way to increase service levels and competition, while limiting the profusion of new towers and other infrastructure.

However, co-location may not always be a desirable option because:

- adding additional antennas increases emissions;
- it may be visually unacceptable;
- there are physical and technical limits to the amount of infrastructure that masts are able to support;
- the planned RF coverage may not be achieved by a particular Carrier at the location.

In this Code, co-location is one of the many factors that must be considered by a Carrier in the siting and design of facilities, but should not be adhered to at the expense of other considerations identified by Councils and communities as important.

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What the Code can Achieve and how the Objectives will be Achieved

This Code is made under Part 6 of the *Telecommunications Act*. The way the legislation works is that ACIF, representing a section of the telecommunications industry, makes the Code and, if the ACA is satisfied that it meets certain statutory criteria, the ACA must register it. Upon registration, the Code becomes mandatory on all Carriers.

Following registration, if there is a contravention of this Code, the ACA may warn a Carrier about the contravention, or direct the Carrier to comply with the Code. Failing to comply with a direction may render the Carrier liable to significant financial penalties.

Carriers may also have obligations under State and Territory laws, however these matters are outside the operation of this Code.

In developing this Code, the Working Committee has recognised that some areas are particularly sensitive to the community and has endeavoured to respect this sensitivity. Thus the Code requires Carriers, when selecting a site, to "have regard to … the likelihood of an area being a community sensitive location" and to balance this with other considerations (clause 5.1.4). It also requires Carriers, in designing a consultation plan for a site, to "have regard to … community sensitive locations" (clause 5.5.5).

However, the Code does not, as was requested in some submissions, specify distances at which infrastructure must be sited from community sensitive locations. This decision was taken by the Committee on the basis that an arbitrary distance does not necessarily reflect a precautionary approach. For example, infrastructure sited further from a sensitive area may need to operate at greater power in order to meet a Carrier's service requirements and this may result in higher exposures in the area.

Nevertheless, the Working Committee recognises that there is considerable public interest in avoiding sensitive sites and a need to respect communities' sensitivities. It is expected that the Code provides sufficient latitude to negotiate acceptable outcomes in individual circumstances.

Anticipated Benefits to Consumers and the Public

Councils will be notified about future proposals for radiocommunications infrastructure in their area.

The Code embodies a Precautionary Approach in that it seeks to minimise unnecessary and incidental radio emissions from radiocommunications infrastructure.

Registration of this Code will improve and increase Carrier's consultative obligations.

Anticipated Benefits to Industry

The Code establishes uniform guidelines that will apply to all Carriers.

The Code will also provide Carriers with an opportunity to develop better working practices with Councils.

Anticipated Costs to Industry

Industry will be constrained by the requirements of the Code.

Requirements to consult more broadly and to provide information not previously available may impose some delays in infrastructure deployment, will require extra resources and will increase the financial cost to industry.

Implementation of a Precautionary Approach will increase cost to industry.

Anticipated Costs to Consumers and the Public.

Financial costs to industry will result in increased costs to consumers.

Where Code compliance is not economically or technically feasible for Carriers, some consumers may experience an absence of service.

Councils may also experience increased demand on their resources as a result of Carrier's code compliance.

2004 Revision

A review of the ACIF C564:2002 ***Deployment of Radiocommunications Infrastructure*** Industry Code was undertaken as specified in the Code twelve months after registration by the Australian Communications Authority, i.e. October 2003. This Code revision has been undertaken following that review to clarify and provide certainty for all parties in the implementation of the Code. In the course of the revision, it was agreed to change the title of the Code to the ***Deployment of Mobile Phone Network Infrastructure*** Industry Code, to better reflect the scope of the Code.

Brent Gerstle
Chairman
OCRP/WC33 – ***Radiocommunications Infrastructure*** Working Committee

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1 SCOPE AND OBJECTIVES

This Code is the ACIF C564:2004 ***Deployment of Mobile Phone Network Infrastructure*** Industry Code.

1.1 Scope

1.1.1 This Code applies to Carriers who are:

(a) installing;

(b) intending to install;

(c) operating; or

(d) contracting or arranging for the installation of

fixed radiocommunications infrastructure used, intended to be used, or capable of being used to supply Public Mobile Telecommunications Services.

Note: This Code also covers the work of contractors or agents working on behalf of Carriers.

Note: A Public Mobile Telecommunications Service is a publicly accessible mobile phone network, as distinct from a non-public network, for example, an Immediate Circle.

1.1.2 However, this Code does not apply to Carriers in relation to the intended installation or operation of Exempt Radiocommunications Infrastructure.

Note: The following expressions are defined in Section 3:

Exempt Radiocommunications Infrastructure means:

(a) radiocommunications infrastructure installed at the request of the occupier to supply services exclusively to that property and not for re-transmission by radiocommunications to another property; or

(b) radiocommunications infrastructure used or intended to be used for the purpose of providing a facility for use by, or on behalf of, a defence organisation for defence purposes; or

(c) radiocommunications infrastructure used or intended to be used for the sole purpose of facilitating the provision of emergency services by emergency services organisations; or

(d) radiocommunications infrastructure used or intended to be used for the sole purpose of carrying of communications between 2 or more end users, where each end user is within the Immediate Circle of the operator of the radiocommunications infrastructure; or

(e) Appendix F Equipment.

Appendix F Equipment means fixed, mobile or portable radiocommunications equipment that is intended for operation by Carriers or non-Carriers, and which would otherwise meet the exemption from evaluation requirements set out in Appendix F.

Example: Appendix F is intended to address low power devices such as a cordless phone which comprises a base unit and handset and would generally be exempt from evaluation under the 2002 ARPANSA Standard.

Note: Appendix F Equipment applies to equipment that meets the exemptions in Appendix F. This applies whether the equipment is fixed, mobile or portable.

Note: Appendix F is an extract from the *Radiation Protection Standard – Maximum Exposure Levels to Radiofrequency Fields – 3kHz to 300GHz*, published by the Australian Radiation Protection and Nuclear Safety Agency (ARPANSA) in 2002.

Emergency Service Organisation includes, but is not limited to:

(a) police forces or services;

(b) fire services (urban and rural); and

(c) ambulance services.

Immediate Circle has the same meaning as in the Act.

Note: An Immediate Circle is a non-public network used within an organisation. For example, a council radio network used by council employees to communicate with each other, a taxi service network or a regional water authority network.

1.2 Objectives

The objectives of this Code are:

(a) to apply a Precautionary Approach to the deployment of radiocommunications infrastructure;

(b) to provide best practice processes for demonstrating compliance with relevant exposure limits and the protection of the public;

(c) to ensure relevant stakeholders are informed and consulted before radiocommunications infrastructure is constructed;

(d) to specify standards for consultation, information availability and presentation;

(e) to consider the impact on the well being of the community, physical or otherwise, of radiocommunications infrastructure; and

(f) to ensure Council and community views are incorporated into the radiocommunications infrastructure site selection.

1.3 Commencement and Application of Code

1.3.1 The provisions of this Code will take effect immediately upon registration of this Code by the ACA.

1.4 Relationship to Other Laws

1.4.1 Nothing in this Code affects any rights or obligations under any Commonwealth, State or Territory law.

1.4.2 The consultation requirements of this Code do not apply to infrastructure that requires Development Approval. In such cases it is expected that public consultation will occur though the Development Application process.

1.5 Interpretation and Notification

1.5.1 In this Code, mandatory provisions are denoted by the use of the word 'must' and provisions that are recommendatory are denoted by the use of the word 'should'.

1.5.2 Unless the contrary is proved, a notice, document or record posted or sent to an address in Australia, as part of the process of notification or consultation is taken to have been given on the second business day after being posted or sent.

Note: A 'record' is considered to include an electronic document such as e-mail or facsimile.

1.5.3 A notice or document left at a premises (whether residential or otherwise) is taken to have been given on the second business day after it was left at the premises.

1.5.4 A notice mentioned in this Code may be combined with another notice mentioned in this Code.

2 PARTICIPANTS

The Working Committee responsible for the revisions made to the Code consisted of the following organisations and their representatives:

Organisation	Membership	Representative
Australian Communications Authority (ACA)	Non-Voting	Geoff Purvis-Smith
Australian Communications Authority (ACA)	Non-Voting	Hannah Essex
Australian Local Government Association (ALGA)	Voting	Jonathan Cartledge
EMR Association of Australia	Voting	Lyn McLean
Hutchison Telecoms	Voting	Brian Currie
SingTel Optus	Non-Voting	Brent Gerstle
SingTel Optus	Non-Voting	Howard Game
Telstra	Voting	Mike Wood
Vodafone	Non-Voting	Roslyn Young

This Working Committee was chaired by Brent Gerstle. Margaret Fleming of ACIF provided project management support.

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3 DEFINITIONS AND ABBREVIATIONS

For the purposes of this Industry Code, the following definitions and abbreviations apply:

ACA means the Australian Communications Authority.

ACIF means the Australian Communications Industry Forum.

Act means the *Telecommunications Act 1997.*

Appendix F Equipment means fixed, mobile or portable radiocommunications equipment that is intended for operation by Carriers or non-Carriers, and which would otherwise meet the exemption from evaluation requirements set out in Appendix F.

> Example: Appendix F is intended to address low power devices such as a cordless phone which comprises a base unit and handset and would generally be exempt from evaluation under the 2002 ARPANSA Standard.
>
> Note: Appendix F Equipment applies to equipment that meets the exemptions in Appendix F. This applies whether the equipment is fixed, mobile or portable.
>
> Note: Appendix F is an extract from the *Radiation Protection Standard – Maximum Exposure Levels to Radiofrequency Fields – 3kHz to 300GHz*, published by the Australian Radiation Protection and Nuclear Safety Agency (ARPANSA) in 2002.

ARPANSA means the Australian Radiation Protection and Nuclear Safety Agency.

Base Station means a radiocommunications transmitter and its associated infrastructure including any antennas, housings and other equipment.

Business Day means a day that is not a Saturday, Sunday or a public holiday in the place where the Carrier intends to deploy radiocommunications infrastructure.

Carrier has the same meaning as in the Act.

Communications has the same meaning as in the Act.

Consultation means a process whereby Carriers seek to inform other parties about a proposed project at particular premises with the intention of giving those parties an opportunity to respond to the proposal and to have their responses considered.

Council, for an activity in a State or Territory, means an authority of the State or Territory responsible for the local government of the area where the activity happens or is to happen and/or the authority in a local area responsible for land use planning decisions. This is usually the Local Government Authority although this may vary in places such as Territories.

Development Application / Approval means approval in accordance with state or local planning laws.

Emergency Service Organisation includes, but is not limited to:

(a) police forces or services;

(b) fire services (urban and rural); and

(c) ambulance services.

Exempt Radiocommunications Infrastructure means:

(a) radiocommunications infrastructure installed at the request of the occupier to supply services exclusively to that property and not for re-transmission by radiocommunications to another property; or

(b) radiocommunications infrastructure used or intended to be used for the purpose of providing a facility for use by, or on behalf of, a defence organisation for defence purposes; or

(c) radiocommunications infrastructure used or intended to be used for the sole purpose of facilitating the provision of emergency services by emergency services organisations; or

(d) radiocommunications infrastructure used or intended to be used for the sole purpose of carrying of communications between 2 or more end users, where each end user is within the Immediate Circle of the operator of the radiocommunications infrastructure; or

(e) Appendix F Equipment.

EMR in this Code refers to the radiofrequency portion of the electromagnetic spectrum. Energy transmission over the entire spectrum is technically known as electromagnetic radiation (EMR) and includes commonly experienced emissions such as visible light, TV transmission, and AM and FM radio signals. A number of other terms are commonly used for the whole spectrum which include **EME** (electromagnetic energy), **EMF** (electromagnetic fields) which are often used interchangeably with EMR.

Fixed Radio Links comprises Point-to-point and Point-to-multipoint Services, fixed at both ends.

Immediate Circle has the same meaning as in the Act.

Note: An Immediate Circle is a non-public network used within an organisation. For example, a council radio network used by council employees to communicate with each other, a taxi service network or a regional water authority network.

Installation, in relation to radiocommunications infrastructure, includes:

(a) the construction of the radiocommunications infrastructure, on over or under any land;

(b) the attachment of the radiocommunications infrastructure to any building or other structure; and

(c) any activity that is ancillary or incidental to the installation of the radiocommunications infrastructure (*for this purpose, installation includes an activity covered by paragraphs (a) or (b) above)*.

Interested and Affected Parties includes persons who reside within the immediate vicinity of the facility and may have an interest in the proposed facility.

Low Impact Facility means a facility as determined in the *Telecommunications (Low-impact Facilities) Determination 1997*.

Low RF Power Infrastructure means one or more transmitters operating at a total maximum power into the antenna of no greater than 2 Watts.

Note: Examples may include micro-cells and pico-cells.

Point-to-point Service means a carriage service which allows a person to transmit a communication to an end-user(s).

Note: Examples contained in guidelines available from the Mobile Carriers Forum (see Appendix B – *Additional Design Information)*.

Point-to-multipoint Service has the same meaning as in the Act. Specific information about particular services is available from the ACA website.

Note: Examples contained in guidelines available from the Mobile Carriers Forum (see Appendix B – *Additional Design Information)*.

Precautionary Approach is discussed in Appendix A.

Public Mobile Telecommunications Service has the same meaning as in the Act.

RF Hazard Area means an area where the emission level exceeds the ACA mandatory limits for general public exposure to RF EMR.

Radiocommunications Infrastructure means a base station used for communications.

Note: Radiocommunications Infrastructure includes both low impact facilities and facilities that are not low impact.

RF means radiofrequency.

4 GENERAL OBLIGATIONS ON CARRIERS

4.1 Telecommunications Network Forward Planning

4.1.1 If requested by a Council, a Carrier must provide reasonable assistance to Council in the Council's forward planning for the deployment of radiocommunications infrastructure.

4.1.2 Examples of the kind of assistance that Carriers may give to Councils include:

(a) responding to reasonable requests for information that is to assist the Council to develop forward plans;

(b) providing the Council with the Carrier's plans concerning the deployment of radiocommunications infrastructure;

(c) providing the Council with the Carrier's plans concerning service level targets for planned radiocommunications infrastructure;

(d) providing the Council with an assessment of the opportunities for co-location of radiocommunications infrastructure with the facilities of other Carriers; and

(e) engaging in discussions with other Carriers to explore opportunities for co-location and to investigate opportunities for the coordinated, strategic and efficient deployment of radiocommunications infrastructure.

5 SITE SPECIFIC OBLIGATIONS ON CARRIERS

5.1 Application of the Precautionary Approach to Site Selection

5.1.1 Section 5.1 applies if a Carrier proposes to select a site for the deployment of radiocommunications infrastructure.

5.1.2 A Carrier must have written procedures for site selection for radiocommunications infrastructure in relation to factors contained in clause 5.1.4 and make them available to the public on request.

5.1.3 The Carrier must comply with its procedures.

5.1.4 The procedures must require, as a minimum, that for each site the Carrier have regard to:

(a) the reasonable service objectives of the Carrier including:

(i) the area the planned service must cover;

(ii) power levels needed to provide quality of service;

(iii) the amount of usage the planned service must handle;

(b) minimization of EMR exposure to the public;

(c) the likelihood of an area being a community sensitive location. (Examples of sites which sometimes have been considered to be sensitive include residential areas, childcare centres, schools, aged care centres, hospitals and regional icons);

(d) the objective of avoiding community sensitive locations;

(e) relevant state and local government telecommunications planning policies;

(f) the outcomes of consultation processes with Councils and communities as set out in Section 5.5;

(g) the heritage significance (built, cultural and natural);

(h) the physical characteristics of the locality including elevation and terrain;

(i) the availability of land and public utilities;

(j) the availability of transmission to connect the radiocommunications infrastructure with the rest of the network, e.g. line of sight for microwave transmission;

(k) the radiofrequency interference the planned service may cause to other services;

(l) the radiofrequency interference the planned service could experience at that location from other services or sources of radio emissions;

(m) any obligations, and opportunities, to co-locate facilities; and

(n) cost factors.

5.2 Application of Precautionary Approach to Infrastructure Design

5.2.1 Section 5.2 applies if a Carrier proposes to design radiocommunications infrastructure.

5.2.2 A Carrier must have written procedures for designing radiocommunications infrastructure.

5.2.3 With the objective of minimising unnecessary or incidental RF emissions and exposure, the procedures must require that in designing infrastructure the Carrier have regard to:

(a) the reason for the installation of the infrastructure considering – coverage, capacity and quality;

(b) the positioning of antennas to minimise obstruction of radio signals;

(c) the objective of restricting access to areas where RF exposure may exceed limits of the EMR standard;

(d) the type and features of the infrastructure that are required to meet service needs including:

(i) the need for macro, micro or pico cells; and

(ii) the need for directional or non-directional antennas.

Note: Some examples of radiocommunication infrastructure are contained in guidelines available from the Mobile Carriers Forum (see Appendix B – *Additional Design Information*).

(e) the objective of minimising power whilst meeting service objectives; and

(f) whether the costs of achieving this objective are reasonable.

5.2.4 A Carrier must comply with those procedures.

5.2.5 If the radiocommunications infrastructure is associated with a base station used for the supply of Public Mobile Telecommunications Services, site EMR assessments must be made in accordance with the ARPANSA prediction methodology and report format (see Appendix B – *Additional Design Information*).

Note: The ARPANSA prediction methodology requires cumulative predictions from all mobile telephone base station equipment installed at the site.

5.2.6 The ACA may request a copy of the site EMR estimate, and the Carrier must provide the estimate to the ACA within two weeks of the request being made.

5.3 Low RF Power Infrastructure and Fixed Radio Links – Notification

5.3.1. A Carrier must notify Council of all proposed Low RF Power Infrastructure under the Carrier's control.

Note: The rationale for having fewer consultation and notification requirements for Low RF Power Infrastructure is that the power of such devices is similar to that of a handheld mobile telephone.

5.3.2. A Carrier must notify the occupier of a residence in close proximity to the proposed site of all proposed Low RF Power Infrastructure and Fixed Radio Links.

Note: For guidance purposes, close proximity in relation to Low RF Power Infrastructure and Fixed Radio Links may be within 10 to 20 metres.

5.3.3. A Carrier must notify the manager, owner and or occupier of the property in/on which the proposed Low RF Power Infrastructure is to be located.

5.3.4. Notification about the proposal under Section 5.3 must include:

(a) the proposed location;

(b) a description of the Low RF Power Infrastructure and/or Fixed Radio Links;

(c) a statement that the Carrier's proposed infrastructure will be in compliance with the ACA EMR regulatory arrangements; and

(d) the Carrier's contact details.

5.4 Notification to Council – Installation at a New Site Without Development Application

5.4.1 Section 5.4 applies if:

(a) a Carrier proposes to carry out any work at premises in relation to the installation of radiocommunications infrastructure that is not Low RF Power Infrastructure; and

(b) there is no radiocommunications infrastructure at the premises, other than Low Power RF Infrastructure; and

(c) the work does not require Development Approval.

Note: The consultation requirements of this Code do not apply to infrastructure that requires Development Approval. In such cases it is expected that public consultation will occur though the Development Application process.

5.4.2 Before commencing the proposed work, the Carrier must notify Council about the work.

5.4.3 Where it can reasonably be expected that an adjacent local government area will be impacted by a proposal, the Carrier must also notify the Council administering that adjacent local government area.

5.4.4 Notification to the Councils must include:

(a) the proposed location;

(b) a written description of the proposal;

(c) a statement setting out whether the Carrier regards the infrastructure as a Low Impact Facility under the *Telecommunications (Low-impact Facilities) Determination 1997* and the reasons for that conclusion;

(d) a statement that the proposed infrastructure will be in compliance with the ACA EMR regulatory arrangements;

(e) if the radiocommunications infrastructure is associated with a base station used for the supply of public mobile telecommunications services, a statement of estimated EMR exposure levels in accordance with the ARPANSA prediction methodology and report format (see Appendix B – *Additional Design Information*);

(f) references to information on the effects of radio emissions on health;

(g) the Carrier's contact details; and

(h) the proposed community consultation plan for the site.

Note: The Carrier may also have to comply with State and local planning requirements.

5.4.5 The Carrier must allow Council:

(a) a comment period of five business days from the date of notification, to provide comment in writing in relation to the proposed community consultation plan (provided under clause 5.5.2);

(b) an extension period of an additional five business days to provide comment if requested by Council in writing.

5.4.6 Comments under clause 5.4.5 (a) or written requests under clause 5.4.5 (b) must be received by the Carrier by no later than 5.00pm on the fifth business day from the date of notification.

5.4.7 The Carrier must not give notices under clause 5.5.7 before it has considered, and responded in writing to all issues raised in the Council's comments indicating acceptance or reasons for rejection of Council's views. The Carrier may commence the consultation process as in its plan under clause 5.5.2:

(a) if there is an extension period, at the close of that extension period; or

(b) if there is no extension period, at the close of the comment period.

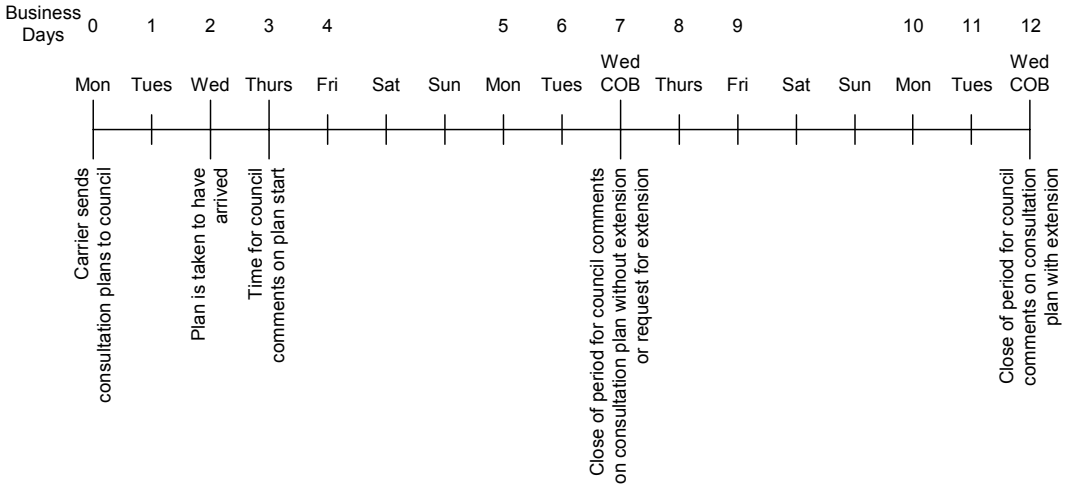

FIGURE 1

Timeline for Council comments on Carrier Consultation Plan

Note: The above figure is included to provide an indication of number of days to be allowed for receipt of notice and council comments.
Public holidays and weekends are not counted as Business Days.

5.5 Consultation with Local Communities – Installation at a New Site Without Development Application

5.5.1 Section 5.5 applies if:

(a) a Carrier proposes to carry out any work at premises in relation to the installation of radiocommunications infrastructure that is not Low RF Power Infrastructure; and

(b) there is no radiocommunications infrastructure at the premises, other than

(i) Low Power RF Infrastructure; or

(ii) Exempt Radiocommunications Infrastructure; and

(c) the work does not require Development Approval.

Note: For guidance, where there is a large physical separation between facilities on a premises, they should be dealt with as separate sites for the purposes of consultation.

5.5.2 Before commencing the proposed work, the Carrier must develop a plan for local community consultation.

Note: The Carrier must notify the Council of its consultation plan under clause 5.4.4.
Note: Appendix C - *Consultation Guidelines*, should be used for guidance.

5.5.3 The consultation plan must be in writing and set out the consultation that the Carrier proposes to carry out in relation to a site.

5.5.4 The Carrier must comply with its consultation plan.

5.5.5 In developing a consultation plan for a site the Carrier must:

(a) have regard to the objectives of:

(i) identifying and informing Interested and Affected Parties of the proposed project;

(ii) providing adequate time for Interested and Affected Parties to consider and engage in meaningful dialogue on the project;

(iii) maximising the level of accurate and accessible information about the project to Interested and Affected Parties;

(iv) identifying and attempting to resolve potential issues early in the site planning process; and

(v) obtaining mutually acceptable outcomes on individual projects;

(b) have regard to the fact that a consultation program may not always:

(i) satisfy all participants; or

(ii) resolve all differences of opinion or values.

(c) have regard to Council's views on consultation;

(d) use its reasonable endeavours to identify community sensitive locations; and

Note: Examples of sites which sometimes have been considered to be sensitive include residential areas, childcare centres, schools, aged care centres and hospitals.

(e) use its reasonable endeavours to identify relevant community stakeholders.

Note: Examples of relevant community stakeholders who have sometimes been identified for specific sites include Local Progress Associations, Parents and Citizens groups for pre-schools and schools, Local MPs, Resident Groups.

5.5.6 The plan must require the Carrier to:

(a) consult with the owner of the subject site;

(b) consult with the Council;

(c) consult occupiers of the subject site;

Note: By way of clarification, where the subject contains multiple residences, notification to the occupants of all residences is required.

(d) consult immediate residential neighbours;

(e) consult Interested and Affected Parties, occupiers of community sensitive locations and relevant community stakeholders who were identified under clause 5.5.5;

(f) respond to specific information requests in a timely manner;

(g) provide the Carrier's phone contact for development and/or construction issues in all notices;

(h) provide the Carrier's phone contact for references to EMR information in all notices;

(i) identify timeframes allowed in the consultation plan; and

(j) undertake the following in respect of on-site signage:

(i) place a sign regarding the proposed work at the site proposed in a manner that ensures that it is clearly visible and legible from a public road or footpath, unless local government approval is required for the sign, the Council instructs otherwise, or it is not practical to do so;

(ii) the sign must include:

(A) the name and contact details of the Carrier or site manager;

(B) information on how to register comments with the Carrier or site manager;

(C) the closing date for comment;

(iii) the sign must be weather proof if installed externally;

(iv) the sign must not be removed by the Carrier until construction is complete.

5.5.7 Any notice given for the purposes of the consultation plan must contain:

(a) the time within which they may comment on the proposed work; and

(b) a statement as to whether the Carrier regards the proposed work as a Low Impact Facility under the *Telecommunications (Low-impact Facilities) Determination 1997* and the reasons for that conclusion.

5.5.8 The time under clause 5.5.7 (a) must be:

(a) if the notification is to a Council, not less than twenty business days; or

(b) if the notification is not to a Council, not less than ten business days.

5.5.9 The Carrier must provide the Council with a report about the responses received from those notified and the results of any other consultation conducted under the plan.

Note: If everyone notified in accordance with the plan agrees, then the Carrier may immediately report to Council.

5.5.10 The Report must include:

(a) summary of comments received during the consultation process;

(b) the Carrier's consideration of these comments; and

(c) a statement about the Carrier's intended actions regarding the proposed work.

5.5.11 This Report must be available to a member of the public on written request.

5.5.12 The Carrier must not commence the work until after the Report has been given to Council.

5.6 Notification to Councils and the Public – Installation at an Existing Site Without Development Application

5.6.1 Section 5.6 applies if:

(a) a Carrier proposes to carry out any work at premises in relation to the installation of radiocommunications infrastructure that is not Low RF Power Infrastructure; and

(b) there is already radiocommunications infrastructure at the premises, other than

(i) Low Power RF Infrastructure; or

(ii) Exempt Radiocommunications Infrastructure and;

(c) the work does not require Development Approval.

Note: For guidance, where there is a large physical separation between facilities on a premises, they should be dealt with as separate sites for the purposes of consultation.

5.6.2 The Carrier must give the Council notice of the proposed work which must include:

(a) the proposed location;

(b) a written description of the proposed work;

(c) a statement setting out whether the Carrier regards the infrastructure as a Low Impact Facility under the *Telecommunications (Low-impact Facilities) Determination 1997* and the reasons for that conclusion;

(d) a statement that the proposed infrastructure will be in compliance with the ACA EMR regulatory arrangements;

(e) if the radiocommunications infrastructure is associated with a base station used for the supply of public mobile telecommunications services, a statement of estimated EMR exposure levels in the ARPANSA Report format (see Appendix B – *Additional Design Information*); and

(f) a statement that Council may obtain further information on the proposed work, and contact details for the Carrier's representative from whom the information may be obtained.

5.6.3 The Carrier must also publish in a newspaper circulating in the area surrounding the location of the proposed work a notice which must:

(a) describe the proposed work and its location, including street address and suburb if applicable; and

(b) state that members of the public may obtain further information on the proposed work, and set out contact details for the Carrier's representative from whom the information may be obtained; and

(c) invite written submissions on the proposed work;

(d) specify the closing date for submissions, which must be at least 10 days after the date on which the notice is published; and

(e) state the address to which submissions should be sent.

5.6.4 The notice must be legible and be in the public notice section of the newspaper.

5.6.5 Before commencing the work, the Carrier must have regard to any submissions received from the public and Council.

Note: The potential for increase in EMR from maintenance of, or changes to, existing infrastructure is currently regarded as low. However, such increases will be notified to the ACA and the issue will be reconsidered when this Code is reviewed.

5.7 Application of Precautionary Approach to Site Operation

5.7.1 Carriers must operate their infrastructure in a manner consistent with the objectives in clause 5.2.3.

5.7.2 Carriers must be able to demonstrate compliance with the ACA regulations regarding maximum human exposure limits for radiofrequency fields.

5.7.3 Carriers must take appropriate measures to restrict general public access to RF hazard areas.

Note: General public may include window cleaners, building maintenance staff, etc.

5.7.4 For each RF hazard area, a Carrier must ensure warning signs are in place in a location and in a manner that is appropriate so that they are clearly visible.

Note: Refer to examples of standard signage in Appendix D – *RF Warning Signs*.

5.7.5 In assessing whether measures are appropriate, the Carrier must have regard to:

(a) the kinds of people who may have access to the area;

(b) the need for physical barriers;

(c) relevant occupational health and safety requirements;

(d) the views of the property owner;

(e) any site changes that have been made; and

(f) any other matter which may be relevant to ensure site safety with regards to EMR.

5.7.6 Carriers must ensure that technical staff of the Carrier who may be involved in activities on or adjacent to radiocommunications infrastructure are trained in radio frequency exposure safety.

5.7.7 Carriers must ensure that transmission equipment no longer in service does not transmit.

5.8 Requirement to keep Documentary Evidence of Compliance with Procedures

Carriers must keep documentary evidence of their compliance with the Code for a period of three years.

6. RADIO EMISSIONS AND HEALTH AND SAFETY INFORMATION

6.1 Requirement for Carriers to keep informed about EMR Research

6.1.1 Carriers should keep informed via relevant scientific bodies of the significance of the results of scientific investigations or studies on EMR. Guidance on quality research is included in Appendix E - *Guidelines for Quality EMF Research*.

6.2 RF EMR Health and Safety Information

6.2.1 If requested, a Carrier must make available to the public, at no charge:

(a) information regarding how they address RF EMR health and safety issues in relation to their networks; and

(b) information about where research reports on the health and safety impacts of radiofrequency infrastructure may be obtained. A Carrier may meet this requirement by referring members of the public to an industry body or Government agency where the Carrier has entered into a specific agreement for this purpose.

6.2.2 For a specific site, a Carrier must provide, as soon as practicable and at no charge, the following information to members of the public on request:

(a) a description of their radiofrequency infrastructure on the site;

(b) the operating frequency of the radiofrequency transmitter;

(c) a declaration that their infrastructure is in compliance with the ACA mandatory limits for general public exposure to RF EMR;

(d) details of any RF hazard areas associated with their infrastructure and management practices to restrict access to RF hazard areas;

(e) the levels of exposure to EMR emissions in accordance with the ARPANSA report (see Appendix B – *Additional Design Information*); and

(f) coverage information of the area.

6.2.3 This section does not apply where in the reasonable opinion of the Carrier the information is being sought for commercial purposes.

6.3 Additional Information Supplied by Carrier

6.3.1 A Carrier may provide information about the health and safety aspects of RF transmitters in addition to that set out in Section 6.2.

6.3.2 The Carrier must not assert anything to the effect that the absence of scientific proof means that there is no possibility of risk arising from the operation of radiocommunications infrastructure.

6.3.3 Where a Carrier provides or quotes summaries of scientific information, the Carrier must reference the source of information.

7. COMPLAINT HANDLING

7.1 Meaning of Complaint

7.1.1 In this section a complaint means any expression of dissatisfaction or grievance made in writing to a Carrier in relation to its performance of any mandatory obligation in this Code.

7.1.2 However, a complaint does not include:

(a) a request for information; or

(b) any comments on proposed work received by a Carrier during the consultation process under section 5.5.

7.1.3 If it appears to a Carrier that a person making a complaint requires assistance to express the complaint in writing, it is the duty of the Carrier to take reasonable steps to provide appropriate assistance to the person.

7.2 Carrier to Develop Complaints Handling Procedure

7.2.1 A Carrier must have a written procedure for dealing with complaints.

7.2.2 The Carrier must make information about the procedure available to the public including information about how the Carrier can be contacted by a person in order to make a complaint.

7.2.3 The Carrier must ensure that staff have received training in the procedure.

7.3 Complaint Handling Procedure

7.3.1 A Carrier must acknowledge complaints, in writing, within ten working days of the receipt of the complaint.
The Carrier must investigate the matters raised by a complaint unless the Carrier believes that the complaint is frivolous or vexatious, or is not made in good faith.

7.3.2 If a Carrier decides not to investigate a matter, the Carrier must give the complainant written notice of the decision, and of the reasons for the decision.

7.3.3 The Carrier must advise the complainant of the outcome of the investigation of their Complaint in writing and any action to be taken.

7.3.4 If a complainant is dissatisfied with the Carrier's response, the Carrier must inform the complainant of the availability of external options for complaint handling, eg. the ACA.

7.3.5 Carriers must keep a written record of complaints and the way in which the Carrier responded to the complaint.

7.3.6 Where the Carrier assesses a complaint to be frivolous or vexatious the Carrier must:

(a) record its decision not to proceed with further correspondence and may cease correspondence;

(b) inform the complainant of the availability of external options for complaint handling; eg. the ACA.

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8. CODE ADMINISTRATION AND COMPLIANCE

8.1 ACIF Code Administration and Compliance Scheme

8.1.1 Industry Codes are voluntary, but industry participants are expected to sign relevant Codes and, by signing a Code, agree to be bound by the Code provisions including any sanctions specified by the Code for non-compliance.

8.1.2 Under ACIF Code Signatory arrangements, Signatories to this Industry Code are subject to the ACIF G514:2003 ***Code Administration and Compliance Scheme*** Industry Guideline (*the Scheme*). Accordingly, all signatories who are bound by this Industry Code are also bound by the Scheme.

8.2 Power to Handle Industry Complaints under this Code

8.2.1 Complaints may be made under this Code to ACIF by a member of the industry *(or a voluntary or non-profit consumer organisation or similar body) (an "Industry Complaint")* about a contravention of this Code by a Signatory to this Code.

8.2.2 Complaints by a member of the industry (or a voluntary or non-profit consumer organisation or similar body) about a contravention of this Code by a Signatory to this Code may be referred from the ACA under the power granted to the ACA in section 514 of the *Telecommunications Act 1997*, subject to ACIF's agreement to accept the referral. Without limiting the grounds on which ACIF may withhold its agreement to accept a referral, ACIF may withhold its agreement where it considers that the complaint can be more conveniently dealt with in another forum or that handling the complaint may impose an unreasonable cost burden on ACIF.

8.2.3 ACIF must handle complaints under clauses 8.2.1 or 8.2.2 in accordance with the provisions of the ACIF G514:2003 ***Code Administration and Compliance Scheme***.

8.3 ACA Registration

8.3.1 It is intended to register this Code under the provisions of s117 of the *Telecommunications Act 1997*.

8.3.2 Upon registration of this Code, the ACA has the power to issue formal warnings or directions to comply with the Code provisions to all telecommunications organisations covered by the scope of this Code. There are penalties for failing to comply with the ACA's direction.

8.4 Code Review

8.4.1 Review of this Code will be conducted by ACIF five years after registration by the ACA.

A. APPENDIX – THE PRECAUTIONARY PRINCIPLE

Terms used in the context of risk assessment are the Precautionary Principle, the Precautionary Approach, Prudent Avoidance and ALARA (As Low As Reasonably Achievable).

For the purpose of this document the Precautionary Principle could be seen as the fundamental precepts upon which a practical precautionary approach could be based.

The issue of risk assessment can be summarised as the weighing up of likely harm based on all available scientific evidence, with the cost of commercial adjustment by the Carrier.

The fundamental concept of the Precautionary Principle was summed up in 1992 at the UN Conference on Environment and Development (UNCED) in Rio de Janeiro.

Here, the Precautionary Principle was explicitly recognised and included in the Rio Declaration. It is listed as Principle 15 among the principle of general rights and obligations of national authorities.

> *"In order to protect the environment, the precautionary approach should be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation."*

The application of the Precautionary Principle requires commitment to the idea that scientific proof of a causal link between human activities and its effect is not required.

1. Australia's Inter-governmental Agreement on the Environment (IGAE) notes:

   "Essentially, the precautionary principle offers administrators advice about how to act responsibly in the face of uncertainty and lack of full scientific knowledge. Under this Principle, policy makers are advised to use great care when authorising resource use where the outcomes of that use cannot be predicted with confidence, where one or more of the possible outcomes could have extremely adverse implications for future generations, or where no known substitutes exist for the resource being used."

   And that:

   - *Careful evaluation to avoid, wherever practicable serious or irreversible damage to the environment; and*
   - *An assessment of the risk-weighted consequences of various actions.*

2. However the European Commission Communication on the Precautionary Principle attempts to establish more detailed guidelines for its application, and to this end notes that:

   > *"The Precautionary Principle should be considered within a structured approach to the analysis of risk which comprises three elements: risk assessment, risk management, risk communication. The Precautionary Principle is particularly relevant to the management of risk."*

   The Summary notes that:

   > *"The issue of when and how to use the precautionary principle, both within the European Union and internationally, is giving rise to much debate, and to mixed, and sometimes contradictory views. Thus, decision-makers are constantly faced with the dilemma of balancing the freedom and rights of individuals, industry and organisations with the need to reduce the risk of adverse effects to the environment, human, animal or plant health. Therefore finding the correct balance so that the proportionate, non-discriminatory, transparent and coherent actions can be taken, requires a structured decision-making process with detailed scientific and other objective information."*

   But also that:

"The Precautionary Principle applies where scientific evidence is insufficient, inconclusive or uncertain – and preliminary scientific evaluation indicates that there are reasonable grounds for concern that the potentially dangerous effects on the environment, human, animal or plant health may be inconsistent with the high level of protection chosen by the EU."

And that:

"In some cases, the right answer may be not to act or at least not to introduce a binding legal measure. A wide range of initiatives is available in the case of action, going from a legally binding measure to a research project or a recommendation.
Where action is deemed necessary, measures based on the precautionary principle should be, inter alia:

- *proportional to the chosen level of protection;*
- *non-discriminatory in their application;*
- *consistent with similar measures already taken;*
- *based on an examination of the potential benefits and costs of action or lack of action;*
- *subject to review, in the light of new scientific data; and*
- *capable of assigning responsibility for producing the scientific evidence necessary for a more comprehensive risk assessment.*

The application of the Precautionary Principle to the siting of radiocommunications infrastructure should include a consideration of the uncertainty of the science on a-thermal effects.

There is a need to balance the requirement for the telecommunications industry to provide adequate service with the need of the community to be ensured of living in an environment that will not be a potential threat to health.

3. The World Health Organisation's advice on electromagnetic fields and public health with respect to mobile telephones and their base stations (fact sheet 193 June 2000) includes the following precautionary measures

Precautionary measures

- ***Government****: If regulatory authorities have adopted health-based guidelines but, because of public concerns, would like to introduce additional precautionary measures to reduce exposure to RF fields, they should not undermine the science base of the guidelines by incorporating arbitrary additional safety factors into the exposure limits. Precautionary measures should be introduced as a separate policy that encourages, through voluntary means, the reduction of RF fields by equipment manufacturers and the public. Details of such measures are given in a separate WHO Background document.*

- ***Individuals****: Present scientific information does not indicate the need for any special precautions for use of mobile phones. If individuals are concerned, they might choose to limit their own or their children's' RF exposure by limiting the length of calls, or using "hands-free" devices to keep mobile phones away from the head and body.*

B. APPENDIX – ADDITIONAL DESIGN INFORMATION

1. Standards Australia AS 3516.2

Infrastructure should be designed and installed having regard to the requirements of AS 3516.2 Australian Standard "*Siting of Radiocommunications Facilities*".

2. ACA Guide - "Accessing & Installing Telecommunications Facilities - A Guide" October 1999

Infrastructure should be designed and installed in compliance with the requirements of the ACA guide - "*Accessing and Installing Telecommunications Facilities - A Guide October 1999*".

3. Mobile Carriers Forum (MCF) Publication – "Low-impact Mobile Facilities – Guidelines for Better Visual Outcomes"

The MCF has prepared guidelines to assist in the siting and design of new low-impact mobile telecommunication facilities, with the aim of minimizing visual impact and achieving appropriate and acceptable outcomes. The guidelines include photographs of a range of radiocommunications infrastructure and are available from the AMTA website (www.amta.org.au – go to Network Deployment and click on Low Impact Guidelines).

4. EME Software

Specialised software is available to conduct EME assessments. The purpose of this computer modelling is to determine the effect of RF transmission from a particular site, as well as to predict the possible RF field strengths at particular locations.

5. ARPANSA EME Report Format

The Report Format included on the following pages is the format at the date of publication of this Code. As this format may be subject to change, it is suggested that the ARPANSA website (http://www.arpansa.gov.au) be checked for updates.

ARPANSA EME report format

Summary of Estimated RF EME Levels around the *Carrier* Mobile Phone Base Station at *Location*

Issue Date:

Introduction:

This report summarises the estimation of maximum cumulative radiofrequency (RF) electromagnetic energy (EME) levels at ground level emitted from the existing and proposed antennas at the *Carrier* Mobile Phone Base Station at *Location*. Maximum EME levels estimated are at distances of 5m, 50m, 100m, 200m, 300m, 400m, and 500m from the base station. The procedures for making the estimates have been developed by the Australian Radiation Protection And Nuclear Safety Agency (ARPANSA). These are documented in the ARPANSA Technical Report; "Radiated EME Exposure Levels - Prediction Methodologies" which is available at http://www.arpansa.gov.au

EME Health Standard

ARPANSA[1], an agency of the Commonwealth Department of Health has established a Radiation Protection Standard[2] specifying limits for continuous exposure of the general public to RF transmissions at frequencies used by mobile phone base stations. Further information can be gained from the ARPANSA web site.

Note: The basic restrictions in the ARPANSA Standard are the same as those in AS2772.1 (Int): 1998 on which the Australian Communications Authority's (ACA) mandatory limits are based.

Existing Site Radio Systems

Carrier GSM 900			
Carrier GSM 900			
etc			

Table of Predicted EME Levels – Existing

Distance from *Carrier* antennas - bearing *x*˚ (m)	Maximum Cumulative EME Level - All Carriers (% of ARPANSA standard)
5	
50	
100	
200	
300	
400	
500	
Maximum EME level *(y m x˚ from Carrier antennas)*	

Note: This estimation is for the maximum level of RF EME at 1.5m above the ground from the existing antennas. The estimated levels have been calculated on the maximum mobile phone call capacity anticipated for this site. This estimation does not include possible radio signal attenuation due to buildings and the general environment. The actual EME levels will generally be significantly less than predicted due to path losses and the base station automatically minimising transmitter power to only serve established phone calls[3].

Summary – Existing Radio Systems

RF EME levels have been estimated from the existing antennas installed at *Location*. The maximum cumulative EME level at 1.5 m above ground level is estimated to be *z* % of the ARPANSA reference level limit. This level complies with the limit specified in the ARPANSA Standard. The predicted levels also comply with the reference levels mandated by the Australian Communications Authority for mobile phone base stations.

Summary of Estimated RF EME Levels around the *Carrier* Mobile Phone Base Station at *Location*

Issue Date

Proposed Site Radio Systems

Carrier 3G			
Carrier CDMA			

Table of Predicted EME Levels – Existing & Proposed

Distance from *Carrier* antennas - bearing *x*° (m)	Maximum Cumulative EME Level - All Carriers (% of ARPANSA standard)
5	
50	
100	
200	
300	
400	
500	
Maximum EME level *(y m x° from Carrier Antennas)*	

Note: This estimation is for the maximum level of RF EME at 1.5m above the ground from the existing antennas. The estimated levels have been calculated on the maximum mobile phone call capacity anticipated for this site. This estimation does not include possible radio signal attenuation due to buildings and the general environment. The actual EME levels will generally be significantly less than predicted due to path losses and the base station automatically minimising transmitter power to only serve established phone calls[3].

Summary – Existing & Proposed Radio Systems

RF EME levels have been estimated from the existing and proposed antennas installed at *Location*. The maximum cumulative EME level at 1.5 m above ground level is estimated to be *z* % of the ARPANSA reference level limit. This level complies with the limit specified in the ARPANSA Standard. The predicted levels also comply with the reference levels mandated by the Australian Communications Authority for mobile phone base stations.

Reference Notes:

1. The Australian Radiation Protection and Nuclear Safety Agency (ARPANSA) is a Federal Government agency incorporated under the Health portfolio. ARPANSA is charged with responsibility for protecting the health and safety of people, and the environment, from the harmful effects of radiation (ionizing and non-ionizing).

2. Australian Radiation Protection and Nuclear Safety Agency (ARPANSA), 2002, 'Radiation Protection Standard: Maximum Exposure Levels to Radiofrequency Fields — 3 kHz to 300 GHz', Radiation Protection Series Publication No. 3, ARPANSA, Yallambie Australia.
[Printed version: ISBN 0-642-79400-6 ISSN 1445-9760]
[Web version: ISBN 0-642-79402-2 ISSN 1445-9760]

3. The EME predictions in this report assume a worst-case scenario being:
- base station transmitters operating at maximum power (no automatic power reduction)
- simultaneous telephone calls on all channels
- an unobstructed line of sight view to the antennas.
In practice a worst-case scenario is rarely the case. There are often trees and buildings in the immediate vicinity, and cellular networks automatically adjust transmit power to suit the actual telephone traffic. For these reasons, care should be taken when comparing prediction reports & actual measurements, as the predicted levels will often be considerably higher.

C. APPENDIX – CONSULTATION GUIDELINES

This guideline is provided to assist Carriers in developing and implementing appropriate consultation plans for individual infrastructure.

1. Desired Outcomes

In the design and installation of radiocommunications infrastructure the objectives of Council and community consultations are to:

(a) inform and receive input from Interested and Affected Parties of the proposed project;

(b) provide adequate time for Interested and Affected Parties to consider and engage in meaningful dialogue on the project;

(c) maximize the level of accurate and accessible information about the project to affected communities;

(d) identify and attempt to resolve potential issues early in the planning process; and

(e) obtain mutually acceptable outcomes on individual projects.

When considering the desired outcomes it is to be recognised that a consultation program will not always:

- satisfy all participants; or
- resolve all differences of opinion or values.

2. Determining Size and Scope of Consultation Plan

A Carrier's consultation plan for each site should be open and transparent. The size and scope of the consultation plan should be weighted against the likely impact the proposal will have on directly affected parties, relevant stakeholders and community sensitive locations.

2.1 Stakeholder Analysis

At an early stage in the planning process, a stakeholder analysis should be undertaken to identify who the interested parties may be and the potential for concerns to be raised about a particular proposed facility. The greater the likelihood for concern, the greater the extent and nature of the consultation with stakeholders that is required.

Factors that should be considered in the stakeholder analysis include:

(a) Clear identification of the proposal including consideration of the nature and siting of the facility.

Some examples of facilities which previously have been shown to be sensitive are large visually prominent facilities located very close to where people live.

(b) Adjacent land uses and any sensitive land uses nearby.

Some examples of sites which previously have been shown to be sensitive are residential areas, child care centres, schools, aged care centres and hospitals.

(c) Identification of potentially Interested and Affected Parties at or near the proposed facility.

It is critical that a thorough search is undertaken to identify both individuals, organisations or stakeholder groups in a locality who are potentially affected. Progress Associations, Parent Groups, Sporting Groups, tenants, Occupational Health & Safety Committees, Aboriginal Land Councils and residents in adjacent Council areas but living in proximity to a proposal have previously identified themselves as affected parties. Local Council is a good source of information about potentially affected parties in a locality.

(d) Possible concerns of those individuals or groups.

Some examples of concerns that have peen previously raised include health, visual amenity, potential noise and property values.

(e) The community history of the locality.

Examples of sites which have previously shown to be sensitive include localities where inadequate community consultation was undertaken in the past or where the community may have been required to deal with previous trauma and loss such as bushfires or have been involved in a controversial development such as a road proposal.

(f) Any regulatory controls at the locality.

Examples of sites which previously have been shown to be sensitive include heritage areas, scenic protection areas and national parks. The Carrier should make every effort to integrate the consultation strategy with the requirements of local planning controls and State Planning and Environmental legislation. Engagement in seeking views of Local Council and engaging in meaningful dialogue will facilitate the development of an appropriately scoped consultation strategy.

2.2 Consultation Tools

The following table summarises a number of consultation tools that can be selected to appropriately communicate with identified individuals and stakeholder(s). The number and type of tools to be used for any one proposal is dependent on the nature of the proposal and the potential level of concern and the stakeholders identified.

In all instances it is important that both verbal and written communications are clear, easy to understand and that opportunities for input and feedback are clearly stated. Further these communications should include ways the community can get additional information from a variety of sources.

Consultation Tools
Notify immediate residential neighbours
Advertising in local paper
Community newsletters
Door knock
Posted letters to individual residents/landowners
Consult Ward Councillors
Consult with other relevant Councillors
Consult Tenant stakeholders
Notify community representatives
Consult with community representatives
Notify representatives of sensitive activities
Council presentations
Consult precinct committees
Open House
Consult with Members of Parliament
Forming Community Representative Committee
Public Meeting

3. The Consultation Plan

Once the stakeholder analysis has been completed, the proposed consultation plan can be developed. Key areas that need to be addressed in the plan that is to be submitted to Council include:

(a) Background to the proposal including description of the current preferred proposal and the history and evaluation of alternative sites so far investigated.

(b) Informal consultations so far undertaken (if any).

(c) Consultation Plan Outline including who will be consulted, what consultation tools/methods will be used, stakeholder feedback opportunities and timeframe of consultation.

(d) Carrier response to community feedback i.e. how the Carrier proposes to address concerns, evaluate the community response.

(e) How the Carrier will report to Council on consultation.

D. APPENDIX – RF WARNING SIGNS

The following are typical examples of signs used to inform and warn of RF radiation hazards at transmitter sites.

1. RF EMR Warning Signs

RF EMR warning signs are used to identify areas that may exceed the general public exposure limits. To be installed at Point of access restriction.

Example 1 – EMR Warning Sign

2. RF EMR Hazard Identification

RF EMR Hazard Identification sign is used to identify the boundary point of occupational EMR exposure.

Example 2 – RF Hazard Sign

E. APPENDIX - GUIDELINES FOR QUALITY EMF RESEARCH

In this Appendix the term EMF, which is an abbreviation for Electric, Magnetic and Electromagnetic Fields, is used whereas in the Code the term EMR, which is an abbreviation for Electromagnetic Radiation, is used. EMF is a more general term, and is appropriate here, because it makes provision for effects below radio frequencies.

A. INTRODUCTION

The following set of guidelines has been summarised from the scientific reviews into the biological effects of EMF exposure held under the International EMF Project (Repacholi, 1998; Repacholi and Greenebaum, 1998). They are intended to assist researchers to complete studies that will be useful to WHO for health risk assessments. Studies with methodology deviating significantly from these guidelines may not provide information useful for health risk assessments. These guidelines have been developed for in vitro, in vivo, human volunteer and epidemiological studies.

B. GENERAL EXPERIMENTAL DESIGN

1. The project should test a clearly defined hypothesis, using a detailed protocol that would lead to information directly or indirectly relevant to assessment of health risk from EMF exposure.
2. The biological system used should be appropriate to the end-point(s) studied. Threshold and dose-response data (using at least 3 levels of exposure, in addition to sham-exposed controls) are sought where possible.
3. Well-characterised biological systems or assays should be used, preferably ones that are well established from the scientific literature available.
4. The a priori estimated power of the experiment, based on prior knowledge and the number of tests planned, should be sufficient to detect reliably the expected size of the effect (often as small as 10-20%).
5. Good Laboratory Practice (GLP) should be used throughout the design and conduct of the study (see, e.g., FDA, 1993). A specific protocol, consistent with the GLP guidelines, should be established and documented. Any changes instituted during the course of the study should also be documented. The protocol should include randomised, symmetric handling of specimens and their sources, except when precluded by the nature of the experiment or biological system. The protocol should include all appropriate controls (positive, negative, cage controls, sham-exposed etc.). Investigators should be blind to whether they are working with exposed or control materials; human subjects in laboratory experiments should be similarly unaware of their exposure status.
6. Quality assurance (QA) procedures should be included in the protocol, including dosimetry and monitoring of the programme by both a team from within the experimental staff and an independent group, as required by GLP.

Experimental System and Dosimetry

1. Environmental conditions, such as temperature, humidity, light, vibration and sound, and background EMF's, should be measured and recorded periodically. All experimental conditions should be the same for all groups, except for EMF exposure.
2. EMF's should be fully characterised and remeasured periodically. Waveform, pulse shape and timing, frequency spectrum, harmonics and transients from both continuous sources and from switching exposure systems on and off, should all be measured where appropriate. Background fields, such as ambient, equipment-derived, and cross-over fields from other exposure systems, are also important and need to be characterised. Time-varying and static components should be measured, as well as the polarisation and directions of the fields. Field modulation introduced by experimental factors such as motion of sample shakers should be noted and measured whenever possible. Positioning of cultures or animals within exposure systems should be noted and randomised where appropriate.

Data collection and quality assurance

1. The full protocol, including QA, should be followed strictly, as should GLP provisions for monitoring this.
2. Data should be recorded contemporaneously and back-up copies kept.
3. No data should be discarded without valid reason (e.g. equipment failure, procedures not followed). Reasons for this should be recorded.
4. As part of the QA programme, at least one independent reassessment should be made of all or an appropriate sample of specimens, when assays require an independent judgement by the investigator (e.g., histological evaluations).
5. Where possible, samples should be stored for future reference.

Data analysis

1. Analysis techniques should be appropriate to the data and hypothesis.
2. The stored data set should contain all data, and if any data are excluded from an analysis, clear, legitimate reasons for doing so should be recorded.

Conclusions and reports

1. Conclusions should be fully supported by the data and include all important implications of the data set.
2. Reports should include enough data and information concerning materials and methods to allow independent assessment of the conclusions and discussion.
3. Timely peer-reviewed publication is essential.

C. IN VITRO STUDIES

1. Temperature, atmosphere in CO2 incubators, vibration, and stray fields from incubator heaters and fans are sources of asymmetry (differences between exposed and control samples) that are often overlooked in cell and tissue culture experiments. These must be measured with appropriate instrumentation and every effort made to ensure that any differences are minimised, except for EMF exposure of the "exposed" samples.
2. Contemporaneous positive and negative controls, both maintained under identical circumstances to exposed cultures, sham-sham comparisons of multiple exposure systems, randomised handling of cultures, and blinding, should form part of the study, as appropriate.
3. To characterise electric fields or induced currents in cultures, electrode geometry and materials (including agar bridges, etc.), dish shape and dimensions, depth of medium and specimen dimensions, conductivity (RF and ELF) and dielectric constant (RF only) of medium are important. In some ELF studies, field values should be measured directly. Electrophoretic products should be considered and measured, where possible, when electrodes are used.
4. ELF magnetic field experiments should consider the factors above as they apply to induced current. The angle between applied field and medium, as well as the angle between applied ELF fields and the local DC field, should be measured.
5. When using media, serum or other reagents that may have variation from batch to batch, serious consideration should be given to purchasing and storing sufficient stocks in a single batch for the duration of the experiment. Similarly, the characteristics of cell lines derived from a standard source should not be allowed to diverge over time. There should be backup stocks from the original source.
6. For experiments lasting more than a few days and in all cases where samples or stock cultures are maintained for extended periods or data are gathered or stored electronically, backup systems must be installed to protect the work against equipment or power supply failure.

D. IN VIVO STUDIES

1. The protocol must meet the letter and spirit of all relevant regulations concerning experiments using animals or other whole organisms and must have the prior approval of all relevant review boards.

2. Applied EMF field inhomogeneity, temperature, atmosphere (eg humidity, room air changes, etc), lighting, vibration and noise asymmetries in cage racks or animal care rooms are often overlooked. These conditions should be measured in each cage location. Randomly rotating cages can overcome any asymmetries within or between exposed and control groups.

3. Controls should be maintained under identical circumstances to exposed cultures. Unless the animal is its own control, contemporaneous controls are important. Positive controls as well as negative controls and sentinel ("cage-control") animals should all be used, where appropriate. All personnel handling animals or experimental materials or performing assays should be blind to exposure status except in special circumstances.

4. Where possible, sham-sham comparisons of multiple exposure systems and randomised handling of animals, both during experiments and routine cage maintenance, should be considered.

5. Cage size, materials, bedding, spacing between animals, and animals' position in the fields, should be specified. Shielding effects of cages, any metal components and rack materials, presence of other animals, and changes in field strength as cages become soiled, should be measured. Micro shocks from cages or drinking apparatus should be eliminated.

6. Source, strain and sub-strain of animals should be specified. Specific pathogen free (SPF) animals and animals with special genetic characteristics should be tested prior to use. SPF animals and facilities require special care and trained personnel. The SPF status must be monitored throughout the experiment.

E. HUMAN VOLUNTEER STUDIES

1. The protocol should meet the letter and spirit of all relevant regulations concerning experiments using human subjects, and have prior approval of all relevant review boards. Personnel working with volunteers require special training and oversight.

2. Where appropriate, positive as well as negative controls should be used.

F. EPIDEMIOLOGICAL STUDIES

1. The protocol should meet the letter and spirit of all relevant regulations and have prior approval of all relevant review boards.

2. Study designs should recognise that the exposure metric for possible effects of weak ELF and weak RF fields is uncertain. Determinations of subjects' exposures, particularly historical exposures that are often determined via surrogates, should be validated from specific measurements where possible. Data should include as much information relevant to alternate metrics as possible to aid future research. Further information can be obtained from Ahlbom (1996), Beaglehole et al (1993) and Bracken et al (1993).

G. INDEPENDENT RESEARCH REVIEW AND ADMINISTRATION

1. Independent panels of independent scientists should assess proposed research projects, advise on the best researchers to conduct the studies, monitor progress of studies, and provide advisory first-stage review of the research results.

2. Research sponsors perceived to have a vested interest in the outcome of the studies should be isolated from all aspects of the research and the researchers. Sponsors might outline the general nature of the research to be supported. Independent bodies should determine the detailed nature of the studies, select and oversee investigators, and administer the programme, including funding.

H. COORDINATION OF RESEARCH

Many countries have announced EMF research programmes, and other institutions and organisations are presently conducting or sponsoring well-managed research. Global coordination of this research

can help ensure that scarce research funding is not wasted on unnecessary duplication of effort and that all important questions are being studied. The International EMF Project, in collaboration with the major national and multinational research funding institutions, can provide a useful facility or umbrella for worldwide coordination and exchange of information about plans and on-going projects. An ad hoc Research Coordination Committee has been established under the International EMF Project for this purpose. The Project maintains a database of research projects that seem to fulfil the requirements for WHO's Research Agenda on this world wide web site.

F. APPENDIX - EXTRACT FROM - *RADIATION PROTECTION STANDARD – MAXIMUM EXPOSURE LEVELS TO RADIOFREQUENCY FIELDS – 3KHZ TO 300GHZ*, PUBLISHED BY THE AUSTRALIAN RADIATION PROTECTION AND NUCLEAR SAFETY AGENCY (ARPANSA) IN 2002

This Appendix is intended to address low power devices such as a cordless phone which comprises a base unit and handset and would generally be exempt from evaluation under the provisions below of the 2002 ARPANSA Standard.

S5.3 EQUIPMENT INTENDED FOR USE BY THE GENERAL PUBLIC

S5.3.1 Application
Sub-section S5.3 provides a means, based on equipment and usage parameters, to readily determine compliance with the spatial peak SAR restrictions of Table 2 for general public exposure of certain portable or mobile equipment. This sub-section has application to equipment intended for operation by general public users.

S5.3.2 Equipment with mean output power not exceeding 20 mW
The evaluation of mobile or portable transmitting equipment for compliance with this Standard is not required where the nominal mean power output delivered to the antenna does not exceed 20 mW.

S5.3.3 Equipment with mean output power exceeding 20 mW
The evaluation of mobile or portable transmitting equipment for compliance with this Standard is not required where:

(a) it operates on a push-to-talk basis;
(b) it is operated with a transmit duty factor of 50% or less averaged over a six minute period;
(c) it does not exceed one fifth (20%) of the power levels of Table S2; and
(d) normal operation entails the antenna or other radiating structure being separated from the user's body by not less than 2.5 cm.

The evaluation of mobile or portable transmitting equipment for compliance with this Standard is not required where the output power delivered to the antenna does not exceed the levels of Table S2 and normal operation entails the antenna or other radiating structure being separated from the user's body by not less than 20 cm.

Where the above provisions are not satisfied, testing or mathematical modelling to demonstrate compliance with the spatial peak SAR restrictions specified for the general public users category in Table 2 of this Standard must be undertaken. Such measurements or calculations should be based on normal use spatial relationships between the equipment and user.

The compliance of transmitting equipment may be assessed, via the reference levels specified for the general public users category in Tables 7 and 8 of this Standard, by direct measurement or evaluation in accordance with the recommendations of AS/NZS 2772.2 or other appropriate guidelines where the power output exceeds the levels of Table S2; and normal operation entails the antenna or other radiating structure being separated from the user's body by not less than 20 cm.

Where operation of the equipment under unusual or inappropriate conditions is liable to exceed the spatial peak SAR restrictions of Table 2 for general public exposure, instructional material must be provided to caution the user against such usage. This should include any requirements regarding minimum separations.

TABLE S1

SUMMARY OF COMPLIANCE PROVISIONS FOR MOBILE OR PORTABLE TRANSMITTING EQUIPMENT

Equipment parameters	Test exemption	Spatial peak SAR [Table 2 Occupational]	Spatial peak SAR [Table 2 General Public]	Field measurement [Tables 7 & 8 Occupational or evaluation using S5.2.3]	Field measurement [Tables 7 & 8 General Public or evaluation using S5.3.3]
Aware user exposure					
Mean power < 100 mW	✔				
Push-to-talk & mean power < Table S2 & duty factor < 50 % & separation > 2.5 cm	✔				
Mean power > Table S2 & separation > 20 cm				✔	
Otherwise		✔			
General public exposure					
Mean power < 20 mW	✔				
Push-to-talk & mean power < 1/5 of Table S2 & duty factor < 50 % & separation > 2.5 cm	✔				
Mean power < Table S2 & separation > 20 cm	✔				
Mean power > Table S2 & separation > 20 cm					✔
Otherwise			✔		

NOTE: Fixed or vehicle mounted transmitting equipment should be installed in accordance with AS/NZS 4346.

TABLE S2

THRESHOLD LEVELS FOR TESTING

Operating frequency range			Nominal mean output power (W)
100 kHz	to	450 MHz	7
450 MHz	to	2500 MHz	3150 / *f*

NOTES:

1 For the purpose of this Schedule, mean power is as defined in ITU Radio Regulations as the average power over an interval of time which is long compared with the lowest modulating frequency (except for pulse-modulated or intermittent transmissions where mean power is to be taken as peak-envelope-power (PEP) multiplied by duty factor. For duty factors of less than 5 %, mean power is to be taken as 5 % of PEP).

2 ***f* is the frequency in MHz.**

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Care should be taken to ensure that material used is from the current version of the Standard or Industry Code and that it is updated whenever the Standard or Code is amended or revised. The number and date of the Standard or Code should therefore be clearly identified. If in doubt please contact ACIF.

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