Implementation of improvements to device registration under spectrum licensing

This document summarises improvements to the spectrum licensing device registration process that the ACA is planning to introduce in 2005.

These proposed changes are a result of consideration of industry comments on the ACA discussion paper published on this topic in December 2003, and related industry consultation.

Basis of existing device registration requirements

Section 69 of the Radiocommunications Act (the Act) requires registration with the ACA of transmitters deployed under spectrum licences. Registering these devices on the ACA’s public register records the fact that the devices are operating within their licence conditions, allows spectrum licensees to coordinate their devices and it enables speedy interference investigation and resolution by the ACA if subsequent interference complaints are made.

What are the objectives of the proposed changes?

To improve the ACA’s system of device registration by empowering accredited persons to fully utilise the flexibility available within the technical framework for each band in the interests of maximum spectrum efficiency. This is to be achieved by –

(a) removing a procedural anomaly in the existing registration process which allows devices to be registered without certification under subsection 145(3); and

(b) clarifying the options available for accredited persons to develop and apply their own technical methodologies for certification in addition to the ACA prescribed methodology set out in the relevant subsection 145(4) Determination (interference rules).

These two changes (a) and (b) are designed to achieve procedural consistency and technical clarity. This will not alter the basic interference protection levels defined within the existing technical frameworks established for spectrum licensed bands. Nor will these changes alter the present balance of responsibilities for interference management which is shared between the ACA, licensees and accredited persons.

Why are we doing it?

The changes have been formulated in response to industry comments and in light of Recommendation 9.1 of the Productivity Commission’s Review of Radiocommunications released by the Government in December 2002, which stated that –

“Spectrum licensees should be required to certify compliance with core conditions when registering devices. However, the requirement that devices comply with the device boundary as set out in the relevant determinations under section 145 of the Radiocommunications Act 1992 should not be mandatory.”
Consultation

After the Government’s endorsement of this recommendation in the report of the Productivity Commission, the ACA conducted an industry forum on spectrum licensing in which options for implementing PCR 9.1 were discussed (6 March 2003).

No consensus on specific changes was achieved in that forum, although a diverse range of views were canvassed on the topic.

The Radiocommunications Consultative Council (a high level joint industry/regulator body) examined the issue in October 2003 and suggested the ACA undertake further industry consultation to determine the best way forward.

In December 2003 a public discussion paper on this topic was published by the ACA putting forward the two proposals for change. These changes were –

(a) certification for all registered devices; and
(b) allowing accredited persons to use their own equivalent interference management methodology when certifying devices.

Five industry submissions were received in response to the paper. Two of these argued that the proposed changes are unnecessary, while the other three supported the changes to varying degrees, and also made various suggestions for improvement.

Implementation of the proposed changes

After considering all of the industry comments on the ACA’s December 2003 paper the ACA now plans to implement the following two changes to device registration procedures under spectrum licensing:

Proposal 1:

Require certification under section 145(3) from an accredited person for all devices registered under a spectrum licence.

Proposal 2:

Facilitate APs using their own methodologies when certifying a device for registration by –

(a) specifying more clearly in the ACA’s advisory guidelines under section 262 the interference protection levels which apply to each band; and
(b) establishing a procedure for APs to have their own methodologies considered for formal approval by the ACA and incorporated in relevant section 145(4) Determinations where they want a greater level of certainty.

Attachments A and B provide a diagrammatic outline of the existing and the proposed new system of device registration.

The effect of these changes will be that in future all applications to register a device will be accompanied by a certification that will state that the accredited person has followed either –

- the device boundary procedure set out in the relevant Determination under section 145(4) of the Act, or
- an alternative methodology developed by the accredited person using the guard space provisions set out in the ACA’s advisory guidelines under section 262 and which achieves an equivalent level of interference protection, or
- a bilateral (third party) agreement with the ACA or another licensee to operate in their spectrum space.
Amendments to the following ACA legal instruments will be necessary to implement these changes to the device registration rules –

I. Radiocommunications (Accreditation – Prescribed Certificates) Principles 2003;
II. Radiocommunications (section 145(3) Certificates) Determination 2000;
III. Radiocommunications Advisory Guidelines (Registration of Devices under Spectrum Licences without an Interference Impact Certificate) 1998; and

Changes are compatible with existing device registration procedures

In relation to proposal 2 the key difference with the existing system is that the change will rename and enhance the Radiocommunications Advisory Guidelines (Registration of Devices under Spectrum Licences without an IIC) 1998 to identify (by reference to various legal instruments) the parameters upon which the calculation of the necessary guard area and guard band is based. It will also provide a clear summary of the principles of guard space calculation. These details are not all explicitly identified in the existing advisory guidelines, and as a result, some accredited persons have said that they do not feel confident to apply their own methodologies based on the guard space provisions as currently set out.

The change will not alter or any the existing technical parameters, nor will it list “acceptable” propagation models or otherwise codify alternative methodologies. This remains the responsibility of the accredited person who must apply sound engineering principles and their own professional judgement when interpreting the guidelines in specific situations.

Accredited persons who are not confident to interpret the guard space guidelines to certify devices can, if they wish, apply to have their own methodology approved by the ACA for incorporation in the subsection 145(4) determination for the band. However, the ACA’s approval would normally depend upon –

- evaluation of the methodology by a Technical Liaison Group comprising the ACA, licensees in the band and possibly other interested parties (this may take several months depending on the complexity of issues);
- all licensees in the band agreeing to the proposed incorporation of the methodology in the determination; and
- the ACA being satisfied that the proposed methodology will not have the effect of reducing the spectrum utility available under the subsection 145(4) determination.

If an alternative methodology put forward by an accredited person were subsequently approved by the ACA and incorporated into the section 145(4) determination for a spectrum licensed band, this would mean that any devices certified under the alternative methodology would have the same legal status as devices registered under the ACA’s existing device boundary procedure. That is, as long as an AP followed the procedure correctly in its application to a particular situation, the device would be deemed not to cause unacceptable interference as defined in the section 145(4) Determination.

The intent of these proposed changes is to give accredited persons greater confidence in using all of the registration options available under spectrum licensing. It will make it easier to choose the most suitable registration option depending on the degree of certainty required for the situation at hand, but without taking existing responsibilities or flexibility away from accredited persons in relation to certification. It will also achieve greater consistency in the actual registration procedure itself, regardless of which option accredited persons choose.

The changes will not alter the existing rights and obligations of licensees or the ACA, nor will they result in any changes to existing interference protection levels which could affect the value of the spectrum licence asset. Devices which have been registered before these changes come into effect will retain their registered status.

If you would like further explanation or clarification of these proposed changes please feel free to call or email Chris Arndt from the Spectrum Markets Group on (02) 6219 5459.
CURRENT DEVICE REGISTRATION PROCEDURES

DEVICE

Section 145 Determination

OPTION A
Device Boundary Calculation
Certified

OPTION B
Internal guard space principles (APs may use own methodology)
Not Certified

OPTION C
Spectrum sharing agreement(s) with adjacent licensees
Not Certified

Advisory Guidelines

REGISTRATION WITH ACA

Exempt from registration

LICENSEE CAN LEGALLY OPERATE DEVICE
PROPOSED DEVICE REGISTRATION PROCEDURES

OPTION A
Device Boundary Calculation

PROPOSED OPTION D
Alternative ACA - approved methodologies that achieve prescribed level of protection

PROPOSED OPTION B
Internal guard space principles and parameters clarified on a band-by-band basis to facilitate APs using their own methodologies for interference management.

OPTION C
Agreement(s) with adjacent licensees

Exempt from registration

REGISTRATION BY ACA

LICENSEE CAN LEGALLY OPERATE DEVICE